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**EXPLAINING MALE INMATE VICTIMIZATION IN CANADIAN FEDERAL PENITENTIARIES:
A test of Importation and deprivation theories**

Michael Swait, B.A. (Hons.)

**A Thesis
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**Department of Criminology
University of Ottawa
Ottawa, Ontario**

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ABSTRACT

Our understanding of criminal victimization in Canadian penitentiaries is quite limited because little research has been conducted in relation to this phenomenon. As a result, it is quite difficult to determine with any degree of certainty the true extent of inmate victimization in Canada. This paper examines the occurrence of victimization in Canadian penitentiaries to shed light on this phenomenon. Using information derived from the 1995 National Inmate Survey (N = 4,381 male federal inmates), the thesis examines the prevalence of inmate victimization in our federal penitentiaries and its relationship to a variety of institutional and individual indicators, as well as testing the relative usefulness of the importation and deprivation theories in explaining the patterns observed.

Instances of physical assaults, assaults with weapons, sexual assaults, staff assaults, and gang activity show that violent behaviors are a fairly common occurrence in federal correctional institutions. Bivariate and multivariate analyses revealed some support for the existence of a relationship between institutional and individual indicators with inmate victimization in Canadian federal penitentiaries. Theoretical and policy implications of the data are suggested.

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CHAPTER 1: INTRODUCTION

The Correctional Service of Canada (1992a) has documented the continual increase of incidents of inmate aggression/victimization within federal correctional facilities. Over a period of seven years in the 1980s and early 1990s, the recorded number of incidents of violence directed towards inmates increased steadily. An examination of the rates of major assaults on inmates revealed that although there was a decrease from 1983-1984 through 1988-1989, the rate of major assaults against inmates increased from 24.4 per 10,000 inmates in 1988-1989 to a high of 39.8 per 10,000 inmates in 1990-1991. As alarming as these statistics may be, it is likely that they underestimate the true incidence of victimization because of the low reporting rates.

To date, our understanding of inmate victimization is quite limited due to the fact that most of our knowledge about violence in Canadian prisons comes from officially collected statistics. The official rates under-estimate inmate victimization because most inmates who are victims of prison violence never report their victimization. Their silence is due to a perception of staff indifference and/or well-placed fears of retaliation (Bernheim, 1993; Cooley, 1993; Correctional Services of Canada, 1992b; McCorkle, 1993a, 1993b, 1992). In addition, apart from Cooley (1993), there has been no thorough examination of inmate victimization in Canadian federal penitentiaries. For the most part, research conducted by Correctional Services of Canada regarding victimization in the federal penitentiary system is merely descriptive, providing only a summary of the number of reported cases of victimization occurring in the prisons for a given time frame (usually one year intervals). Correctional Services of Canada has not undertaken any major research project to uncover the underlying risk factors associated with inmate victimization in order to prevent its future occurrence. As such, little has been done to diminish the high levels of victimization that occur in correctional facilities.

Moreover, the presence of violent inmate victimization is not the only form of victimization that appears in correctional facilities. Researchers have shown that imprisonment can also lead to psychological, sexual, economic, and social victimization (Bowker, 1980; Lockwood, 1980; Saum, Surratt, Inciardi, & Bennett, 1995; Schreiber et

al., 1980; Toch, 1992). Each form of victimization has several unique features, revealing how prisoners are susceptible to a multitude of stressors.

Psychological victimization is a weapon used by inmates in their constant struggle to maintain and gain status within the prisoner subculture. It encompasses the threat of physical attack through to possible intimidation, although physical force may not be used (Bowker, 1980; Schreiber et al, 1980). Such victimization occurs because the inmate code in many prisons places great emphasis on physical and mental toughness. If a convict reveals himself to be weak as a result of psychological manipulation and intimidation, he may lose status, and ultimately be taken advantage of physically, economically, and/or sexually.

Economic victimization, which involves the misappropriation of goods and services (Schreiber et al., 1980; Bowker, 1985), is facilitated by the fact that all prisons are controlled institutions with a shortage of commodities and a high demand. This leads to the formation of black markets within the prison, where illegal drugs and tobacco have become the major commodities in the sub rosa economic transactions. Because this inmate black market operates without redress through the normative criminal justice system, the threat and execution of violence serves as an extra-legal social control system within the institution (Bowker, 1980; Schreiber et al., 1980).

Social victimization refers to victimization on the basis of being a member of a particular group or social category (Schreiber et al., 1980; Bowker, 1985) including race, ethnicity, religion or sexual orientation, the offense for which one was incarcerated (e.g. sexual offences against children or allegations that one has been involved).

Finally, sexual victimization refers to another form of exploitation occurring in prison. In such cases of victimization, the apparent object is sexual exploitation, where most often the aggressor demands sex from the victim (Lockwood, 1980). Though rape is literally not at issue in most cases of sexual victimization of inmates, it is always figuratively involved. It lurks as the ultimate penalty, "the most extreme form of power that may be held over the victim" by their aggressor (Toch, 1992; p. 188).

All four forms of victimization can be a traumatic experience, pushing inmates to a breaking point and forcing them to rely on extreme forms of adaptation. Prolonged

exposure to these forms of victimization can ultimately culminate in individual or collective forms of violence (Bowker, 1980; McCorkle, 1993a; Toch, 1992; Wright, 1991).

Due to the lack of reliable information on inmate offending and victimization within Canadian prisons, it is difficult to determine and understand with any degree of accuracy their extent. Who are most likely to be victimized? Why is this the case? Such questions have largely remained unanswered by academic research. These issues have not been addressed by researchers within Correctional Services of Canada, and have largely been ignored by the greater academic community.

Purpose of thesis

This thesis will not focus on inmate offending and its relationship to inmate victimization. Its objective is to provide a detailed account of the victimization that occurs among inmates in Canadian federal prisons. There are several major issues that will be addressed in my research, including:

- 1) The prevalence of inmate victimization in our federal penitentiaries.
- 2) The identification of prisoners who are more susceptible to being victimized while they are incarcerated.
- 3) The adequacy of contemporary explanations of inmate victimization in explaining the phenomenon in our Canadian correctional facilities?

Addressing these issues will allow me to develop a detailed understanding of the dimensions of inmate victimization, which can be used to:

1. Design and implement effective security strategies and practices, aimed at fostering a safer environment for the prisoners and staff and reducing the incidents of violent assaults committed by federal offenders against other inmates and staff.
2. Create an environment that contributes to the physical safety and psychological health of inmates and staff, thus maintaining an atmosphere conducive for rehabilitation and

the safe and timely re-integration of offenders back into the community.

In order to answer these questions, this thesis will focus specifically on incidents of inmate on inmate assaults in Canadian penitentiaries. By developing an understanding of the risk factors related to inmate victimization, we can determine the extent to which institutional stressors or individual factors influence inmate victimization in prison. Such information can help to implement effective security strategies to minimize the problem. In order to achieve these goals, I will explore several dimensions of inmate victimization by:

1. Providing an overview of the prevalence of inmate victimization.
2. Analyzing relationships between institutional and individual indicators with inmate victimization.
3. Determining the predictive ability of the Importation versus Deprivation models. Can these models adequately explain the occurrence of inmate victimization?

If inmates most at risk of being victimized could be identified with a reasonable degree of accuracy, management would have a greater understanding of the reasons underlying prison violence, providing them with the tools necessary to deal with the problem. An adequate understanding of inmate victimization can prove beneficial in designing and implementing effective preventative strategies to ultimately reduce violent behavior in Canadian prisons and foster a safe environment for both inmates and staff.

Organization of This Thesis

Chapter 2 outlines the relevant theoretical and empirical literature relating to inmate victimization. The importation-deprivation theoretical debate is the central focus of this chapter. The correlates of victimization are also reviewed.

Chapter 3 provides an overview of the methodology used in this study. The chapter describes the methods employed to appropriate the dataset, the research design and

instrumentation utilized, and the research hypotheses tested in the study. The remaining chapters examine and assess the data collected.

Chapter 4 analyses the incidents of inmate assaults within the Canadian federal correctional system. One of the goals of this project is to provide an overview of the extent of victimization within the Canadian penitentiary system. Toward this end, this study provides an overview of the prevalence of victimization in prison, as well as analyzes the relationships between various institutional and individual characteristics with inmate victimization. Moreover, the chapter explores whether the existing theoretical formulations of prison victimization are capable of providing a coherent explanation of violence in Canadian federal prisons.

Finally, Chapter 5 summarizes the findings of the study, identifies the strengths and weaknesses of the methodology, and discusses the implication these results have regarding future intervention strategies in Canadian penitentiaries. Implications for future research on inmate victimization in Canadian penitentiaries are also discussed.

CHAPTER 2: LITERATURE REVIEW

A. THE IMPORTATION AND DEPRIVATION THEORIES: EXPLAINING INMATE VICTIMIZATION

Collective forms of prison violence and inmate on inmate victimization have been theorized to be a function of both an importation of particular characteristics by inmates into a correctional facility and of specific environmental stressors in the correctional institution itself. The next section highlights this theoretical debate in the academic literature.

However, before delving into these theories, it is important to clarify the scope to this study. Although the theories to be discussed are offender oriented, this thesis is not. The current study is solely interested in incidences where inmates have been victimized by other inmates and not in those inmates perpetrating the victimization. As such, this victimization survey is simply attempting to apply offender-based theories to better understand incidences of interpersonal violence occurring in the prison.

1) Deprivation Model

Advocates of the deprivation model (Irwin & Cressey, 1963; Goffman, 1961, Sykes, 1958, Sykes & Messinger, 1960) argue that prison-specific variables influence violence within prison to a great degree. Sykes developed this thesis during his analysis of a maximum-security prison in the United States. The deprivation model posits that a unique prisoner social system emerges in response to the hardships prisoners endure as a result of their incarceration. Through his work, Sykes identified five painful consequences of imprisonment: 1) the deprivation of liberty, 2) the deprivation of goods and services, 3) the deprivation of heterosexual relationships, 4) the deprivation of autonomy or ability to make choices concerning one's life, and, 5) the deprivation of security (Sykes, 1958: p. 65-78). It is these deprivations that make incarceration painful for prisoners and according to Sykes, "provide the energy for the society of captives as a system of action" (Sykes, 1958: p. 79). The manner in which prisoners attempt to alleviate these pains of imprisonment is central in shaping the types of social structure and systems of patterned behaviours that occur in prison.

Sykes argued that prisoners employed several methods to relieve the deprivations created by the prison and its social and power structure. Some methods of attenuating the pains of imprisonment occur less frequently than others. For example, escape, psychological withdrawal into a fantasy world, rebellion and innovation are mechanisms that are infrequently used due to the structural constraints of a total institution.

The assumption is that the depersonalizing and stigmatizing effects of legal processing and induction into prison, coupled with the alienating effects of the coercive power exercised by prison officials to maintain social control, restrict the methods of adaptation that can be adopted by inmates. Consequently, some inmates may also rely on violent methods of adaptation to deal with the structural restraints of the prison, when other common methods of adaptation are not at their disposal.

Therefore, victimization in the prison can be explained both through the adverse conditions that are experienced through extreme deprivation within the prison, as well as the stressful and oppressive administrative practices present therein (Goffman, 1961; Sykes & Messinger, 1960). Prisons are violent, debilitating, and harsh settings. Inmates experience fear of victimization, a loss of autonomy, are exposed to monotonous and mundane routines and activities, and find that they no longer have access to creature comforts (Bottoms, 1999; McCorkle, 1993a, 1993b; Sykes, 1958). Victimizing other inmates is a type of adaptation to the pains of imprisonment that can be seen as a form of tension reduction: Exploitative, predatory and/or rebellious behaviors towards other inmates provide a means of reducing the pains of imprisonment.

2) Importation Model

According to the importation model (Clemmer, 1958; Irwin, 1970; Irwin & Cressey, 1963), convicted offenders bring to prison a set of subcultural criminal attitudes and beliefs, including those related to the use of violence. Clemmer (1958) as well as Irwin and Cressey (1963) were among the first theorists to enter into the debate with the structural-functionalist interpretations of prison life, which highlighted the notion that the behaviour of prisoners was largely an adaptation to the internal conditions of the prison environment. Irwin and Cressey as well as Clemmer largely disagreed with this

explanation of the influential factors of prisoner's behaviour, arguing that this position largely ignores the fundamental sociological notion that prisoners carry with them to prison certain cultural patterns and beliefs that were developed prior to their incarceration.

To understand victimization, it is simply not enough to know the existing conditions of life in prison. Several theorists argued that a complete understanding of prison life could not be adequately grasped by exclusively examining the conditions of life within the prison (Clemmer, 1958; Irwin and Cressey, 1963). Although these authors agreed with those supporting the deprivational model that there does exist a prison society which emerges as a result of the problems posed by life in prison, they claimed that many of the solutions to the pains of imprisonment are rooted in the values, beliefs and attitudes that the prisoners bring with them to prison. Therefore, incidents of individual and collective forms of violence within the prison can largely be explained by the characteristics, wishes, ambitions, drives and habits which inmates had acquired before entering the prison (Clemmer, 1958).

Clemmer believed that despite the massive turnover of prisoners, there was considerable continuity in the internal culture of prison. This can be considered a function of the social groupings from which the prison population was drawn. As a result, Clemmer argued that the inmate subculture of male prisoners was largely imported, reflecting the anti-social violent behavioural attitudes, and poor educational attainment of lower class males. The prison culture with its code of toughness, resistance, and secrecy is not therefore unique to punitive incarceration. It merely reflects the internalized values and beliefs that many inmates have learned and developed through their social interactions with peers and authority figures prior to incarceration. Quite simply, when incarcerated, violent felons simply continue a normal course in their daily life, including preying on others.

3) Summary: Competing Explanations

The importation model of inmate behaviour emerged as a challenge to the deprivation model, which claimed that it was the restrictive nature of imprisonment that

was the dominant factor in inmate adjustment. Traditionally, within the sociological literature on imprisonment these models have been cast as competing alternative explanations. However, it has been argued that these models are complementary. Thomas (1977), for example, has argued that they are not theoretically incompatible, since it is likely that the prisoner's social and cultural background will provide the conceptual framework through which the deprivations of imprisonment will be perceived and experienced.

There are few attitudinal or behavioral dispositions that are so powerful as to totally determine actions in all situations, and few environmental events which can compel identical responses from people with varying dispositions. Therefore, one would expect that the interaction between the individual and his/her environment would be the most powerful determinant of behaviour (Porporino & Zamble, 1984). Ultimately, the prison environment and inmates' characteristics interact together, determining to a large extent the occurrence of offending and victimization among prisoners.

B. CORRELATES OF INMATE OFFENDING AND VICTIMIZATION

There remains a great deal of disagreement over the explanatory power of the importation/deprivation model, and the priority that should be accorded to each in accounting for the processes of adjustment in the prison (Matthews, 1999). Before delving into this issue, at this point it is necessary to conceptually distinguish between offending and victimization. Each incident of criminal violence necessarily involves one or more offenders and one or more victims. It is also possible that in a particular incident, the same individual may be both an offender and a victim (i.e., suicide and self-injurious behavior). The following sections will review studies of inmate offending and victimization with a particular focus on variable that relate to characteristics that offenders bring into prison and how these factors are related to the circumstances of prison life.

1) Canadian Studies of Inmate Victimization

The problem of inmate offending and victimization within federal penitentiaries has received scant attention in Canada. A review of the literature only uncovered one study that specifically examined the phenomenon of inmate violence in the Canadian penitentiary system. The study was descriptive in nature, providing accounts of the extent and prevalence of victimization in Canadian prisons.

Cooley (1993) examined the prevalence and characteristics of prison victimization among incarcerated inmates in five adult male Canadian federal prisons using a survey methodology (N = 117). Cooley asked his respondents to recall prison victimizations over a twelve-month period. Cooley also had access to the official disciplinary records for the five institutions studied. For assaults and fights, the survey-reported incidents of victimization were more than three times higher than the official rates (Cooley 1993), although multiple victimizations were rarer than might reasonably have been expected in a twelve-month time-frame. Logistic regression determined the probability of victimization based on several predictor variables (age, security level, and admission date). The results revealed that age and security level were significant predictors of victimization. Compared to non-victims, the author concluded that victims were younger, were more likely to be housed in maximum security prisons, and were more likely to be in the early stages of their prison sentence (Cooley, 1993).

A recent meta-analysis by Gendreau, Goggin & Law (1997) examined the predictors of offending. It was their goal to gain a better understanding of which variables can predict offending¹. A meta-analysis was conducted on 39 studies examining prison misconduct, the vast majority originating from the U.S. and only a handful from Canada. The studies were selected from published and unpublished sources, and utilized predictive analytical techniques; that is, the evaluation of the offenders' personal and situational characteristics occurring prior to an assessment of prison misconduct (Gendreau, Goggin & Law, 1997).

Predictors of offending were grouped into the following domains: personal characteristics, situational factors, actuarial measures of antisocial personality and risk². It was found that personal and situational factors were similar in their ability to predict

prison misconduct. Personal predictors such as criminal history and antisocial attitudes and behaviors were powerful predictors of prison misconduct. Variables such as race, early family factors, and social achievement were shown to be capable of moderately predicting prison misconduct among inmates. Only the predictors of religiousness, cognitive abilities, and personal distress were unable to account for an inmate's prison misconduct. Moreover, many situational variables were found to be good predictors. All of the situational variables in the meta-analysis were significant predictors of prison misconduct, with the institutional factors (custody levels, density indexes, and type of programming) producing the largest mean correlation with prison misconduct (Gendreau, Goggin & Law, 1997).

Overall, these findings lend credence to the notion that both individual and situational factors play an important role in prison behaviour. However, it is problematic to draw such conclusions from such a limited amount of research. Therefore, in order to generate a better understanding of inmate victimization, the present author also reviewed a wider body of research than that covered by Gendreau and his colleagues. Since the 1930s, there has been a great deal of American research on the nature, prevalence, and the extent of victimization in prison. This body of literature will be examined in order gain a greater understanding of the processes that are influential in the emergence of inmate victimization within correctional facilities.

2) British and American Studies on Inmate Aggression and Victimization

The following section overviews several correlates of inmate victimization presented by American researchers as explanations of inmate victimization. These findings will be integrated with the limited Canadian knowledge on inmate offending and victimization to inform the hypotheses that will be tested in the current research study.

i. Age

Within the research on inmate aggression and victimization in North America and Britain, age has consistently emerged as a strong correlate of inmate aggression. Generally, it has been shown that younger inmates are most likely to be victimized while

serving their sentence in prison (Ditchfield, 1990; Cao, Zhao, & Van Dine, 1997; Gaes & McGuire, 1985; Maitland & Sluder, 1998; McCorkle, Miethe & Drass, 1995; Walters, 1998; Wooldredge, 1994, 1998, 1991; Wright, 1991).

MacKenzie (1987) conducted a relevant study on this issue in four medium and maximum-security prisons for males in the United States. In order to measure the levels of conflict/aggression for the prisoners in the sample, the author relied on three measures: a self-reported scale (Inmate conflicts) constructed to measure the amount of conflict respondents engaged in with other prisoners; a second self-reported scale (Guard Conflicts) measuring the amount of conflicts respondents had with guards; and the official record of the prisoner was used to determine the number of misconduct tickets the respondent received. For prisoners over the age of twenty, seven separate age-bands were identified (the oldest being 50+), and all three of the conflict measures showed a significant decline in rates from younger to older age categories. What proved interesting in this particular study was the speed with which the decline occurred within rates of self-reported conflict. The major misconducts scale dropped rapidly from the age twenty to age thirty to thirty-four, dramatically slowing down thereafter (MacKenzie, 1987). However, the rates of decline for the inmate conflicts and the guard conflicts decline relatively slowly in the twenties.

The American literature has consistently replicated the finding that younger inmates are more likely to be victimized in the prison than are older inmates (O'Donnell & Edgar, 1998). Walters (1998) examined inmate-initiated assaultive incidents on inmates and staff reported by staff in a large correctional system over a nine-year period. The analysis revealed that age was significantly correlated with incidents of assault in prison. The younger the inmate, the greater the likelihood that he was susceptible to being assaulted in prison.

ii. Race

Race has proven to be a somewhat inconsistent predictor of the commission of offending and victimization. There have been a number of studies from a variety of countries that have provided conflicting results on the relationship between race and

victimization. While some have found an association between these variables, other studies have failed to replicate this relationship.

However, as a sociological construct, race proves to be a problematic variable in the victimization literature, as “race” will likely refer to different categories in different societies such as Canada, United States, and Britain. In essence, race is visualized and understood differently depending on the society, having its own unique history, which can be markedly different between two countries. Although the studies examined in this section have originated from a number of countries, it is not the author’s intention to broadly generalize their results to support the notion that certain racial groups are victimized at a greater rate while incarcerated. The studies are used to simply establish whether there is evidence to support the notion that racial minority groups (be they White, Black, Hispanic, Asian, etc.) are more likely to be victimized while incarcerated than the racial majority group(s) in prison.

Harer & Steffenmeiser (1996) provide an example of the effect of racial background on the incidence of violence in U.S. prisons. Using a large sample of male prisoners incarcerated in the federal prison system (N = 24,000), the authors studied the relationship between race and incidents of prison violence by examining their prison records. The researchers found that black inmates were found, after applying statistical controls, to have higher prison interpersonal violence rates than whites (Harer & Steffenmeiser, 1996). Walters (1998) has also found support for this relationship. Walters examined the effect of the ratio of black to white offenders on incidents of assaultive behavior. He reports that the racial compositions of the prisons were significantly correlated to assaultive behavior. The greater the ratios of blacks to whites, the more assaultive behaviors were reported by the staff.

In another American study, Wooldredge (1994,1998) linked racial minority groups to an increase in the likelihood that inmates would be victimized while incarcerated. In both studies, based on official victimization statistics, inmates of racial minority groups had a greater likelihood of being victimized in prison. McCorkle, Miethe & Drass (1995), using data from 371 American state prisons, found that increases in white to black guard ratios resulted in higher rates of inmate and staff assaults. Swait

& Weinrath (2000) also supported the argument that racial groups were related to victimization in American prisons. In their sample, inmates from racial minority groups reported higher rates of victimization than white inmates.

However, not all research has corroborated the significance of racial groups as a valid predictor of inmate victimization. Research results on the relationship between racial minority groups and victimization in prison, using prisoner victim survey data; do not reproduce the trend usually found in studies relying on official statistics. In a British study, O'Donnell and Edgar (1996) found differing results for adult prisoners and for younger offenders: for adults, there was no statistically significant difference in victimization by racial groups, but among younger offenders, whites and Asians were significantly more likely to be victimized than were blacks. Maitland & Sluder (1998) also report similar findings. Studying victimization among younger American prisoners, they found that whites did not have significantly higher rates of victimization than nonwhites. Overall, these findings call into question the ability of race to predict victimization within the correctional system.

iii. Criminal and social history

There is a general consensus in the literature that, apart from those convicted of homicide, most violent offenders tend to have higher rates of prison infractions than nonviolent offenders (Bottoms, 1999). However, one must be aware of the important role that age plays in this relationship, notably the strong correlation of youth with prison violence. Therefore, studies of the criminal history of perpetrators of prison violence that do not control for age are of limited value.

For example, using a cross-sectional analysis of the patterns of inmate adjustment (N = 942), Wright attempted to assess which variables accounted for the variance between the perpetrators and victims of violence. Throughout the examination of this phenomenon, Wright utilized several indicators of violence and victimization, relying on the construction of several background variables, personality types, and environmental concerns³ (Wright, 1991). In the cross-sectional study, Wright (1991) noted that victimized prisoners, as well as being younger, tended to have histories of

unemployment, were less educated, were more likely to be single and were sentenced for the first time at a younger age. Other research studies have supported these findings (Cao, Zhao & Van Dine, 1997; Wooldredge, 1994, 1998; Swait & Weinrath, 2000; Walters, 1998). In addition, subsequent studies have revealed that histories of substance abuse and the maintenance of violent attitudes increase the probability that inmates will be victimized while incarcerated in prison (Swait & Weinrath, 2000; Swann & James, 1998).

Therefore, according to the importation theory, these attributes lead one to infer that certain people come to prison less prepared to deal with its exploitative and oppressive conditions. It could be logically concluded that some offenders have an increased likelihood of being targeted through violence because they lack the street or institutional experiences that may help protect them in the prison.

iv. Institutional deprivation: Absolute and relative deprivation

In contrast to the importation model, the deprivation model proposes that most inmate aggression is the product of the stressful and oppressive conditions within the prison itself (Goffman, 1961; Sykes & Messinger, 1960). Typically, it has been found that measures of absolute deprivation; such as overcrowding, visiting patterns, fear, stress, prison programs, relations with guards, and the stringency of rule enforcement are associated with levels of disorder and violence within the prison system (Cao, Zhao & Van Dine, 1997; Cooke, 1989; Gaes & McGuire, 1985; Light, 1990; McCorkle, 1993a; Megargee, 1976; Montgomery & Crews, 1998; Silberman, 1988, 1995; Swait & Weinrath, 2000; Walters, 1998; Wooldredge, 1994, 1993, 1991). In essence, victimization in such situations is viewed as an expressive form of tension reduction. Research has also shown that deprivation provides the incentive for exploitative and predatory behavior towards inmates as a means of reducing the pains of imprisonment (McCorkle, Miethe & Drass, 1995; Schreiber et al., 1980; Toch, 1992). It has long been argued that harsh prison conditions produce collective violence (i.e. riots) by generating pressures that become so intense that prisoners break out in an unexpected rage (Tannenbaum, 1938).

However, researchers have argued that because the pains of imprisonment are not constant and omnipresent, stress is an inadequate measure to explain prison disturbances, violence, and victimization (Wilsnack, 1976). Such criticism has led some researchers to focus on relative deprivation. This perspective assesses changes in the levels of deprivation or the perceived discrepancy on the part of inmates between their achieved and expected status and goals (Cao, Zhao, & Van Dine, 1997; Gaes & McGuire, 1995; McCorkle, Miethe & Drass, 1995). As the levels of deprivation change, it is argued that victimization rates would fluctuate as well. Therefore, in cases of acute deprivation in prison, we would expect to see higher rates of victimization. However, there has been much controversy surrounding the use of relative deprivation as a measure of individual and collective forms of prison victimization.

Although research has supported relative deprivation as a cause of prison victimization and violence from case studies in Michigan (Barak-Glantz, 1985), West Virginia (Martin & Zimmerman, 1990), and New Mexico (Useem, 1985), several studies have not shown consistent findings. Researchers have found little evidence to support a relationship between the change in the conditions of deprivation and outbreaks of victimization and collective violence (Cao, Zhao, & Van Dine, 1997; DiIulio, 1987; McCorkle, Miethe & Drass, 1995; Reisig, 1998).

For example, in a recent study, McCorkle, Miethe & Drass (1995) used data from 371 U.S. state prisons on officially recorded assaults on inmates and staff in an attempt to identify the managerial, structural, and environmental determinants of victimization. Several variables assessing inmate deprivation, prison management, and the prison's external environment were compared to the incidents of assaults occurring in prison⁴. The regression equation revealed that indicators of deprivation were unable to account for instances of prison violence. It was discovered that indicators of prison management could moderately predict rates of assaults towards prisoners and staff.

Moreover, Cao, Zhao, & Van Dine (1997) tested the predictive capability of the relative deprivation model (measured used were: security level, sentence length, indeterminate sentence) for receiving prison disciplinary tickets for behaviors that pose a threat to the security of the institution (i.e. fighting and assaults). Their main findings

failed to support the predictive ability of the relative deprivation model. In their regression model, the measures of deprivation (security level, sentence length, and serving an indeterminate sentence) failed to explain with any degree of significance the number of prison disciplinary tickets issued to prisoners. Several indicators of the importation model (age, education, and race) better predicted the distribution of disciplinary tickets than indicators of the deprivation model.

v. Variables relating to conditions of imprisonment

Social scientists have generally hypothesized that several institutional variables are influential in understanding inmate victimization. Over the years, the indicators that have received the most attention are the inmate's security level, the length of the sentence, and the phase of their sentence.

Consistent with the findings of Cooley, research studies have consistently shown that rates of prison victimization are higher in maximum-security than prisons with lower security levels (King & McDermott, 1995). However, because prisoners considered to be more difficult or violent are typically placed in higher levels of custody, it might simply be the combined individual effects of difficult prisoners that are being measured. Consequently, a number of studies have attempted to assess the importance of security level while controlling for several individual level variables (Baskin, Sommers, & Steadman, 1991; Mandaraka-Sheppard, 1986; Wright, 1991). Using a variety of different individual-level variables as controls in addition to different measures of prison violence (official and self-reported); researchers have replicated the finding that higher security levels are associated with greater violence in the prison.

When examining the impact of the phase of the sentence, the literature provides the reader with a complicated picture. A number of studies have found that aggressive behavior in prison tends to peak relatively early in the prisoner's sentence, and then decline – a particularly prominent pattern among young prisoners (Toch & Adams, 1989; Adams, 1992). However, interpretation of these findings has proven difficult. Many studies finding such an effect tend to use official statistics on prison violence instead of self-report victimization surveys (Bottoms, 1999). Hence, it is of special interest that

Wright (1991) found, in a multivariate analysis that: using official data, that newly arrived prisoners had higher infraction rates than long-serving inmates; but using self-reports of aggressive behaviors, time incarcerated did not appear in the multivariate model. Based on these results, Wright (1991) postulates that “shorter and longer-term inmates do not have different actual rates of aggressiveness, but that the system’s response determines who will be charged with rule infractions. If there is any validity to this interpretation of the data, then there is also potential relevance in the study of Toch and Adams which found a much stronger time-decline effect for younger inmates than for adults, and MacKenzie (1987) who determined that the younger prisoners in her sample showed greater disjunction between official infraction rates and self-reported measures of prisoner conflict.

In summary, the literature reveals that inmate security level has been consistently related to prison violence, although attempting to interpret this particular finding proves challenging. Research findings are inconclusive with regards to the effect of the time served on prison violence.

vi. Participation in prison activities: Program involvement and recreational activities

The impact of participation in prison programs and recreational activities on inmate victimization has been an area that, until recently, has been largely ignored by researchers. However, Wooldredge (1998) recently argued that opportunities for victimization might be influenced by an inmate’s involvement in the activities that (1) either increase or decrease his associations with those who are most likely to commit institutional crime, and (2) influence his exposure to ‘high-risk’ situations in the correctional institution. It has been hypothesized that having inmates spend a substantial amount of time in structured activities (e.g. vocational training, work assignments, educational classes, and/or legitimate recreational activities) will decrease the likelihood of being victimized because these activities take place under the supervision of guards and other correctional staff. Conversely, as an inmate increases his/her involvement in less structured activities (e.g. recreation time, watching television, and time spent alone) there are greater possibilities for victimization to occur.

Given the recent focus on this area, few studies have examined the effect of program involvement on incidents of inmate victimization. The research studies that have explored this phenomenon have generally supported the hypothesis that participating in programs and activities while in prison reduces the chances of being victimized by other prisoners. For example, Wooldredge (1994) examined the impact of the participation in prison programs and recreation on the rates of victimization of 500 inmates in a southwestern state medium-security correctional facility.

The data collected through self-report surveys included a number of importation and deprivation indicators as well as information concerning participation in programs and recreation activity⁵. The analysis of this information revealed that several factors increased the likelihood of being victimized while incarcerated in prison. The amount of time participating in group recreational activities and the amount of time spent in group education activities were significantly correlated with the likelihood of victimization. More specifically, the greater the number of hours spent participating in recreational activities, the higher the probability that an offender would be victimized. On the other hand, the fewer number of hours spent in education, the higher the likelihood of victimization among inmates. Involvement in a work assignment proved insignificant in predicting the likelihood of victimization.

In a subsequent study, Wooldredge (1998) replicated many of his initial findings mentioned previously. Relying on official statistics from three correctional institutions, Wooldredge examined the applicability of a lifestyles theory to the understanding of inmate physical assaults in prison. Using a variety of demographic variables (age, race, education, etc.) as well as lifestyles indicators (education/study hours, job hours, vocational training hours, and recreation hours), the author constructed hierarchical models. Several factors proved to have the ability to significantly predict physical assaults. Age, education/study hours, and recreation hours were interpreted as significant predictors of the likelihood that inmates would be physically assaulted while in prison. Moreover, the more hours spent in education reduced the likelihood of victimization while the more time spent in recreation, the higher the probability of victimization.

Recent research has bolstered these findings, demonstrating a correlation between program involvement and victimization in prison. Using a sample of 487 male inmates from the U. S. prison victimization survey, Swait & Weinrath (2000) tested the applicability of the lifestyles theory as well as the importation/deprivation model to determine their capability to predict inmate victimization. Several indicators including participation in prison programs (number of hours a week attending classes, and work assignment) and participation in recreation (number of recreation hours per week) were used to construct a model of the lifestyles theory. Many of these variables were significantly correlated with either an increase or decrease in the likelihood of victimization. For example, as an inmate spent more time in classes, the probability that he would be victimized decreased. Participation in a work assignment also led to a decrease in the likelihood of an inmate being victimized. However, the number of hours a week spent in recreational activities did not predict victimization among inmates.

C. SUMMARY: THE CURRENT STATE OF KNOWLEDGE

This review of the literature reveals that there is a complex relationship between environmental factors and individual characteristics and their influence on inmate victimization in correctional facilities. Although several measures of deprivation, such as overcrowding, visiting patterns, security level, guard-inmate relations, and the stringency of rule enforcement, are associated with levels of disorder and violence within the prison system (Cooke, 1989; Gaes & McGuire, 1985; Light, 1990; McCorkle, 1993a; Megargee, 1976; Silberman, 1988; Walters, 1998; Wooldredge, 1998), there has been no consistency in the findings. Several studies attempting to determine the applicability of the deprivation model in explaining inmate victimization were unable to confirm a relationship (Cao, Zhao, & Van Dine, 1997; McCorkle, Miethe & Drass, 1995, Swait & Weinrath, 2000; Wooldredge, 1994).

Moreover, there has been a great deal of criticism surrounding the methodological decisions made by researchers in investigating the phenomenon of inmate victimization within prison facilities. For example, there has been a great deal of controversy surrounding the use of relative deprivation as a measure of individual and collective forms of prison victimization (Cao et al., 1997; Gaes & McGuire, 1995; McCorkle et al.,

1995). To date, several measures consistent with the importation and deprivation models have failed to adequately explain victimization in prison.

The major problem with the deprivation model is that it fails to account for variations in levels of prison victimization. Although all these deprivation factors may be present in a number of institutions, their levels of victimization and violence are not similar. The variability in the rates of victimization and violence leads to the assumption that other factors play a critical role in the occurrence of victimization and violence within correctional facilities. Consequently, pre-institutional inmate characteristics can plausibly account for the occurrence of victimization.

Researchers have generally supported the idea that an inmate's age is inversely related to the likelihood of victimization among younger inmates. Other factors have also been shown to influence victimization. Indicators such as race, history of violence, educational attainment, employment, marital status, violent attitudes, and a history of substance abuse, have been shown to account for the presence of violence and victimization across correctional institutions (Cao, Zhao, & Van Dine, 1997; Gaes & McGuire, 1985; Gendreau, Gogin, & Law, 1997; Maitland & Sluder, 1998; McCorkle, Miethe & Drass, 1995; Swann & Jones, 1998; Walters, 1998; Wooldredge, 1994; Wright, 1991). Moreover, the degree of integration the inmate has within the prison system may also influence the extent of victimization in prisons. The participation of inmates in a number of programs and recreation activities can influence their probability of victimization. In other words, the structure of an inmate's lifestyle and participation in activities can ultimately determine an inmate's vulnerability.

This body of literature adds to our collective knowledge of inmate victimization. From the research, we can conclude that both characteristics imported into prison and institutional characteristics play some role in the incidences of inmate victimization within the prison setting. Although the two models were equally supported by the literature, the review of the literature suggests that the evidence relating to the importation model is more consistent. However, the literature reveals that many ambiguities and problems still need to be addressed if we are to develop a succinct and coherent explanation of inmate victimization in Canadian federal penitentiaries. The

presence of several unresolved issues suggests the need for a full study of the prison's daily environment, examining both the effects of importation and deprivation indicators as influential factors in inmate victimization.

For instance, it is theoretically difficult to argue that the importation and deprivation models are mutually exclusive when explaining the occurrence of victimization in prisons. Although sociological literature on imprisonment has traditionally cast the importation and deprivation models as competing alternative explanations, Thomas (1977) has demonstrated that they are not theoretically incompatible. Logically, it is quite probable that a prisoner's social and cultural background will provide the conceptual framework through which the deprivations of imprisonment will be perceived and experienced. There are few attitudinal or behavioral dispositions that are so powerful as to totally determine actions in all situations, and few environmental events which can compel identical responses from people with varying dispositions. Therefore, we would expect that the interaction between the individual and his/her environment would be the most powerful determinant of behaviour (Porporino & Zamble, 1984).

Furthermore, this debate has been criticized as being an antiquated explanation of prison violence and victimization, because it fails to incorporate the changes that have occurred within the prison system. The importation-deprivation debate can be criticized because its portrayal of the inmate code has remained relatively static over the past fifty years. Between the 1950s and the new millennium, prisons in Canada and the United States have undergone significant changes in their structure and demographics. For example, during this period both countries have witnessed changes with regards to the rehabilitation ethos.

This shift in emphasis is evident in the shift from rehabilitation to retributive practices apparent in the changes to parole and early release systems introduced in the United States during the 1950s, and during the late 1950s in Canada (Roberts & Cole, 1999). In the United States, there has been an astronomical increase in the number of prisoners incarcerated in American penitentiaries, during the last twenty years, leaving many correctional jurisdictions the task of accommodating the large influx of prisoners

within a fixed spatial environment. Some prisons in the U.S. and Canada have also seen the entrenchment of gangs in the prison organized along racial lines (Jacobs, 1977; Swait & Weinrath, 1999). Moreover, the recent rise of Aboriginal assertiveness may be producing changes in the social world of the prison in Canada, especially in prisons where Aboriginal persons comprise the majority of prisoners (e.g., Saskatchewan and Manitoba). Yet, despite the significant changes that have occurred in correctional jurisdictions, researchers' portrayal of the inmate code and the importation/deprivation debate have remained constant. They fail to take into account the significant changes that have occurred in the social structure of the correctional system (Cooley, 1992).

In addition to providing a descriptive analysis of inmate victimization, this thesis will critically evaluate the extent to which the theoretical rival deprivation and importation explanations have the predictive capability to account for instances of inmate aggression and victimization in the Canadian penitentiary system.

CHAPTER 3: RESEARCH DESIGN & METHODOLOGY

In Canada, our knowledge about inmate victimization has been very sparse. No recent research studies, with the exception of Cooley in the early 1990's, have attempted to critically examine the phenomenon of inmate victimization in Canadian federal penitentiaries. By broadening our understanding the dynamic relationship underlying inmate victimization we will truly be able to ensure that Correctional Services of Canada fulfills its dual mandate of returning offenders to society as law-abiding citizens and exercising reasonable, safe, secure and humane control of incarcerated individuals. Exposure to a violent environment defeats this purpose, harming offenders and perpetuating criminal tendencies and maladaptive behaviours.

The most desirable methodology to study the phenomenon of inmate victimization at an aggregate level was the use of survey methodology with questionnaires or open-ended interviews with prisoners. Because of strict time and financial restrictions, however the most cost-effective solution to obtain the necessary data to test the author's hypotheses was to examine an existing dataset and carry out secondary data analysis. Several criteria were followed in the pursuit of a suitable dataset for this research project.

First, the dataset needed to examine incidents of inmate victimization in *Canadian penitentiaries*, in a fashion permitting the analysis of the relationships between institutional and individual indicators and inmate victimization, and the predictive ability of indicators. Second, the dataset also needed to be fairly recent. Third, it needed to have a fairly large representative sample (e.g., sample size exceeding 1000) of preferably male and female respondents to ensure generalizability of the findings and minimize the impact that missing cases could have when running statistical tests. After an exhaustive search, the author located a suitable Canadian dataset on inmate victimization, the 1995 National Inmate Survey.

1) Data Collection

i. Source of the data

The data used in this study were obtained from a questionnaire designed by the Research Division of Correctional Research and Development at Correctional Services of Canada to explore several important issues affecting incarcerated prisoners in the Canadian correctional system. The dataset was located through a report documenting the survey conducted in 1995 with inmates on issues relating to incarceration. The Director General of the Research Division at Correctional Services of Canada graciously provided access to the dataset for the purposes of this thesis.

The original survey consisted of questions that attempted to gauge, among other things, “the prevalence and occurrence of inmate victimization in Canadian Federal Penitentiaries in all three-security levels and across the country” (CSC, 1995). The questions encompassed several issues surrounding prisoners’ perceptions and opinions of incarceration in federal prisons operated by the Correctional Service of Canada, such as:

➤ The Institutional Environment

- Prison environment
- Double bunking
- Visiting
- Grievance procedures

➤ Security

- Physical security
- Physical assaults
- Sexual assaults
- Weapon assaults
- Physical assaults by staff
- Staff safety

➤ Staff and Programs

- Relations with staff
- Case management
- Religious needs
- Satisfaction with work experience
- Program exposure
- Program quality

- Opinions of programs and motives for participating
- Anti-criminal orientation
- Mental health services

➤ **Health issues**

- Smoking policy
- HIV perceived threats
- HIV risky practices
- Drug use
- Effect of urinalysis
- Institutional stressors
- Depression
- Medical services

The 1995 National Inmate Survey was the ideal source of information to conduct the following research for several reasons. First, the survey relies primarily on self-reported victimization by inmates, which generally reveals more instances of a desired phenomenon than relying solely on official statistics. Secondly, the large representative sample of the Canadian inmate population permits one to generalize the findings to the total inmate population. Finally, the large sample ensures that missing cases should not become a problem when running statistical tests. There should be an abundance of cases without having to be concerned about running out of cases to run particular statistical procedures.

Because of the sensitive nature of this study, all steps to ensure complete anonymity and confidentiality of the inmates were taken as outlined by the University Ethics committee (see Appendix A). Given the sensitivity of the research project, the maintenance of the prisoners' anonymity and confidentiality was of utmost importance. Therefore, in order to fulfill the obligation of privacy, anonymity, and confidentiality, all indicators identifying the inmate (re: name, FPS number, etc.) were expunged from the dataset before Correctional Service of Canada released it to the author.

ii. Sampling process

The Correctional Service of Canada did not themselves administer the survey to the inmates in the federal penitentiary system. Price Waterhouse Coopers undertook the

contract to conduct the actual interviewing of inmates. Price Waterhouse Coopers interviewers from across the country were deployed to survey the inmates in the current sample.

The inmates were selected from a CSC masterfile. Using this file, inmates were randomly selected within each institution based on quota targets set by Correctional Services of Canada. The populations and the minimum quotas required for the administration of the questionnaire are illustrated in Table 1. The sample is comprised solely of male inmates in the Canadian penitentiary system. Women were not included in the sampling process because, at the time, the women's system was undergoing a number of structural changes, making it impossible to implement the survey in women's prisons during the data-gathering phase (CSC, 1995). Overall, a total of 4,283 prisoners participated in the survey. The response rate varied across institutions, with each region having a response rate of over 90% (CSC, 1995). Nationally, the questionnaire had a 96.8% response rate.

Table 1 – Sample Distribution By Region

Region	Total Population	Required Sample (Quota)
Atlantic	1, 366	440
Quebec	3,558	1,203
Ontario	3,479	1,130
Prairie	3,083	879
Pacific	1,836	729
Total	13,322	4,381

Source: Correctional Services of Canada (1995)

This dataset provided the flexibility to examine the incidents of inmate victimization in Canadian penitentiaries, the relationships of institutional and individual indicators with inmate victimization, and the predictive ability of theories derived from the American prison experience.

2) Conceptualizing the key concepts

i. Inmate victimization

Research indicates that prevalence rates for specific forms of violence in Canadian federal prisons are high compared to a sample of North American prisons (Cooley 1993). However, the true depth, nature and extent of violence in Canadian federal prisons are not fully understood. To date, our understanding of inmate victimization is quite limited due to the fact that the bulk of our knowledge about violence in Canadian prisons comes from officially collected statistics, which have been shown to have several limitations. In most studies of prison violence, violence was the dependent measure in a search for variables that lead to its cause. When official data are used, many researchers collect aggregate data, ignoring individual level data on prison violence and victimization. Gaes and McGuire (1985) justify using system level data because, they claim, assaults are a relatively rare occurrence; therefore using individual level data would prove to be too prohibitive.

The limitations of official criminal justice statistics have been well documented. Based on what is known about official crime statistics in the general community, it is highly likely that official rates of prisoner rule violations largely underestimate the 'true' extent of criminal behaviour in the prison. Quite simply, such information may not fully represent the actual occurrence of inmate victimization occurring in Canadian correctional facilities. Official rates of prisoner rule violations may simply be a measure of the most serious types of prison misconduct, or they may reflect the prison administration's or correctional officers' desire to concentrate their policing efforts on certain prisoners (or categories of prisoners) who have a reputation for being particularly unmanageable.

Victimization surveys overcome some of the difficulties associated with official measures of crime and provide a more complete estimate of the total number of criminal victimizations per specified crime category in a given community, but victimization surveys cannot uncover the entire 'dark figure of crime'. In victimization surveys, the size and representativeness of the sample will determine the survey's generalizability but a margin of error will always remain and, therefore, the survey will always remain an estimate (Fattah 1991: p. 49). Victimization surveys also have built-in limitations; one of which is operationalizing the concept researchers desire to measure. Block and Block

(1984: p. 151) have suggested that criminal victimization surveys cannot uncover the entire 'dark figure of crime' as they were originally intended to do because "there is no 'real' number of criminal occurrences." Aside from limitations such as forward and backward telescoping, and respondents forgetting, lying or misrepresenting victimization incidents, victimization surveys and official crime reports construct victimization rates differently. Notwithstanding these limitations, criminal victimization surveys do provide valuable information that overcomes some of the limitations of official statistics.

Although a considerable amount of criminal victimization research has been conducted at the national and local level, the majority of this type of research has taken the form of general social surveys and scant attention has been paid to victimization at the institutional level, such as schools and mental institutions. Virtually no research directed specifically at estimating a broad range of victimizations in prison has been conducted, although prison victimization has been dealt with tangentially by Clemmer (1958) & Sykes (1958).

These studies reflect the tendency among prison researchers to take a case study approach to the problem of violence (Bowker 1980: p. 205). The majority of violence research in prison has been concerned with prisoners as victimizers rather than victims with the goal of uncovering the relationship between violence in prison and variables such as population density (Megargee 1976), age (MacKenzie, 1987; Maitland & Sluder, 1998; McCorkle, Miethe, & Drass, 1995; Walters, 1998), or the relationship between violent offenders and violence in prison (Gaes and McGuire 1985; Wright, 1991).

Fattah (1991) speculated that 'institutional victimization' might be qualitatively different from victimization in the general community. He suggests that these two types of victimization may not vary in form but there is likely variation in the relationships between the victims and the offenders. On the other hand, Walklate (1989) suggested that victims and offenders in the community and in institutions may be similar in terms of power and exploitation but these relationships may be rendered more visible in examinations of victimization within institutions. There is, however, little systematic research on institutional victimization, including victimization in prison.

Therefore, this thesis focuses on incidents of interpersonal violence. Such incidents are categorized by prison administrators as the unjustified use of, and threats of

actual physical force (Bottoms, 1999). Therefore, incidents of assaults (with or without a weapon) committed against inmates by other inmates will be tabulated to test the research objectives of this paper.

ii. Importation/deprivation theories

Researchers have attempted to explain the occurrence of many forms of prison victimization in male correctional facilities. As such, scholars and researchers have continuously attempted to theoretically explain inmate violent behaviour within the prison environment (Cao et al, 1997). Within the academic realm of criminology, there have been only two dominant theoretical discourses that have been posited to explain instances of violence such have riots and victimization. Collective forms of violence and inmate victimization have been argued to be a function of either an importation of particular characteristics by inmates upon their entry into a correctional facility and specific environmental factors of the correctional institution itself.

According to the importation model (Clemmer, 1958; Irwin, 1970; Irwin & Cressey, 1963), lower class offenders bring to prison a set of subcultural attitudes and meanings, including those related to the use of violence. Therefore, incidents of individual and collective forms of violence within the prison can largely be explained by the wishes, ambitions, drives and habits which inmates had acquired before entering the prison (Clemmer, 1958). Through the process of prisonization, the prisoners adapt to imprisonment. It was Clemmer's opinion that despite the massive turnover of prisoners there was considerable continuity in the internal culture of prison. This can be considered a function of the social groupings from which the prison population was drawn. Clemmer argued that the inmate subculture was largely imported, reflecting the predominant male, lower class, violent attitudes and poorly educated nature of the prison population. The prison culture with its code of toughness, resistance, and secrecy is not therefore unique to prison incarceration; it merely reflects the internalized values and beliefs that inmates have learned and developed through their social interactions with peers and authority figures prior to incarceration. Quite simply, when incarcerated, violent felons simply continue a normal course in their daily life, preying on the other inmates that surround them.

Advocates of the deprivational model (Garrity, 1960; Goffman, 1961, Sykes, 1958, Sykes & Messinger, 1960) argue that prison specific variables greatly influence violence within prison. The assumption is that the depersonalizing and stigmatizing effects of legal processing and induction into prison, coupled with the alienating effects of the coercive power exercised by prison officials in their attempts to maintain social control within the prison, minimize the relevance of other types of variables. Therefore, victimization in the prison can be explained through the adverse conditions that are experienced through extreme deprivation within the prison. Victimization can therefore be seen as a product of the stressful and oppressive conditions and administrative practices within the prison system itself (Goffman, 1961; Sykes & Messinger, 1960). Prisons, to varying degrees, are violent, debilitating, and harsh settings, where inmates experience fear of victimization, a loss of autonomy, and find that they no longer have access to creature comforts (Sykes, 1958). In essence, victimization occurs due to the influence of prison culture and the institutional environment on individual prisoners, where violence is used as an expressive form of tension reduction.

3) Study Hypothesis

From the research, we can conclude that both characteristics imported into prison and institutional characteristics play some role in inmate victimization. However, the literature reveals that many ambiguities and problems still need to be addressed if we are to develop a comprehensive explanation of victimization in Canadian federal penitentiaries. The presence of several unresolved issues suggests the need for a full study of the prison's daily environment, examining both the effects of importation and deprivation indicators as mutually contributing factors to incidents of inmate victimization. Therefore, several major research questions were addressed in this study, including:

- Which prisoners are more susceptible to being victimized?
- Do contemporary explanations of inmate victimization adequately explain the phenomenon in Canadian correctional facilities?

Based on the findings from the literature review, the following hypotheses were tested:

Importation Theory

- **Age:** The younger the inmate, the greater the probability he will be victimized while incarcerated.
- **Race:** Inmates of racial minority groups will have a higher incidence of victimization.
- **Marital Status:** An inmate's marital status will affect the rates of victimization. Inmates who are single will have a higher probability of being victimized.
- **Education:** The less educated an inmate, the greater the chances of victimization.
- **Prior incarceration:** The greater the number of times the inmate has been in prison, the smaller the probability that they will be victimized.
- **Substance abuse problem:** Inmates with a substance abuse problem will also show an increased likelihood of victimization compared to inmates who do not have such a problem.

Deprivation Theory

- **Security level:** The security level of an institution will influence the levels of victimization in prison. As the security level increases, greater levels of inmate victimization will be observed.
- **Sentence Length:** Victimization will depend on the length of an inmate's sentence. Longer terms of incarceration will increase the likelihood of victimization.
- **Phase of the sentence:** Victimization will depend on the phase of their sentence. As a prisoner's incarceration progresses towards his statutory release date, the likelihood of victimization will decrease.
- **Living Conditions:** Victimization will depend on the perceived adequacy of the prison's living conditions. As an inmate rates the living conditions more positively, the probability of victimization will decrease.

- **Program involvement:** The participation in institutional programs should decrease rates of victimization. An inmate's involvement in prison programs will decrease the probability of victimization.
- **Work assignment:** Participation in a work assignment will decrease the probability of victimization. The more time the offender works, the lower the probability of victimization.
- **Recreational activities:** Participation in unsupervised recreational activities will increase an inmate's likelihood of being victimized. The more time devoted to unsupervised recreational activities, the higher the probability of victimization.
- **Staff relations:** The quality of staff relations with prisoners will impact the rates of victimizations in the prison. The poorer the relationships the correctional staff have with inmates, the greater the likelihood of victimization.
- **Inmate Stress:** The more an inmate reports that he/she is feeling stressed during their term of incarceration, the greater the probability of victimization.

4) Methodology

The National Inmate Survey (CSC, 1995) was used to examine the dynamics of inmate victimization within Canadian federal penitentiaries. More specifically, the dataset was utilized to:

- Determine the prevalence and frequency of inmate victimization in Canadian federal penitentiaries,
- Differentiate those most likely to be victims of other inmates, and
- Test a theoretical explanation purporting to explain the incidence and occurrence of inmate victimization in prisons.

The dependent variable was derived from a series of questions in the survey concerning victimization. For the deprivation and importation perspectives, the variables used in the current study will also be derived from the 1995 National Inmate Survey. The

following section describes in more detail how each individual variable were operationalized.

i. Operationalization of inmate victimization

Incidents of assaults (Total assaults and assaults committed with a weapon) were tabulated to determine the prevalence of violence to which offenders are subjected while incarcerated. The dependent variable was derived from several questions concerning inmate victimization. The questions asked whether other inmates ever victimized the respondent and if they have ever been victimized with a weapon. The respondent either answered either yes or no to the question. The specific questions asked of the respondents used to operationalize inmate victimization were:

- “Have you ever been assaulted by an inmate at this institution?
- Have you ever been assaulted with a weapon at this institution by another inmate?” (CSC, 1995; Appendix A, Section III)

Unfortunately, the survey did not locate in time when the inmate had been victimized. Therefore, it is difficult to determine whether the inmate is recalling an incidence of assault that occurred relatively recently (i.e. in the last 12 months) or is simply recalling an incidence that happened years prior to the study. As a result, our methodology is compromised because it is impossible to determine when the incidence of victimization occurred. This weakness should be taken into consideration when examining the major findings of the study.

ii. Operationalization of the Importation/Deprivation Theory

The importation/deprivation theory will be operationalized using a multitude of indicators from the questionnaire. A list of how these indicators were coded for the purposes of the current study is located in the multivariate analysis section.

5) Research Design

i. Descriptive analysis of inmate victimization

Given the paucity of research in this area, part of my project will examine the occurrence of victimization in our Canadian penitentiary facilities. Using information derived from the 1995 National Inmate Survey, the paper examined the prevalence of inmate victimization in our federal penitentiaries. Instances of physical assaults, sexual assaults, staff assaults, and gang activity will be explored to give the readers an idea of the prevalence of victimization in our prisons.

ii. Bivariate Analysis

Following an overview of the incidence of inmate victimization in federal penitentiaries bivariate analyses will be conducted, examining the relationship between indicators of the institutional environment and individual characteristics with 1) total assaults as well as 2) assaults committed with a weapon. Depending on the level of measurement of the independent and dependent variables, the appropriate statistical test was conducted (i.e. t-test, chi-square test of independence, etc.). This interpretation of the data permitted the author to determine whether certain factors are significantly associated with incidents of inmate victimization.

iii. Multivariate Analysis

A theoretical model of the importation/deprivation theory was constructed to establish which variables are the strongest predictors of inmate victimization. The theoretical model was constructed into two distinct parts, reflecting the interaction between socio-demographic characteristics and the environmental effects created within the institutional setting.

Briefly, the importation/deprivation model argues that inmate victimization can be understood using both institutional and socio-demographic variables. This provided a conceptual framework through which victimization is perceived and experienced by prisoners incarcerated in prison. More specifically, the importation of certain individual and social characteristics is likely to affect the probability of victimization. Incidents of inmate victimization committed against inmates by other inmates could be explained by several risk factors (e.g., age, race, prior incarceration, education, marital status, and

substance abuse problems). Therefore, in order to operationalize the importation theory, the following six variables were used in the current analysis.

Age was coded as the inmate's present age at the time that the survey was administered. The other variables used in this study to operationalize the importation model were race, education, marital status, substance abuse, and prior incarceration. The race variable was derived from a question requesting the inmate's ethnic heritage. The responses differentiated between several different racial groups (1= Caucasian, 2 = Black, 3= Asian, 4 = Aboriginal). Marital status reflects whether the inmate is currently married or single. The education variable represents an inmate's self-reported educational attainment (1= Grade 12 or less, 2 = High school diploma, 3 = Post-secondary). Substance abuse problems is a dichotomous variable (1= yes; 0 = no) measuring whether an inmate has an addiction to drugs or other addictive substances. The final variable, prior incarceration is a scale created with the number of times an inmate indicated that they were incarcerated in federal and/or provincial institutions prior to their current incarceration.

Several environmental factors have also been acknowledged to influence inmate victimization. The deprivation model argues that inmate victimization can be explained through the extreme deprivation within the prison, as well as the stressful and oppressive conditions the prison creates. Therefore, factors inherent to the prison (e.g., prison overcrowding, security level, living conditions, type of sentence, etc.) are believed to influence the prevalence of inmate victimization in prisons. Therefore, victimization is believed to serve as an expressive form of tension reduction by reducing the pains of imprisonment. Based on several questions posed to prisoners in the 1995 National Inmate Survey, the deprivation model was operationalized in the following manner.

General indicators of absolute deprivation were used to operationalize the deprivational model in this study. Within the study, security level is measured in terms of whether the inmate was incarcerated in a minimum, medium, or maximum prison at the time of the administration of the survey (coded 1-3 respectively). The length of sentence variable measures (in months) the inmate's term of incarceration. The phase of sentence (also measured in months) assesses the amount of time an inmate has been

incarcerated. In addition to these indicators, several other indicators were constructed to measure instances of relative deprivation in the prison. The program involvement and work assignment variables were measured dichotomously (1 = yes, 0 = no), reflecting an inmate's participation in the programs and work assignments offered in the prison.

a) Scale Construction

In order to measure the impact of the deprivation theory, several scales were constructed to assess the impact that environmental stressors have on incidents of inmate victimization. The scales were constructed based on the arguments presented by Sykes (1958) and subsequent research examining the impact that indicators of deprivation have on inmate life (Cao et al., 1997; Gaes & McGuire, 1995; McCorkle et al., 1995, Toch, 1992; & Wooldredge, 1998). More specifically, Sykes identified five consequences of imprisonment: 1) the deprivations of liberty, 2) the deprivation of goods and services, 3) the deprivation of heterosexual relationships, 4) the deprivation of autonomy or ability to make choices concerning one's life, and, 5) the deprivation of security (Sykes, 1958: p. 65-78). It is these deprivations that make incarceration painful for prisoners and according to Sykes "provide the energy for the society of captives as a system of action" (Sykes, 1958: p. 79). It is the manner in which prisoners attempt to alleviate these pains of imprisonment that ultimately determine the social structures and systems of patterned behaviours that occur in prison. Therefore, victimizing other inmates can be seen as a form of tension reduction; Exploitative, predatory and/or rebellious behaviors towards other inmates provide a means of reducing the pains of imprisonment. Moreover, these pains of imprisonment also increase the susceptibility of prisoners to be victimized as well.

The current research attempted to capture the nature of these forms of deprivations. Based on Sykes' arguments and previous research, several multiple-item additive scales were constructed to measure important deprivation constructs purporting to affect inmate victimization in prison. All the items utilized were equally weighted and simply added together to construct the following scales.

Living Conditions Scale (LCS) is a scale (1= adequate to 6 = inadequate) created by the author that measures the adequacy of the prison living conditions, as seen by the

inmates. The scale represents an effort to evaluate how the prison environment affects victimization. Do the sanitary conditions and prison crowding influence the probability of victimization? Items from the scale were chosen because of the research showing an association between the prison sanitary conditions and prison crowding with victimization (Cooke, 1989; Gaes & McGuire, 1985; Megargee, 1976; Montgomery & Crews, 1998; Swait & Weinrath, 2000; Walters, 1998). The scale was created from six general statements found in the 1995 National Inmate Survey pertaining to the inmates' perception of the adequacy of prison living conditions where they were housed:

- Insects are a problem at this institution
- Rats and mice are a problem in this institution
- Dirt/litter is a problem in this institution
- It is too crowded in my living area
- It is too noisy in my living area during evening hours
- It is too noisy in my living area during the sleeping hours

A reliability analysis (Cronbach's alpha) was conducted to determine the internal consistency of the items used to construct the scale. This procedure assesses the extent to which the items included in a scale are related to each other. Alpha is measured on a scale of 0 to 1. The closer the alpha is to one, the greater the internal consistency of the items in the scale being assessed. For all 6 items included in the Living Conditions Scale, the reliability analysis calculated a Cronbach's alpha of .7662, suggesting that the scale has an acceptable level of internal consistency.

The Staff Relations Scale (1= poor to 6= excellent) is designed to measure the nature of inmate-staff relations in the prison. Social order within the prison is very much dependent on the role the prison staff play in the maintenance of this order. Order in prison is to a large extent achieved through the subtle interplay of relationships between prison officers and prisoners, as they work their way through the day (Bottoms, 1999; Sykes, 1958). Prison staff's approaches and skills can in a real sense act as a mediating force between the maintenance of order and the eventual outcome of good or bad prisoner behaviour. Hence, the perceived unfairness of the staff is a problem that affects not just the relationship between prisoners and staff, but also all other aspects of prison life,

including the levels of violence and disorder in the prison. Poor relations between staff and prisoners could contribute to inmates' unwillingness to approach staff about potential problematic situations because of perceptions of unfairness or staff indifference. As such, this may create increased opportunities for violence.

The Staff Relations Scale was created using items found in the 1995 National Inmate Survey exploring inmate-staff relations occurring in the daily life of the prison. The inmates were asked to rate the relationship with prison staff on specific aspects of the regime. Several statements exploring an inmate's interaction with staff were used to construct the scale, namely:

- I go to staff members to talk about my problems.
- Staff ignore inmate suggestions and complaints
- Staff members are not interested or concerned about the needs of inmates
- Staff members do their best to ensure that inmates are protected from harm by other inmates
- I get along well with staff at this institution

A reliability analysis was conducted on this variable to determine the internal consistency of the items used to construct the staff relations scale. The analysis revealed that the inmate-staff relations scale had a Cronbach's alpha of .7332, suggesting that the scale has an acceptable level of internal consistency. All the items included in the scale appear to be measuring the same construct.

A Stress Scale was created to measure the influence of several stressors on the incidence of victimization within Canadian federal penitentiaries. Daily life within prisons is stressful for prisoners. The loss of autonomy, loss of goods and services, lack of decision-making skills, and the pervasive anxiety towards staff and inmates and the constant threat of personal attacks make incarceration painful for prisoners (Sykes, 1958). Although some prisoners find ways to cope with this, other prisoners do not. The continual preoccupation with the pains of imprisonment can prove debilitating for some prisoners, diminishing the physical and mental toughness necessary to avoid personal attacks. Therefore, the author was interested in determining if an inmate's stress level

influenced the probability of victimization. The Stress Scale was created using items exploring stress factors that may exacerbate daily prison life. The inmates were asked to rate the amount of stress they felt regarding these situations (1= minimal to 9= extreme). The following nine items were used to operationalize the stress scale:

- Relationships with inmates
- Relationships with staff
- Getting parole
- Getting transferred
- My offence
- Length of my sentence
- How soon I will be released
- Double bunking
- Physical safety

A reliability analysis conducted on the scale revealed a strong Cronbach's Alpha of .8335, indicating the scale is within acceptable levels of internal consistency. All nine items included in the stress scale appear to be measuring the same construct.

Finally, the Recreational Activities Scale was created to measure an inmate's participation in unsupervised activities within the prison. Recent research has argued that opportunities for victimization might be influenced by an inmate's involvement in the activities that (1) either increase or decrease his associations with those who are most likely to commit institutional crime, and (2) influence his exposure to 'high-risk' situations in the correctional institution (Wooldredge, 1998). The author was interested in determining whether the amount of unsupervised activities an inmate engaged in resulted in an increased probability of victimization. As a result, three items traditionally argued to measure unsupervised activities (Wooldredge, 1998), were used to construct the scale: writing, reading, and watching TV (all measured in hours). A reliability analysis conducted on the 3 items comprising the scale revealed a modest Cronbach's Alpha of .6087, and therefore, was within the acceptable limits for social science research (George & Mallery, 1999).

b) Logistic Regression Analyses

The presence or absence of these indicators as well as their interaction with one another are believed to influence the likelihood of inmate victimization in prisons. The degree of interaction between environmental and individual characteristics can be seen as

a strong predictor of behavior. Consequently, the prison environment and an inmate's characteristics can influence one another, thereby determining to a large extent the occurrence of inmate on inmate victimization.

In order to test this contention, theoretical models incorporating many institutional and individual factors were used to construct a representation of the importation/deprivation theory. A multivariate analysis, using logistic regression, was conducted to determine which variables could adequately explain the occurrence of 1) assaults, as well as 2) assaults committed with a weapon.

Two models that were simultaneously tested in this research project the importation and the deprivation model. The importation/deprivation model will be separated into two models, in order to determine how well institutional and individual factors predict the occurrence of different forms of inmate victimization in Canadian penitentiaries:

Importation model

Age, race, prior incarceration (in provincial institutions & federal institutions), education, marital status, and substance abuse

Deprivation model

Length of sentence, living conditions, security level, recreational activities, Inmate-staff relations, and stress

Certain variables (e.g. program involvement, work assignments, phase of sentence and recreational activities) were not included in the logistic regression. These variables had a large number of missing cases in the sample. To minimize the effect of missing cases on the logistic regression analysis, these indicators were eliminated from the theoretical models to be tested.

Logistic regression was utilized to allow the researcher to determine how adequately the importation/deprivation model can explain victimization in Canadian federal penitentiaries. This statistical procedure was chosen because of the level of measurement of the independent and dependent variables. The dependent variable in the study, inmate victimization, was measured dichotomously in terms of whether they had been assaulted or not (yes/no). Logistic regression is specifically designed to interpret

data where the dependent variable is measured dichotomously (Agresti & Finlay, 1997; p. 576). Logistic regression was also utilized because it is a statistical test that presents an easily interpretable overview of the interactions among explanatory variables for a desired outcome (e.g. the influence of institutional and individual stressors on inmate victimization in prisons). Therefore, as a data analysis tool, logistic regression permits a readily understandable interpretation of the major influences on inmate victimization.

Using logistic regression, the interpretation of the effects of the institutional and individual variables are comprehensive and easily interpretable, providing tangible evidence of the context of the problem as either caused by 1) institutional factors, 2) individual factors, or 3) a combination of both. Based on the interpretation of the data, plausible security strategies and practices are suggested that could be used to reduce inmate victimization and provide a safe environment for both inmates and staff.

CHAPTER 4: RESULTS

A. GENERAL DESCRIPTION OF THE INMATE SAMPLE

The sample of inmates from the National Inmate Survey comprised 4283 randomly selected male inmates serving sentences in federal penitentiaries across Canada. Overall, the sample was comprised of relatively older males, with a mean age of 35.16 years. Interestingly, the racial breakdown revealed that the majority of the sample was Caucasian (74.5%). The remainder of the sample was comprised of Blacks (6.5%), Aboriginal (14.9%) and Asian (2.0%) inmates. The inmates also appeared to have a limited education. Over half of the sample (60.4%) had less than a grade 12 education. Only 16% of the inmates had graduated with a high school diploma, while 20.4% indicated that they had some form of post secondary education.

For the most part, the inmates in the sample were repeat offenders. Three quarters of the sample (74.3%) had been imprisoned at least once in either a federal or provincial institution prior to their current sentence. More specifically, inmates had served more terms of incarceration in a provincial facility (mean = 3.2) than in a federal institution (mean = 1.4). Interestingly, at the time of the survey, only a small proportion of the inmates were serving their first prison term in a correctional facility (25.7%). The median sentence length for the inmates was 60 months (5 years), revealing that for the most part these inmates were serious offenders. An examination of their current criminal history supported this finding. Many of the inmates had engaged in more serious criminal acts for their current offence; such as: robbery (31%), assault (19%) theft (20%), homicide (30%), weapons offences (19%) and sexual offences (18%)⁶. Miscellaneous non-violent offences like drug offences (18%), driving offences (2%) or fraud (8%) comprised only a small proportion of the criminal acts committed by these inmates.

B. ANALYSIS OF INMATE VICTIMIZATION

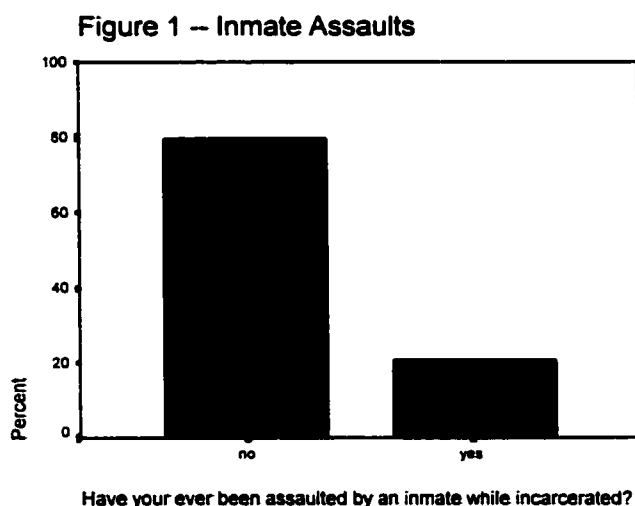
1) Prevalence of inmate victimization in Canadian federal prisons

The National Inmate Survey included an extensive set of questions exploring the prevalence of assaults within Canadian federal penitentiaries. Many of the questions

attempted to ascertain the extent to which violence has permeated Canadian penitentiaries. The following sections highlight the prevalence of certain violent behaviors within the federal prison system. However, the information highlighted below should be interpreted cautiously as it may not present an accurate portrayal of the incidents of assaults that occur in the Canadian prison system.

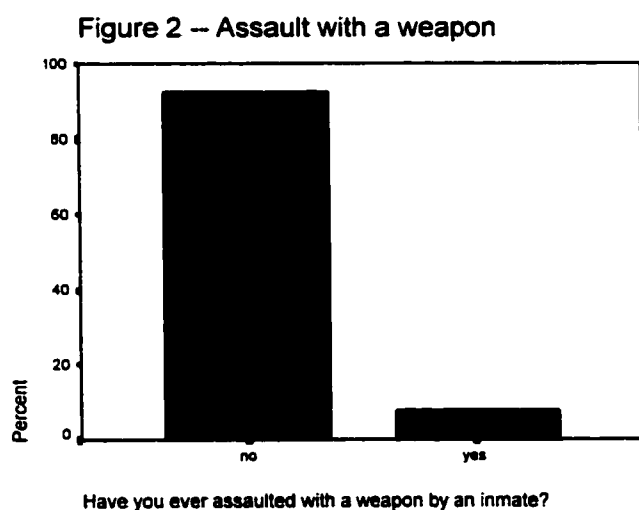
The data may underestimate the prevalence of assaults because inmates may not be forthcoming given the sensitivity of the subject matter or may simply fabricate answers they believe the researcher wants. Prisoners may also fear that Correctional Services of Canada will use the information they provided in the interview against them. Therefore, prisoners may not report their experiences with victimization or opinions on the prison's effectiveness for fear of retribution. These potential problems with the data should be kept in mind when interpreting the results presented in the following sections.

Based on the responses by the inmates in the sample, several inmates have experienced some form of victimization during their incarceration in Canadian federal penitentiaries. Overall, the data reveal that there appears to be a fair degree of victimization that occurs within Canadian prisons compared to other countries. When asked if they have ever been assaulted while incarcerated (see Figure 1), 793 inmates (20.4%) indicated that they have been assaulted while incarcerated.

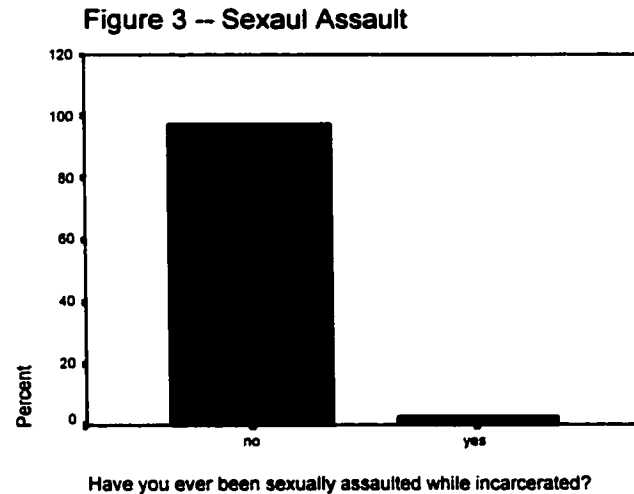


For a similar time period, British criminologists have reported that 12.5% of the inmates they had questioned had been assaulted at some time while in their current prisons (King & McDermott, 1995). In a recent American study, Wooldredge (1998) discovered in his survey sample that approximately 25% of the inmates reported being victimized by physical assaults. However, exact comparisons are difficult to make regarding the prevalence of victimization because of the different time frames used as well as the different methodologies adopted in these studies.

The prevalence of violent assaults using some form of weapon appears to be a relatively rare occurrence within the Canadian prison system. When asked, only 7.4% of the sample (284 inmates) indicated that they had been assaulted with a weapon (see Figure 2).



Contrary to the public and academic opinion, sexual assaults appears to be a rare occurrence within the Canadian penitentiary system. When the inmates were asked whether another inmate has ever sexually assaulted them, Figure 3 reveals that only 2.3% of the sample indicated that they have been sexually assaulted. However, it is difficult to determine the true extent of sexual assaults in the prison due to the shame associated with such victimization. Inmates may be much less willing to admit to being sexually assaulted while incarcerated. Therefore, the findings may severely under represent the extent of sexual assaults in Canadian federal penitentiaries.



Other forms of antisocial behavior also appear to be a fairly common occurrence within the Canadian federal correctional institutions. The survey questionnaire also inquired about other forms of disruptive behaviour that occur in the prison. For example, the inmates were asked to indicate how often they felt heated arguments occurred in their institution. For the most part, heated arguments among the inmates were a fairly common occurrence within the Canadian penitentiary system (Table 2).

Table 2 – Sample Breakdown by Heated Argument⁷

	No. of inmates	Percentage*
Every Day	849	21
A few times a week	1091	28
A few times a month	1169	29
A few times a year	579	15
Never	276	7
Total	3964	100

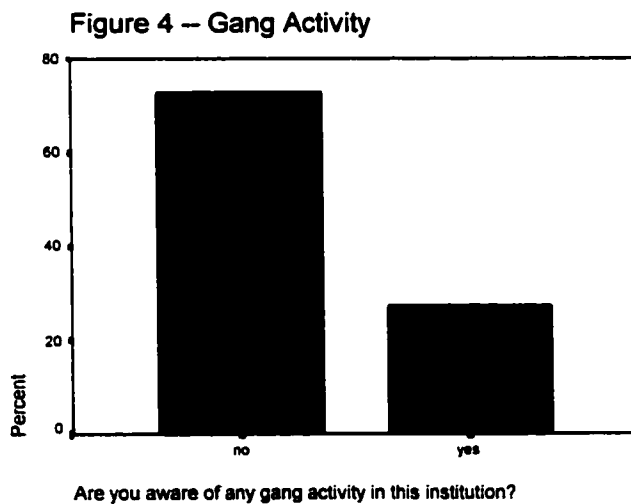
***Valid percentage. Does not include missing cases.**

Missing cases = 319 (7%)

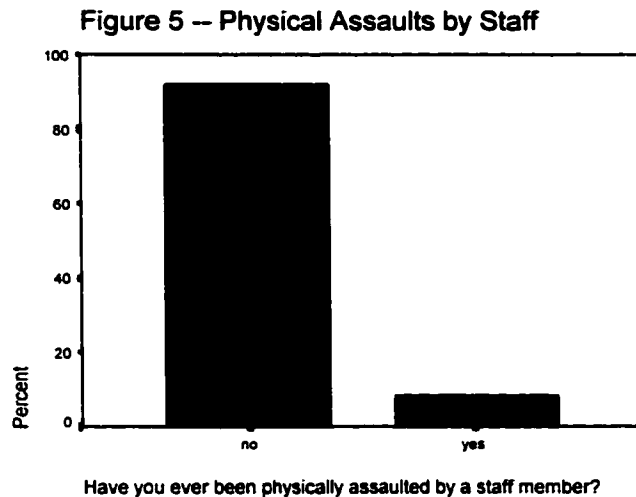
A breakdown of the responses revealed that close to 50% of the sample believed that heated arguments took place on a fairly regular basis. Twenty one percent indicated that arguments occurred every day, while 28% acknowledged that it occurred several

times on a weekly basis. A significant proportion of the inmates (29%) believed that heated arguments occurred only a few times a month. A minority of the inmates (15%) believed that heated arguments occurred relatively infrequently on a yearly basis. Less than ten percent of the sample argued that heated arguments never occurred in their institution.

The inmates were also asked whether they were aware of gang activity that had entrenched itself within their institution. Although the majority of inmates polled reported that they had not heard of any gang problems in their institution (73.6%), a significant minority of the sample (27.4%) indicated that they were aware of gang activity in their institution (Figure 4).



The survey also attempted to ascertain the prevalence of assaults committed by prison staff on the inmates under their charge. Based on the answers provided by the inmates, it appears that staff assaults on inmates occur in Canadian federal prisons. Figure 5 reveals that in the past six months, 317 inmates (7.4%) have asserted that a staff member at the institution where they were housed had assaulted them.



2) Bivariate analysis

Several bivariate analyses were conducted to examine the relationship between indicators of environmental stressors and individual risk factors with 1) total assaults as well as 2) assaults committed with a weapon. Depending on the level of measurement of the independent and dependent variables, t-tests and chi-square tests of independence were used to interpret the differences between inmates who were or were not assaulted. An interpretation of the data revealed that certain factors were significantly associated with incidents of assaults in Canadian federal penitentiaries. The following sections highlight some of these significant differences. A more detailed description of the bivariate analysis can be found in Appendix B.

i. Importation variables: Individual risk factors

a) Total Assaults

An analysis of the individual risk factors in incidents of assault among the sample inmates revealed several statistically significant differences (see Table 3). Analyzing an inmate's racial background revealed that race greatly influences the chances of being assaulted in prison. Caucasian inmates (21.7%) were more likely to be a victim of an assault in prison than Black (15.4%), Aboriginal (17.4%) or Asian inmates (15.1% $p = .006$).

Moreover, an examination of an inmate's family background revealed significant differences between these two groups. Based on the sample results, marital status is associated with the likelihood of being assaulted in prison. Substantially more single inmates have been assaulted in prison (23.2%) compared to inmates in a marital or common-law relationship (16.0%; $p = .000$).

Substance abuse problems were also a prevalent feature among the assaulted inmates sample compared to the other inmates. Interestingly, assaulted inmates were significantly more likely to have a substance abuse problem than inmates who were not assaulted (24.2% vs. 18.7%, $p = .000$).

For prior incarceration, the relationship revealed that inmates having served prior terms of incarceration were less likely to be assaulted while incarcerated. Assaulted inmates in the sample were more likely to have served a greater number of prison terms (4.8) compared to non-assaulted inmates (4.1; $p = .035$).

Table 3 – Bivariate Analysis Summary: Assaults by Importation Model

Variables	Assaulted				Significance*	Missing	
	Yes	SD	No	SD		N	%
Age (mean in years)	34.7	9.2	35.3	10.4	1.469 ^b ; $p = .142$	62	1.4
Marital Status					25.998 ^a ; $p = .000$	663	15.5
Married/common-law	16.0%		84.0%				
Single	23.2%		76.8%				
Race					14.446 ^a ; $p = .006$	635	14.8
Caucasian	21.7%		78.3%				
Black	15.4%		84.6%				
Asian	15.1%		84.9%				
Aboriginal	17.6%		82.4%				
Other	31.3%		68.8%				
Substance Abuse Problem					12.547 ^a ; $p = .000$	1328	30.9
No	18.7%		81.3%				
Yes	24.2%		75.8%				
Education					3.102 ^a ; $p = .212$	898	20.9
Grade 12 or less	20.3%		79.7%				
High school diploma	19.9%		80.1%				
Post-secondary education	23.2%		76.3%				
Prior incarceration (mean)	4.8	5.9	4.1	5.4	-2.117 ^b ; $p = .035$	1909	44.6

* a = Pearson chi-square; b = t-test

The remainder of the indicators (age and education) was not significantly associated with incidents of assaults. Although assaulted inmates were on average somewhat younger (mean = 34.7 years) than non-assaulted inmates (35.3 years), this difference failed to attain statistical significance. This was also the case for education. The relationship revealed that inmates did not differ significantly on their educational achievement. Inmates with post-secondary education or a high school diploma were only slightly more likely to be assaulted than inmates with lower educational achievement (Grade 12 or less). No statistical significant difference was observed between these groups' educational achievement and assaults.

b) Assaults with a weapon

An analysis of the bivariate analysis revealed that a number of individual characteristics were significantly associated with incidents of assaults with a weapon in the federal correctional system (Table 4). An examination an inmate's marital status revealed that one's marital status was related to assaults with a weapon while incarcerated. Single inmates were more likely to have been assaulted in prison (8.2%) than those in a marital or common-law relationship (5.4%; $p = .002$). Substance abuse problems were also a prevalent feature among the assaulted inmates compared to the other inmates in the sample. Overall, inmates with a substance abuse problem were more likely to be assaulted than inmates who did not have such a problem (9.7% vs. 5.5%, $p = .000$).

Prior incarceration proved to be a significant predictor of assaults with a weapon in the prison, contrary to the previous findings. The relationship supported the hypothesis, revealing that inmates having served a prior term of incarceration were more likely to be assaulted with a weapon. Assaulted inmates were much more likely to have served a greater number of prison terms compared to non-assaulted inmates.

Once again, age and education were not significantly associated with assaults committed with a weapon. Although age proved to be in the predicted direction, revealing that assaulted inmates were marginally younger (mean = 34.9 years) than non-assaulted inmates (mean = 35.3 years), the association failed to attain statistical significance. A similar pattern also emerged in the bivariate analysis for the education indicator. Although the relationship revealed that inmates with lower educational

achievement as well as post-secondary educational were more likely to be assaulted while incarcerated, no statistically significant differences were observed between assaulted and non-assaulted inmates.

Table 4 – Bivariate Analysis Summary: Assaults with a weapon by Importation Model

Variables	Assaulted with a weapon				Significance*	Missing	
	Yes	SD	No	SD		N	%
Age (mean in years)	34.9	8.9	35.3	10.4	.749 ^b ; p = .454	62	1.4
Marital Status					9.625 ^a ; p = .002	662	15.4
Married/common-law	5.4%		94.5%				
Single	8.2%		91.8%				
Race					4.624 ^a ; p = .328	630	14.7
Caucasian	7.8%		92.2%				
Black	6.6%		93.4%				
Asian	3.5%		96.5%				
Aboriginal	6.0%		94.0%				
Other	9.4%		90.6%				
Substance Abuse Problem					18.371 ^a ; p = .000	1307	30.5
No	5.5%		94.5%				
Yes	9.7%		90.3%				
Education					1.648 ^a ; p = .439	895	20.9
Grade 12 or less	7.7%		92.3%				
High school diploma	6.1%		93.9%				
Post-secondary education	7.8%		92.2%				
Prior incarceration (mean)	5.1	5.2	4.1	5.4	-2.311 ^b ; p = .021	1910	44.6

* a = Pearson chi-square; b = t-test

Surprisingly, race proved unable to account for any of the differences between the two sample groups. Although race revealed that a higher proportion of Caucasians were somewhat more likely to be assaulted than the other racial groups, the differences were not statistically significant.

ii. Deprivation variables: Environmental stressors

a) Total Assaults

The bivariate analysis of the association between environmental stressors and incidents of assaults provided several interesting findings (Table 5). A significant difference was noted for the indicator measuring the security level of the penitentiary.

The analysis revealed that as the security level increased, the incidents of assaults also increased. Therefore, there is a greater likelihood that an inmate will be assaulted in maximum-security facilities than either minimum- or medium-security correctional facilities. More specifically, inmates were much more likely to be assaulted in a maximum- (26.6%) or medium-security facility (20.5%) compared to a minimum-security facility (9.9%). Maximum-security prisons still remain the most dangerous environment to inmates, exposing them to greater chances of being assaulted. Overall, inmates were more likely to have been assaulted in a maximum-security prison compared to inmates who were not assaulted. Minimum-security facilities showed a decreased likelihood that an inmate would be assaulted compared to the remainder of the sample.

Table 5 – Bivariate Analysis Summary: Assaults by Deprivation Model

Variables	Assaulted				Significance*	Missing	
	Yes	SD	No	SD		N	%
Security Level					59.103^a; p = .000	447	10.4
Minimum	9.9%		90.1%				
Medium	20.5%		79.5%				
Maximum	26.6%		73.4%				
Sentence Length¹ (mean)	91.9	98.0	80.8	74.0	-2.903^b; p = .004	1556	36.3
Phase of sentence¹ (mean)	56.9	84.0	43.4	55.4	-3.150^b; p = .002	2345	54.7
Living Conditions (mean)	3.6	1.3	4.1	1.4	7.376^b; p = .000	841	19.6
Staff Relations (mean)	3.2	1.2	3.5	1.3	5.947^b; p = .000	902	21.1
Inmate Stress (mean)	4.7	1.3	4.0	1.3	-11.663^b; p = .000	1868	43.6
Recreational Activities							
Mean Time Spent (in hrs)	1.8	1.6	1.8	1.8	.117^b; p = .907	2632	61.5
Program Involvement					20.806^a; p = .000	2674	62.4
No	23.8%		76.2%				
Yes	12.3%		87.7%				
Work Assignment					1.21^a; p = .273	3161	73.7
No	9.2%		90.8%				
Yes	6.9%		93.1%				

* a = Pearson chi-square; b = Independent samples t-test

1. Mean is measured in months

The analysis also revealed that inmates serving longer sentences had a decreased likelihood of being assaulted. Inmates assaulted were much more likely to be serving a longer sentence (Mean = 91.9 mths; $p = .015$) compared to inmates who had not been assaulted (80.6 mths). The t -test value supports previous literature which has found that that the longer an inmate sentence, the more likely it is that they will be assaulted. Assaulted inmates also appeared to have served a greater proportion of their sentence than non-victimized inmates. Assaulted inmates appeared to have been in prison for longer periods (mean = 56.9 mths $p = .002$) than non-victimized inmates (mean = 44.68 mths). This finding proved to contradict previous literature, which has suggested that victimization is more likely to occur earlier in an inmate's prison sentence. However, it is difficult to substantiate this finding because the indicator used only shows that the inmate had been assaulted on or prior to the time served indicated to the survey interviewer, not the specific time when an assault occurred.

Several statistically significant differences also emerged for other environmental stressors present in the prison. The bivariate analysis revealed that living conditions, staff relations and inmate stress were also strongly associated with assaults in the Canadian penitentiary system. Inmate stress was found to be positively associated with the likelihood of assaults within the prison. Assaulted inmates were much more likely to report increased stress levels (mean = 4.7) compared to unassaulted inmates (mean = 3.96; $p = .000$). Based on the bivariate analysis, the greater stress an inmate reports appears to increase the likelihood of being the victim of an assault while incarcerated.

A similar pattern was replicated for staff/inmate relations in the prison. Staff relations with inmates were found to be positively associated with assaults occurring in prison. Inmates who rated the staff relations within their institution poorly (mean = 3.2) were much more likely to have indicated that they were assaulted compared to unassaulted inmates, who rated the staff relations somewhat more positively (mean = 3.49; $p = .000$). Based on the analysis, there appears to be an association between inmate perceptions of staff relations with inmates and the likelihood that an inmate will be assaulted while incarcerated. The poorer staff/inmate relations are perceived to be by an inmate, the greater the likelihood that this inmate will be assaulted while incarcerated.

It also appears that inmates involved in programs while incarcerated insulated an increased risk of being victimized. More inmates involved in programs were not assaulted in prison (12.3%) compared to inmates who had not participated in prison programs (23.8%; $p = .000$).

The remainder of the variables failed to attain statistical significance. More specifically, recreational activities and work assignment were not found to be significantly associated with incidents of assault within the correctional system. More specifically, no discernible difference was evident in the mean hours spent in unsupervised recreational activities between the two groups in the sample. In addition, although work assignment had provided weak evidence that participation in work while incarcerated decreased an inmate's chances of being assaulted, the results failed to attain statistical significance.

b) Assaults with a weapon

An analysis of the findings revealed significant differences between inmates who were/were not victimized within the prison (Table 6). For example, significant differences emerged within security levels. The analysis revealed that inmates were much more likely to experience weapon assaults in more secure facilities. Inmates were much more likely to be assaulted with a weapon in either a maximum- (12.0%) or medium-security facility (6.6%) compared to a minimum-security facility (1.9%). Maximum-security prisons still remain the most dangerous environment, exposing inmates to greater chances of being assaulted with a weapon.

The analysis also revealed that inmates serving longer sentences had an increased likelihood of being assaulted with a weapon. Overall, inmates assaulted with a weapon were much more likely to be serving a longer sentence (Mean = 115.7 months) compared to inmates who had not been assaulted (81.1 months). The t-value supports the hypothesis that the longer an inmate sentence, the more likely they will be assaulted with a weapon. Based on the evidence, greater exposure to the risk seems to increase the probability of victimization among incarcerated inmates. Assaulted inmates also appeared to be victimized later in their sentence than non-victimized inmates. Inmates assaulted with a weapon had served more time in prison (mean = 69.1 months) than non-victimized inmates (mean = 44.7 months). This finding appears to contradict previous

literature, which suggests that assaults generally occur relatively early in an inmate's sentence. However, it is difficult to substantiate this finding because the indicator does not indicate when the assaults occurred.

Several statistically significant differences emerged for other environmental stressors present in the prison. The bivariate analysis revealed that living conditions, staff relations and inmate stress were strongly associated with assaults in the Canadian penitentiary system. Inmate stress was found to be significantly associated with the likelihood of assaults within the prison. Assaulted inmates reported higher stress levels (mean = 4.8) compared to those not assaulted with a weapon (mean = 4.1; $p = .000$).

Table 6 – Bivariate Analysis Summary: Assaults with a weapon by Deprivation Model

Variables	Assaulted with a weapon				Significance*	Missing	
	Yes	SD	No	SD		N	%
Security Level					56.009^a; $p = .000$	447	10.4
Minimum	1.9%		98.1%				
Medium	6.6%		93.4%				
Maximum	12.0%		88.0%				
Sentence Length¹ (mean)	115.7	120.2	81.1	78.7	-3.764^b; $p = .000$	1557	36.3
Phase of sentence¹ (mean)	69.1	93.5	44.7	63.1	-3.168^b; $p = .002$	2344	54.7
Living Conditions (mean)	3.5	1.4	4.0	1.4	5.363^b; $p = .000$	838	19.6
Staff Relations (mean)	2.9	1.1	3.5	1.2	7.711^b; $p = .000$	888	20.7
Inmate Stress (mean)	4.8	1.4	4.1	1.4	-6.645^b; $p = .000$	1842	43.0
Recreational Activities							
Mean Time Spent (in hrs)	2.1	2.1	1.8	1.7	-1.772^b; $p = .078$	2618	61.1
Program Involvement					4.429^a; $p = .035$	2657	62.0
No	22.1%		77.9%				
Yes	13.8%		86.2%				
Work Assignment					1.633^a; $p = .201$	3158	73.7
No	8.8%		91.2%				
Yes	4.8%		95.2%				

* a = Pearson chi-square; b = t-test

1. Mean is measured in months

Inmates' perception of staff-inmate relations with inmates was also found to be associated with assaults occurring in prison. Inmates who rated the staff relations within their institution poorly (mean = 2.9) were more likely to have indicated that they were assaulted compared to those who rated staff relations somewhat more positively (mean =

3.5; $p = .000$). The poorer staff/inmate relations are perceived to be, the greater the likelihood that an inmate will be assaulted with a weapon while incarcerated.

The sample also revealed that inmates who were involved in programs while incarcerated were more likely to have been assaulted with a weapon than inmates who had been assaulted. Similar to what was hypothesized, a significant proportion of inmates involved in programs (12.3%) were not victimized, while 23.8% of the inmates who indicated they had never attended programs were assaulted. However, this analysis might be inaccurate as a high portion of the files were missing data on this indicator. As such, the remainder of the cases might be unduly influencing the results.

Interestingly, a relationship approaching significance was established between the amount of time spent in unsupervised recreational activities and the incidence of weapons assaults in prison. It was found that assaulted inmates were much more likely to have spent more time in unsupervised activities (mean = 2.1 hours) than those not reporting assaults (mean = 1.8 hours; $p = .08$). These results appear to support the notion that engaging in unsupervised recreational activities may increase an inmate's chances of being assaulted with a weapon.

The only variable that failed to attain statistical significance was work assignment. Work assignment was unrelated to weapons assaults.

3) Multivariate analysis: Logistic regression analyses

Logistic regression analysis was used to determine the probability of being victimized by fellow inmates as explained by indicators of the importation/deprivation perspectives. Logistic regression was used for the statistical analysis because it is designed for the types of dependent and independent variables used in the study. The dependent variable in the present study, inmate victimization, was measured dichotomously in terms of success and failure (yes/no). Logistic regression is specifically designed to describe how the proportion of successes depends on designated explanatory variables (of any level of measurement). Models were constructed to determine the ability of the importation model and the deprivation model to predict the probability that an inmate will be assaulted. Overall, the models differed in their ability to

predict victimization among inmates. Tables 7 to 10 present the results. A more detailed description of the logistic regression can be found in Appendix C.

Extreme caution, however, should be used when interpreting the data derived from the logistic regression analyses. A significant degree of attrition occurred when the individual indicators were processed through the logistic regression, thereby creating a substantial number of missing cases for each regression model. Although some attrition is normal within any logistic regression procedure, the significant loss of data in the current study severely puts into question the reliability and validity of the multivariate analysis. Given the large number of missing cases, the conclusions of this study will be derived primarily from the bivariate analysis.

i. Importation model

The importation model attempted to ascertain whether the characteristics imported by the inmates upon incarceration could account for the levels of victimization that were reported. The indicators that were used to measure this concept were: age, race, education, marital status, and a history of substance abuse problems. Two dependent measures were analyzed: total assaults and assaults with a weapon.

Analyzing the classification table from the logistic regression (Appendix C), it appears to be much easier to predict membership in non-assaulted than assaulted groups. The classification table compares the predicted values for the dependent variable (in this case total assaults), based on the regression model, with the actual observed values in the data. Using the importation indicators, the regression model could predict accurately non-victimized inmates (100%) in the sample. As such, this tells us little about the predictive ability of our importation model. All this is inferring is that of those inmates we would predict not to be assaulted, none were actually assaulted when we examined the actual observed values. The goal of the logistic regression analysis is to assess whether our model can accurately predict victimization. Therefore, we examined how effectively we could predict victimization, based on the model, with the actual observed cases of victimization in the survey sample. The classification table revealed that knowledge of several importation variables could not predict the dependent variable (assaulted or not assaulted). In other words, the regression model proved unable to predict with any degree of accuracy victimized inmates in the sample (0%). Overall, the

analysis revealed that these importation model indicators accurately predicted only 80.01% of our sample of inmates. This value was achieved through the comparison of the predicted value we would expect to find using the importation model indicators with the values actually observed in the sample data. In this case, the model including importation indicators can predict inmate memberships in assaulted versus non-assaulted groups 80% of the time.

However, the overall predictive ability of this regression model was compromised by a low base rate of total assaults observed in the sample. As such, the non-assaulted inmates were overrepresented in the classification table, thereby unduly influencing the predictive ability of the model. Thus, the regression model may not be accurately measuring the desired phenomenon. Overall, it was much easier for the model to predict whether an inmate was not assaulted using the indicators in the importation model. Having knowledge of several importation indicators purported to influence the probability of victimization did not help in the prediction of assaults.

**Table 7 – Importation Model
Total Assaults**

Variables	B	S. E.	Exp(B)	Significance
Age	-.0120	.0073	1.01	.0920
Marital Status	.3448	.1409	1.41	.0150
Race	-.0494	.0580	1.05	.3971
Substance Abuse	.4036	.1326	1.50	.0024
Education	.1373	.0791	1.15	.0885
Prior incarceration	.2235	.1518	1.25	.1541
Constant	-6.6995	.4930		
Nagelkerke R²	.017			
Model Chi Square	26.219; p = .0002			

Nevertheless, certain predictors proved moderately beneficial in predicting victimization among inmates; namely, marital status and substance abuse. Table 7 presents the findings for the importation model and total assaults. Marital status had a positive effect on predicting assaults by other inmates. If an inmate was currently single, there is a 1.41 fold increase in the odds over those married that another inmate while incarcerated would assault them. It would appear that characteristics associated with

being married insulates one against victimization in the prison. The presence of substance abuse problems also contributed to assaults. An inmate with a substance abuse problem was 1.5 times more likely to be assaulted than one without such a problem.

Several predictors entered into the equation proved to be moderately weak predictors of weapons assaults; namely, age and education. Although they posted moderately strong log odds, they failed to significantly contribute to the logistic regression equation. Although the effect of age was in the predicted direction, indicating that younger inmates were more likely to be victimized, they were not statistically significant. The age predictor had a quite small B coefficient with a large standard error. The effects of race and education, on the other hand, were not in the predicted direction. The data revealed that the more education inmates had the higher the likelihood of victimization. Race on the other hand, had a small negative effect on victimization.

The variables of race and prior incarceration proved to be poor predictors of inmate victimization in correctional facilities. Specifically, inmates of racial minority groups showed a smaller probability of victimization. Prior incarceration was also in the predicted direction. The more terms of incarceration an inmate had, the higher the likelihood that another inmate while incarcerated would victimize them. For every one-unit increase in the number of times an inmate has been incarcerated, there was a 1.25 fold increase in the probability that an inmate will be assaulted. However, the effects of these variables were not statistically significant due to their small B coefficients and large standard errors.

Overall, using these variables, we could only explain a minimal amount of membership in the assaulted and non-assaulted groups. In all, using these variables, we could explain 1.7% of the variance in inmate victimization. Based on this analysis, there are significant gaps that still remain unaccounted for in explaining the incidents of assaults occurring in Canadian prisons.

Regression analysis was also conducted on the probability that an inmate would be assaulted with a weapon while incarcerated. Overall, the model could better predict those inmates not victimized with a weapon than those who had been assaulted with a weapon. The classification table (Appendix C) revealed that the importation model used could predict accurately non-victimized inmates (100%) in the sample. All this is

inferring is that of those inmates we would predict not to be assaulted, none were actually assaulted when we examined the actual observed values. As such, this tells us little about the predictive ability of our importation model. The goal of the logistic regression analysis is to assess whether our model can accurately predict victimization. Therefore, we examined how effectively we could predict victimization, based on the model, with the actual observed cases of victimization in the survey sample. The classification table revealed that knowledge of several importation variables could not predict victimization within the survey sample. The regression model proved unable to accurately predict victimized inmates in the sample (0%). In this case, the model including importation indicators can predict inmate assaults 93.35% of the time.

However, the overall predictive ability of this regression model was compromised by a low base rate of assaults with a weapon observed in the sample. As such, the non-assaulted inmates are over represented in the classification table, thereby unduly influencing the predictive ability of the model. Therefore, the regression model may not be accurately measuring the desired phenomenon. Overall, it proved much easier for the model to predict whether an inmate was not assaulted using the indicators in the importation model. Having knowledge of several importation indicators purported to influence the probability of victimization did not help in the prediction of weapon assaults amongst inmates.

Table 8 presents the findings for the importation model and assaults with a weapon. Only one variable was found to contribute significantly to the logistic regression. The regression analysis revealed that the presence of substance abuse contributed to the probability that an inmate would be the victim of a weapon assault. An inmate with a substance abuse problem was 1.71 times more likely to be assaulted than inmates who did not have a substance abuse problem.

**Table 8 – Importation Model
Assaults with a weapon**

Variables	B	S. E.	Exp(B)	Significance
Age	-.0150	.0122	1.02	.2678
Marital Status	.2931	.2282	1.34	.1906
Race	-.0169	.0901	1.02	.8807
Substance Abuse	.5349	.2108	1.71	.0032
Education	-.0060	.1313	1.01	.7194
Prior incarceration	.4029	.2626	1.50	.6691
Constant	-2.8501	.5656		
Nagelkerke R²	.027			
Model Chi Square	16.103; p = .0132			

The remainder of the indicators entered into the equation proved to be moderately weak predictors of weapons assaults; namely, marital status and prior incarceration. Although they posted respectable log odds, they failed to significantly contribute to the logistic regression equation. Once again, marital status had a positive effect when predicting weapon assaults by other inmates. If an inmate was currently single, there is a 1.34 increase in the odds that they would become a victim of a weapon assault in prison. It would appear that being married insulates one against assaults with a weapon. Prior incarceration contributed slightly in its ability to predict the chances of being assaulted with a weapon. The more terms of incarceration an inmate had, the greater the likelihood that he would be assaulted with a weapon. For every one-unit increase in the number of times an inmate had been incarcerated, there was a 1.50 increase in the likelihood that an inmate would be attacked with a weapon.

The variables of age, race, and education proved to be poor predictors of inmate victimization in correctional facilities. Although the effect of age was in the predicted direction, indicating that younger inmates were more likely to be assaulted with a weapon, the B coefficient was not statistically significant. This was attributed to the rather small and negative B coefficient and the large standard error. The education variable was also in the predicted direction; however, it also had a small B coefficient and a large standard error. Race, on the other hand, was not in the predicted direction. This indicator had a small negative effect on weapon assaults. Specifically, inmates of racial

minority groups showed a reduced probability of being assaulted with a weapon. These variables were not statistically significant due to their small B coefficients and their large standard errors.

Overall, using these variables, we could not predict with any degree of accuracy weapons assaults committed in Canadian prisons. Using these variables, we could only explain 2.3% of the variance in inmate victimization. Based on the analysis of the results, much still remains unaccounted for in attempting to explain the incidents of assaults committed with a weapon occurring in Canadian penitentiaries.

ii. Deprivational model

An examination of the deprivation model of inmate victimization revealed that relying on indicators of relative and absolute deprivation among incarcerated inmates proved more capable in accounting for incidents of victimization in Canadian prison. The indicators that were used in the following regression analyses were: security level, sentence length, living conditions, staff/inmate relations, and stress. Two dependent measures were analyzed: total assaults and assaults with a weapon.

For total assaults, our deprivation model could only accurately predict inmate assaults 81.55% of the time (Appendix C). The model proved better able to predict non-victimized inmates (99.73%) than victimized inmates. This is inferring that, of those inmates we would predict not to be assaulted, none were actually assaulted when we examined the actual observed values. As such, this tells us little about the predictive ability of our importation model. The goal of the logistic regression analysis is to assess whether our model can accurately predict victimization. Therefore, we examined how effective we could predict victimization, based on the model, with the actual observed cases of victimization in the survey sample. The classification table revealed knowledge of several importation variables could not predict which variable was observed in the data. The model had great difficulty in predicting the victimized inmates (3.59%) in the sample.

Having knowledge of certain deprivation variables helped only accurately predict inmates who would be assaulted 3% of the time. Based on this classification table, having knowledge of several deprivation indicators purported to influence the probability of victimization did not help in the prediction of assaults. It proved much easier for the

model to predict whether an inmate was not assaulted using the indicators in the deprivation model than if they had been assaulted. However, the overall predictive ability of this regression model was compromised by a low base rate of total assaults observed in the sample. As such, the non-assaulted inmates are over represented in the classification table, thereby unduly influencing the predictive ability of the model. Therefore, the regression model may not be accurately measuring the desired phenomenon. Based on this classification table, having knowledge of several deprivation indicators purported to influence the probability of victimization did not help in the prediction of assaults.

The only statistically significant predictors in the deprivation model were security level, staff relations and stress (see Table 9). More specifically, the security level of the institution where the inmate was housed significantly impacted the probability that an inmate would be assaulted. As the level of security increases (minimum to medium, medium to maximum), there is an increase of 1.49 in the odds of victimization. Therefore, inmates housed in maximum-security prisons are the most susceptible to being assaulted while incarcerated. Also, inmate stress increased the chances that an inmate will be assaulted, elevating the odds of being assaulted by a factor of 1.44 for each unit change in the stress reported by inmates. The more stress an inmate reported, the greater the probability that they were assaulted while incarcerated in a federal penitentiary.

**Table 9 – Deprivation Model
Total Assaults**

Variables	B	S. E.	Exp(B)	Significance
Security Level	.4015	.1206	1.49	.0009
Sentence Length	.0004	.0010	1.00	.7287
Living Conditions	-.0742	.0546	1.01	.1745
Staff Relations	-.1449	.0613	1.16	.0182
Inmate Stress	.3672	.0546	1.44	.0000
Constant	-3.2059	.4874		
Nagelkerke R²	.063			
Model Chi Square	100.650; p = .0000			

Perceptions of inmate/staff relations proved to be a moderately good predictor of the probability of being assaulted with a weapon. The poorer an inmate perceived inmate/staff relations to be, the higher the probability that inmates would be assaulted with a weapon while incarcerated. For every one-unit decrease in inmate/staff relations increased by a factor of 1.16 the probability that an inmate would be assaulted with a weapon.

Apart from these variables, the other indicators could not predict with any degree of accuracy the probability that an inmate will be victimized while incarcerated. Although the effects of sentence length, and living conditions were in the predicted direction, these variables failed to contribute significantly to the prediction of victimization. This can be attributed to their relatively small positive B coefficients and their large standard errors. Overall, using a deprivation approach, it was possible to explain only 6.3% of the variance in inmate victimization. Therefore, there are significant gaps that still remain unaccounted for when attempting to explain the occurrence of assaults in prisons.

Finally, this paper analyzed the ability of the deprivation model to explain the occurrence of assaults with a weapon among the inmates. Once again, an analysis of the classification table (Appendix C) revealed that the model was better able to predict non-victimized inmates (100%). All this is inferring is that, of those inmates we would predict not to be assaulted; none were actually assaulted when we examined the actual observed values. As such, this tells us little about the predictive ability of our importation model. The goal of the logistic regression analysis is to assess whether our model can accurately predict victimization. Therefore, we examined how effective we could predict victimization, based on the model, with the actual observed cases of victimization in the survey sample. The classification table revealed knowledge of several importation variables could not predict which variable was observed in the data. The regression model proved unable to accurately predict victimized inmates in the sample (0%). Overall, our deprivation model could only accurately predict inmate assaults 94.25% of the time.

However, the overall predictive ability of this regression model was compromised by a low base rate of weapon assaults observed in the sample. As such, the non-assaulted

inmates are over represented in the classification table, thereby unduly influencing the predictive ability of the model. Therefore, the regression model may not be accurately measuring the desired phenomenon. Overall, it proved much easier for the model to predict whether an inmate was not assaulted using these indicators than if they had been assaulted with a weapon. Based on this classification table, having knowledge of several deprivation indicators purported to influence the probability of victimization did not help in the prediction of assaults.

An examination of the logistic regression results (see Table 10) revealed that many variables in the model had a significant impact in explaining the occurrence of weapon assaults among inmates. The strongest variables of the model were security level, sentence length, inmate/staff relations, and inmate stress. The effects of many of these factors were in the predicted direction. More specifically, security level had a significant impact on the likelihood that an inmate would be assaulted with a weapon, increasing the odds of being assaulted by a factor of 1.58. Another moderate predictor of weapons assaults was the sentence length. Longer sentences showed a greater probability that an inmate would be assaulted. For every one-unit increase in the sentence length, the chances of being assaulted with a weapon increased by a factor of 1.00. Inmate stress showed similar patterns in the logistic regression. More specifically, the more stress an inmate was feeling increased the probability that they would be assaulted with a weapon. For every unit increase in the stress an inmate was feeling, the probability that he would be assaulted increased by a factor of 1.39. Inmate/staff relations proved to be a moderately good predictor of the probability of being assaulted with a weapon. The poorer inmate/staff relations were, the higher the probability that inmates would be assaulted with a weapon while incarcerated. Every unit decrease in inmate/staff relations lead to a 1.40 increase in the probability that an inmate would be assaulted with a weapon.

**Table 10 – Deprivation Model
Assaults with a weapon**

Variables	B	S. E.	Exp(B)	Significance
Security Level	.4502	.1993	1.58	.0209
Sentence Length	.0030	.0014	1.00	.0275
Living Conditions	.0227	.1032	1.02	.8002
Staff Relations	-.3365	.1032	1.40	.0011
Inmate Stress	.3315	.0889	1.39	.0002
Constant	-4.6264	.8219		
Nagelkerke R²	.091			
Model Chi Square	51.76; p = .0000			

The living conditions variable proved to be unable to predict weapons assaults in Canadian penitentiaries. Although it was in the predicted direction, showing that as the inmates rated the living conditions more negatively the probability of weapons assaults increased, the findings were not statistically significant. Overall, this model proved to be better able to account for weapon assaults in Canadian correctional facilities. However, the variance explained still only accounts for a small proportion of the total variance. Much still remains unaccounted for in explaining the incidents of assaults committed with a weapon occurring in Canadian penitentiaries. Using the variables mentioned above, the deprivation model was only able to explain 9.1% of the variance for assaults with a weapon. Based on this logistic regression analysis, there are significant gaps that still remain unaccounted for when attempting to explain the occurrence of assaults in prisons.

Chapter 5: DISCUSSION & CONCLUSION

A. SUMMARY OF THE MAJOR FINDINGS

This thesis provided some data on the extent of inmate victimization among a sample of male prisoners in federal correctional institutions. Data used from the 1995 National Inmate Survey revealed that rates of victimization, particularly assaults committed by other inmates, are a common occurrence within Canadian federal prisons. An examination of the data determined that a sizeable proportion of incarcerated inmates have experienced some form of victimization. Incidents of assaults committed by another inmate were the most common form of inmate victimization occurring within federal prisons. Incidents of assaults with a weapon, sexual assaults and assaults committed by correctional staff appear to occur relatively infrequently. However, the survey data may still be underestimating the true incidence of victimization occurring in federal prisons.

The data may underestimate the prevalence of assaults because inmates may not have been forthcoming given the sensitivity of the subject matter. Prisoners may also fear that Correctional Services of Canada will use the information they provided in the interview against them. In particular, the true extent of sexual assaults in the prison was difficult to determine due to the shame associated with such victimization. Inmates may be much less willing to admit being sexually assaulted than physically assaulted while incarcerated. Therefore, the findings may severely under represent the extent of sexual assaults in Canadian federal penitentiaries.

Several bivariate analyses were conducted to examine the relationship between selected importation factors and indicators of deprivation with total assaults committed as well as assaults committed with a weapon. My interpretation of the data revealed that certain individual and environmental factors were significantly associated with incidents of assaults in Canadian federal penitentiaries.

Overall, the analyses provided moderate support for the notion that importation and deprivation factors influence the likelihood of victimization among incarcerated male prisoners in Canadian federal penitentiaries. The effects of several imported factors such as marital status, substance abuse problems, and prior incarceration support prior research

findings on inmate victimization. Interestingly, being married prior to incarceration was associated with a lower likelihood of victimization. Single inmates proved to be more susceptible to being assaulted (with or without a weapon) while incarcerated. An inmate's susceptibility to being assaulted while incarcerated also appeared to be influenced by a pre-existing substance abuse problem. Inmates with a substance abuse problem prior to incarceration showed a greater risk of being assaulted while incarcerated. Prior incarceration was found to significantly influence the likelihood that an inmate would be assaulted. The more times an inmate was incarcerated, the less likely they would be victimized. This supported the notion that those inmates who would be most victimized while incarcerated would have served less provincial and federal terms of incarceration.

Our race indicator provided evidence contradictory to the hypothesis. Previous studies have established that inmates of racial minority groups had a greater likelihood of being victimized in prison. Contrary to this research, our study established that Caucasian inmates (and not racial minority inmates) reported a greater risk of being assaulted while incarcerated. The age and education variables in our importation model proved to be unreliable predictors of assaults, contradicting the literature on the effect that age and education have on predicting the probability that inmates will be victims of assaults while incarcerated.

Several deprivation indicators were shown to influence the probability of being assaulted while incarcerated. Many previously established relationships in the literature were supported in the current study. More specifically, indicators such as security level, sentence length, living conditions, staff relations, and inmate stress support prior research findings on inmate victimization. For both forms of assaults studied, the security level of the prison where the inmate was housed was significantly associated with the likelihood of victimization. Inmates serving their term of incarceration in a medium or a maximum-security prison were more likely to be victimized than inmates housed in minimum-security correctional institutions. Other variables that were found to be good predictors of inmate victimization were sentence length, living conditions, staff relations, and inmate stress. All these variables were in the predicted direction. Inmates who were assaulted while incarcerated were more likely to be serving a longer term of

incarceration, reported being more stressed during their imprisonment, and rated living conditions and inmate/staff relations more poorly than inmates who had not been assaulted.

The phase of the sentence and program involvement provide contradictory evidence to the hypothesis. More specifically, participation in programs offered in prison was shown to be associated with an increase in assaults. Inmates involved in prison programs were actually more likely to have been assaulted than those inmates who had not participated in programs. It was also found that the amount of time served was associated with an increase in assaults. Assaulted inmates were more likely to have served more time in prison, a finding which contradicted our hypothesis. However, these findings may be influenced by the sample as a high portion of the files was missing data on this indicator. As such, the remainder of the cases might be unduly influencing the results. Also, the measure is not assessing the proportion of sentence served but the length of time. Therefore, this measure may be invalid as a dependable measure of victimization. The recreational activities and work assignment variables in our deprivation model proved to be unreliable predictors of assaults occurring within federal prisons. These findings failed to support the literature on the effect that unsupervised recreation and participation in work assignments have on the probability that inmates will be victims of assaults while incarcerated.

Although the results of the multivariate analysis supported certain bivariate relationships, the variance explained for all the theoretical models accounted for only a very small proportion of the total variance. Overall, the logistic regression analysis of the two theoretical models leads one to infer that the importation and deprivation measures were not very useful when attempting to determine the estimated probability of victimization. Both the deprivation and importation model failed to distinguish victimized inmates from non-victimized inmates in this sample. To a large degree, this was attributed to many indicators suffering from small B coefficients and relatively large standard errors. Moreover, a significant degree of attrition occurred when the individual indicators were processed through the logistic regression, thereby creating a substantial number of missing cases for each regression model. The significant losses of data in the current study severely put into question the reliability and validity of the multivariate

analysis. Based on this evidence, much still remains unaccounted for when explaining the incidents of assaults occurring in Canadian penitentiaries.

B. METHODOLOGICAL LIMITATIONS OF THE RESEARCH STUDY

Several weaknesses of this thesis need to be acknowledged. Primarily, given the sensitivity of many of some of the questions, issues of validity and reliability arose. There may be an underestimation of inmate victimization because inmates may not been forthcoming with their personal experiences of assaults given the sensitivity of the subject matter. Prisoners may have also feared that Correctional Services of Canada would use the information they provided against them. Therefore, it is impossible to determine if the information provided actually captures the true extent of inmate victimization that occurs in Canadian federal penitentiaries. Prisoners may not report their experiences with victimization or opinions on the prison's effectiveness for fear of retribution.

Secondly, the study is relying on secondary data, thereby limiting the information that can be used to what was initially gathered by the original researchers. Several key variables or scales could not be adequately constructed simply because the necessary information was not gathered in the original survey. For example, the original data had no information pertaining to such factors as the ratio of guards to inmates, violent attitudes among the inmates and stringency of rule enforcement that could have been entered into the theoretical models of importation and deprivation. This weakens somewhat the current analysis of inmate victimization. In addition, the variables used also tended to be very static, ignoring the dynamic nature of the relationships that pervade the prison. It can be argued that these theoretical models lack the flexibility to adequately explain the processes of conflict that occur within the prison system.

Moreover, several issues of causality arose when interpreting the relationships between indicators of importation and deprivation with incidents of assaults in Canadian federal penitentiaries. For example, the security level may reflect imported characteristics as well as deprivation levels. Assaults may be more prevalent in maximum-security prisons simply because the more dangerous offenders are housed

there. Although this may account for the prevalence of assaults in prisons, one must remember that the social order within different levels of security is markedly different (e.g. increased security, fortification of the institution, increased restriction of inmate movement and participation in programs, greater use of solitary confinement in medium and maximum-security prisons, etc.). It is this harsher environment that may also be logically influencing the rates of victimization in Canadian federal prisons. Other deprivation measures may have also been susceptible to this reverse causality. Inmate/staff relations and stress may also at least partly reflect imported characteristics. The dichotomous relationship between imported and deprivation may not exist in the prisons as argued by criminologists. Several factors may correlate together to create situations where certain offenders are likely to be victimized in the prison. As such, the current research lends credence to the notion that both the characteristics imported by the prisoners as well as the unique deprivational factors of the prison itself are interrelated in complex ways.

Another problematic issue is the order of factors such as inmate stress and inmate/staff relations. Although both indicators established an association with incidents of assaults, it is difficult to determine if an inmate's stress level and the quality of inmate/staff relations actually create an increase in the likelihood of assaults. While stress and the quality of relations may influence the prevalence of assaults, the reverse can also be argued. Being assaulted can create stress within an inmate and erode the relations they established with correctional staff. Although the study established an association between inmate stress and staff relations with assaults, we cannot at this point infer a causal relationship. Future research exploring this association is necessary to examine the nature of the relationship that exists between these indicators and victimization.

Although the results presented above provide some support for the applicability of selected indicators of importation and deprivation, concerns with the measures used, the large amount of missing cases and issues of causality, require additional research efforts. The use of better measures may improve the predictive power of the models tested in the current analysis. Future studies should attempt to rigorously examine these models using more adequate datasets in order to replicate the findings.

Moreover, a fruitful avenue for future research relates to the prediction of victimization by examining the impact an inmate's lifestyle on victimization risk. Lifestyles theory argues that people engage in educational, vocational and leisure activities that increase or decrease their interactions with potential offenders (Hindelang et al., 1978). It is these activities and associations that ultimately influence the degree to which people are exposed to situations that put them at high risk for victimization. Lifestyle factors therefore maintain indirect effects on victimization risk via associations and exposure. Therefore, victimization opportunities may be influenced by an inmate's involvement in the activities that either increase or decrease his associations with those who are most likely to commit institutional crime, and influence his exposure to high-risk situations in the correctional institution (Wooldredge, 1998).

An examination of an inmate's lifestyle would prove to be a beneficial and interesting avenue to examine as an explanation of inmate victimization in Canadian prisons because it focuses more on the "series of indirect effects via exposure to, and interactions with, potential offenders" (Wooldredge, 1998; p. 497). Researchers may want to examine the characteristics of both inmate offenders and victims while also measuring associations with potential offenders and exposure to high-risk situations. Similarly, as in the studies of hot spots of predatory crime (e.g. Sherman et al., 1989), an understanding of such hot spots in prison will contribute greatly to the prevention of inmate victimization.

C. IMPLICATIONS FOR INTERVENTION STRATEGIES IN CANADIAN PENITENTIARIES

Theoretically, reducing victimization in prison seems to be a relatively easy task. If inmates most at risk of being victimized could be identified with a reasonable degree of accuracy, management would have a greater understanding of the reasons underlying prison violence, providing them with the tools necessary to effectively deal with the problem. Only by developing an adequate understanding of inmate victimization can we uncover the knowledge that will prove beneficial in designing and implementing effective preventative strategies to ultimately reduce violent behavior in Canadian prisons and foster a safe environment for both inmates and staff. However, as the research above has highlighted, this task is far from simple.

But the study does provide some indications of the applicability of the importation and deprivation models to design intervention strategies to reduce assaults and other forms of victimization in the prison. The results seem to indicate that victimization in the prison is an outcome of both individual characteristics and environmental stressors. Therefore, we would expect that the interaction between the individual and his/her environment would be the most powerful determinant of behaviour (Porporino & Zamble, 1984). Ultimately, the prison environment and inmates' characteristics interact together, determining to a large extent the occurrence of victimization among prisoners. Based on this evidence, the adoption of a more situational approach to reducing victimization in prison seems to be a viable intervention strategy. More specifically, this approach would adopt measures of opportunity reduction and the manipulation of the immediate environment, relying on:

- 1) Measures directed specifically at inmate victimization; which involve the management, design, or manipulation of the immediate environment in which these crimes occur;
- 2) As well as institute general changes in the social relationships or socialization of inmate and staff; in as systematic and permanent a way as possible; so as to reduce to reduce the opportunities for these crimes.

It is readily evident that prisoners are (at least potentially) in a deprived and dependent state are suffering the pains of imprisonment (Sykes, 1958) and are to an extent dependent on the staff to aid them to relieve these pains of imprisonment. Within the prison environment, there is also the existence of some routines and predictability in daily prison life that operate to reduce the risk of victimization (Bottoms et al., 1990). Routines regarded by prisoners as reasonable are more likely to achieve a reduction in victimization than are routines that are regarded as merely tolerable, or downright dreadful. In this respect, prison management should adopt routines regarded as important (within reason) by most prisoners. More specifically, the following routines should be adopted and integrated in daily prison life:

- 1) Delivery of an acceptable level of provision for the basic necessities of life, together with the retention of links with significant others outside

- of the prison (e.g. reasonable food, clothing, and arrangements for family visits, etc.).
- 2) Being treated as an autonomous person, with an element of staff respect for privacy, personal feelings, and a certain freedom to choose what activities to pursue within the inevitable confines that the prison environment creates.
 - 3) Elements of fair treatment from day to day, so that today's rule-enforcement will be more or less the same as yesterday's, unless reasons for change are clearly explained
 - 4) Fair treatment vis-à-vis other inmates.

If a similar regime is delivered in federal correctional institutions which prisoners view as reasonable, they will likely perceive deriving some benefit from respecting these rules. Attention to the services offered to prisoners, the way prisoners view being personally treated in the prison, accountability systems, impartial grievance procedures, and the like, are important not as a matter of humaneness or of inmates' rights, but also in the maintenance of order in the prison. The establishment of an acceptable system of social order in the prison has the potential to be a highly effective preventative strategy, ultimately reducing violent behavior and fostering a safe environment for both inmates and staff.

But to achieve such a solution, the prison administration must have in-depth knowledge of the problem that pervade in the prison itself. Without such insight, attempting to rectify the problem will prove unsuccessful, as we do not have a full understanding of the causes of victimization in prison. Although the present study explored the phenomenon of victimization in the prison, the data source proved problematic, making it very difficult to derive sound generalizable and reliable conclusions and recommendations regarding inmate victimization. The current research highlights the need for further research in this area.

To understand the true extent of victimization in prison, Correctional Services of Canada needs to diligently track its incidence. Although it is not feasible that the organization be aware of every instance of inmate assaults, it needs to devise more precise information gathering tools beyond simply tabulating the rates of violent behaviours in prison. It is readily apparent that establishing uniform and consistent information gathering tools would greatly benefit an understanding of inmate victimization. Correctional Services of Canada should develop an in-depth summary

report sheet to be filled out by correctional officers or other prison staff when victimizing behaviours are discovered. These information sheets would contain certain mandatory information, such as: was inmate a victim or offender, type of victimization (assault, theft, self-injury/suicide, etc.), age of the victim and offender, race of the victim and offender, location of the assault, and the reason for violent behaviour (if possible). By collecting such information, Correctional Services of Canada can better able track the phenomenon of victimization in their prisons, giving them a more in-depth overview of the prevalence of victimization in prison. For example, by simply tracking the location of the incident, they can track “hot spots” in the prison where assaults take place. Knowing the location where assaults are more likely to occur, prison staff may be able to prevent its occurrence through a variety of target hardening measures. Or by simply knowing the most frequent reason underlying most assaultive incidents, prison staff may focus more attention at rectifying these underlying problems to prevent the occurrence of assaults in prison than trying to resolve the problem after the fact.

The current research also demonstrates the need to dig deeper when examining the phenomenon of inmate victimization, to explore the dynamic nature of this phenomenon in the prison. Based on the current research, there is a need within the Correctional Services of Canada as well as academia to collect information surrounding inmate victimization in order to accurately understand the phenomenon. Before delving into the specific nature of inmate victimization, broader studies of victimization are needed. More specifically, researchers should begin examining the extent to which incarceration affects inmates in terms of self-destructive behaviours (i.e. self-injury, suicide, etc.), deviant activities (i.e.: drug trafficking, drug consumption, property theft, etc.) and victimization.

More research is needed exploring the extent to which inmates are susceptible to victimization through the examination of all forms of victimization occurring in the prison, most notably: the inmate as victimizer, victim, and self-victimizer. Multiple sources of data should be examined to generate an accurate depiction of victimization in the prison. A combination of information sources should be culled to understand victimization in prison: namely, inmate surveys, official statistics, etc.

From these, specific information should be gathered to develop a more accurate source of knowledge regarding victimization in prison. More specifically, only information surrounding incidents of assaultive behaviour and the prison environment should be gathered. By generating a victimization database we will be better equipped to study this phenomenon and to provide informed intervention strategies to minimize the problem in our federal penitentiaries.

D. CONCLUSION

The goal of this thesis was to provide a more detailed account of the victimization that occurs in Canadian federal prisons. Given the paucity of the research in this area in Canada, the current study provides a useful overview of this phenomenon. The results indicated that inmate victimization occurs relatively frequently in Canada, however it is not as serious as in the correctional institutions in the United States. Overall, the results suggest that some types of inmates are more prone to being victimized in prison than others. This general observation is not new, but it does reinforce the idea that “doing time” is easier for some inmates than compared with others.

Although the results provided support for the susceptibility to victimization of certain inmates, several methodological weaknesses permeated the study. Therefore, more reliable research is needed to improve attempts to create an environment that contributes to the physical safety and psychological health of inmates, thus maintaining an atmosphere conducive to reintegration.

NOTES

1) By prison misconducts, the authors are referring to official prison documentation of assaultive and non-assaultive misconducts.

2) The following variables were used in the meta-analysis conducted by Gendreau, Goggin, & Law (1997). Several subject demographics were used, specifically: race, gender, marital status, educational achievement, and employment history. The following indicators were used to operationalize criminal history: history of violence, prior prison experience, history of juvenile convictions, prior legal supervision, offense classification (i.e. property vs. violent), age at first arrest, age at first incarceration, and suspended/expelled from school. Family variables included indicators of conflict with parents, family members with a criminal record and/or substance abuse. Psychological characteristics were measured using indicators of personality/diagnostic attributes. The following variables were used to operationalize institutional characteristics: custody levels, density indexes, change in the rate of density, average population, population size, and the mean population controlled for total space.

3) Four sets of independent variables were obtained for each prisoner interviewed for this research. More specifically, background variables comprised eighteen indicators from official departmental records including age, age at time of incarceration, ethnicity, employment status at time of arrest, military service, drug use, alcohol use, crime, crime class, second time felon status, education, religion, previous contact with the criminal justice system, county of commitment, conviction for a violent crime, counts, prior record, and marital status. Personality indicators were assigned as one of the ten types identified by the Megargee typology based on the MMPI. Environmental needs were determined using Toch's Prison Preference Inventory (PPI) for 8 dimensions, which are: freedom, emotional feedback, support, safety, privacy, activity, social stimulation, and structure. Finally, environmental assessments were determined using Wright's Prison Environmental Inventory (PEI) developed for the previous eight dimensions.

4) The following measures were used to operationalize absolute deprivation: prison crowding was computed as the ratio of the average daily population to the design capacity of the institution. Institutions were also coded (1 = yes, 2 = no) as to whether they were currently under court order for specific conditions of confinement. The authors also measured instances of relative deprivation such as increased crowding from 1984 to 1990 (1 = yes, 2 = no), and increased security in the guard inmate-ratios from 1984 to 1990 (1 = yes, 2 = no). Prison management variables included the guard-inmate ratio, guard turnover rate ratio of White-Black correctional staff, program involvement, and institutional size.

5) The variables that were included in this study were: age, ethnicity, family status, offense history, sentence under 5 years, proportion of sentence served, hours per week in education, hours per week at job, hours per week in recreation, hours per week watching

television, number of friends in the facility, visited monthly, and the attitudes towards the facility.

6) The offences listed do not add up to 100%. When asked about what types of offences an inmate committed for their current sentence, they were instructed to check off all crimes that applied to their specific case. Therefore, some inmates may have indicated that they committed a variety of offences.

The homicide category list in the current offence history is a combination of the following types of offences: First-degree murder, second-degree murder, attempted murder, and manslaughter.

7) The heated argument variable was derived from a question in the 1995 National Inmate Survey. The question read as follows: "In your opinion, how often do heated arguments occur among inmates at this institution?" (CSC, 1995; Appendix A, Section III)

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Appendix A – Ethical Review Waiver



Université d'Ottawa • University of Ottawa

Faculté des sciences sociales
Criminologie

Faculty of Social Sciences
Criminology

June 4, 2001

Mr Larry Motiuk
Research Branch
Correctional Services of Canada
340 Laurier Avenue West
Ottawa, Ontario
K1A 0P9

Dear Mr Motiuk:

I'm writing in reference to the MA thesis research project which Mr Michael Swait is hoping to conduct in collaboration with CSC.

As you may know, Michael is proposing to conduct research on the issue of inmate victimization in Canadian Federal Penitentiaries, and hopes to use the results of CSC's National Inmate Survey (1995) as the basis of his work. His thesis proposal has been accepted by the Department (this was one of the requirements of CRM 6200, the thesis preparation course for MA students), and Professor Thomas Gabor will act as his thesis advisor.

The use of some of the results of the 1995 National Inmate Survey involves the use of secondary data and, as such, does not require formal approval of the data collection process by the University Ethics Committee. Nevertheless, all the normal rules and guidelines of the Ethics Committee govern the use and reporting of this data. As such, the appropriate steps will be taken to assure the confidentiality of the data and the complete anonymity of all respondents (all indicators susceptible of identifying the respondent will be eliminated in any reporting of the data in question).

Please do not hesitate to contact me should you require any further information in support of Michael's request. Thank you in advance for your assistance and cooperation in this matter.

Yours sincerely,

Ross Hastings
Chair

25, rue Université C.P. 450, Succ. A
Ottawa (Ontario) K1N 6N5 Canada

25 University St., P.O. Box 450, Str. A
Ottawa, Ontario K1N 6N5 Canada

(613) 562-5303 • Téléc./Fax (613) 562-5304

Appendix B -- Bivariate Analysis

1) Total Assaults by Importation Indicators

Chi-square test for independence

Table 1.1a -- Total Assaults by Marital Status

			Single/Married		Total
			Married/common-law	Single	
Total assaults	no	Count	1053	1819	2872
		% within Single/Married	84.0%	76.8%	79.2%
	yes	Count	201	551	752
		% within Single/Married	16.0%	23.2%	20.8%
Total		Count	1254	2370	3624
		% within Single/Married	100.0%	100.0%	100.0%

Table 1.1b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	25.998 ^b	1	.000	.000	.000
Continuity Correction ^a	25.560	1	.000		
Likelihood Ratio	26.837	1	.000		
Fisher's Exact Test					
Linear-by-Linear Association	25.991	1	.000		
N of Valid Cases	3624				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 260.21.

Table 1.2a -- Total Assaults by Race

			Race					Total
			Caucasian	Black	Asiatic	Aboriginal	Other	
Total assaults	no	Count	2160	187	73	430	44	2894
		% within Race	78.3%	84.6%	84.9%	82.4%	68.8%	79.2%
	yes	Count	599	34	13	92	20	758
		% within Race	21.7%	15.4%	15.1%	17.6%	31.3%	20.8%
Total		Count	2759	221	86	522	64	3652
		% within Race	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 1.2b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.466 ^a	4	.006
Likelihood Ratio	14.576	4	.006
Linear-by-Linear Association	2.352	1	.125
N of Valid Cases	3652		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.28.

Table 1.3a -- Total Assaults by Substance Abuse Problem

			Substance Abuse Problem		Total
			no	yes	
Total assaults	no	Count	1516	831	2347
		% within Substance Abuse Problem	81.3%	75.8%	79.3%
	yes	Count	349	265	614
		% within Substance Abuse Problem	18.7%	24.2%	20.7%
Total		Count	1865	1096	2961
		% within Substance Abuse Problem	100.0%	100.0%	100.0%

Table 1.3b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.547 ^b	1	.000		
Continuity Correction ^a	12.217	1	.000		
Likelihood Ratio	12.369	1	.000		
Fisher's Exact Test				.001	.000
Linear-by-Linear Association	12.543	1	.000		
N of Valid Cases	2961				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 227.27.

Table 1.4a -- Total Assaults by Education

			Education			Total
			Grade 12 or less	High School diploma	Post Secondary Education	
Total assaults	no	Count	1701	443	539	2683
		% within Education	79.7%	80.1%	76.8%	79.2%
	yes	Count	433	110	163	706
		% within Education	20.3%	19.9%	23.2%	20.8%
Total		Count	2134	553	702	3389
		% within Education	100.0%	100.0%	100.0%	100.0%

Table 1.4b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.102 ^a	2	.212
Likelihood Ratio	3.044	2	.218
Linear-by-Linear Association	2.179	1	.140
N of Valid Cases	3389		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 115.20.

Independent Samples T-Tests

Table 1.5a -- Group Statistics: Total Assaults by Age and Prior Incarceration

Total assaults		N	Mean	Std. Deviation	Std. Error Mean
Age	no	3012	35.295	10.475	.191
	yes	782	34.737	9.201	.329
Prior incarceration	no	1891	4.1413	5.3515	.1231
	yes	483	4.7644	5.8789	.2674

Table 1.5b -- Independent Samples T-Tests: Total Assaults by Age and Prior Incarceration

		Levene's Test for Equality of Variances	
		F	Sig.
Age	Equal variances assumed	13.236	.000
	Equal variances not assumed		
Prior incarceration	Equal variances assumed	3.399	.065
	Equal variances not assumed		

Table 1.5b -- Independent Samples T-Tests: Total Assaults by Age and Prior Incarceration

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Age	Equal variances assumed	1.361	3792	.173	.559
	Equal variances not assumed	1.469	1355.449	.142	.559
Prior incarceration	Equal variances assumed	-2.238	2372	.025	-.6231
	Equal variances not assumed	-2.117	700.250	.035	-.6231

Table 1.5b -- Independent Samples T-Tests: Total Assaults by Age and Prior Incarceration

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Age	Equal variances assumed	.410	-.246	1.363
	Equal variances not assumed	.380	-.187	1.305
Prior incarceration	Equal variances assumed	.2784	-1.1691	-7.71E-02
	Equal variances not assumed	.2944	-1.2010	-4.51E-02

2) Assaults with a weapon by Importation Indicators

Chi- Square Test for Independence

Table 2.1a -- Assaults with a weapon by Marital Status

			Single/Married		Total
			Married/common-law	Single	
Assaults with a weapon	no	Count	1187	2175	3362
		% within Single/Married	94.6%	91.8%	92.7%
	yes	Count	68	195	263
		% within Single/Married	5.4%	8.2%	7.3%
Total		Count	1255	2370	3625
		% within Single/Married	100.0%	100.0%	100.0%

Table 2.1b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.625 ^b	1	.002		
Continuity Correction ^a	9.212	1	.002		
Likelihood Ratio	10.060	1	.002		
Fisher's Exact Test				.002	.001
Linear-by-Linear Association	9.623	1	.002		
N of Valid Cases	3625				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 91.05.

Table 2.2a -- Assaults with a weapon by Race

			Race					Total
			Caucasian	Black	Asiatic	Aboriginal	Other	
Assaults with a weapon	no	Count	2534	212	82	500	58	3386
		% within Race	92.2%	93.4%	96.5%	94.0%	90.6%	92.6%
	yes	Count	215	15	3	32	6	271
		% within Race	7.8%	6.6%	3.5%	6.0%	9.4%	7.4%
Total	Count		2749	227	85	532	64	3657
	% within Race		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.2b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.624 ^a	4	.328
Likelihood Ratio	5.109	4	.276
Linear-by-Linear Association	1.920	1	.166
N of Valid Cases	3657		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.74.

Table 2.3a -- Assaults with a weapon by Substance Abuse Problem

			Substance Abuse Problem		Total
			no	yes	
Assaults with a weapon	no	Count	1774	995	2769
		% within Substance Abuse Problem	94.5%	90.3%	92.9%
	yes	Count	104	107	211
		% within Substance Abuse Problem	5.5%	9.7%	7.1%
Total	Count		1878	1102	2980
	% within Substance Abuse Problem		100.0%	100.0%	100.0%

Table 2.3b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	18.371 ^b	1	.000		
Continuity Correction ^a	17.743	1	.000		
Likelihood Ratio	17.764	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	18.365	1	.000		
N of Valid Cases	2980				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 78.03.

Table 2.4a -- Assaults with a weapon by Education

			Education			Total
			Grade 12 or less	High School diploma	Post Secondary Education	
Assaults with a weapon	no	Count	1967	519	653	3139
		% within Education	92.3%	93.9%	92.2%	92.5%
	yes	Count	164	34	55	253
		% within Education	7.7%	6.1%	7.8%	7.5%
Total		Count	2131	553	708	3392
		% within Education	100.0%	100.0%	100.0%	100.0%

Table 2.4b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.648 ^a	2	.439
Likelihood Ratio	1.726	2	.422
Linear-by-Linear Association	.053	1	.818
N of Valid Cases	3392		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 41.25.

Independent Samples T-Tests

Table 2.5a -- Group Statistics: Assaults with a weapon by Age and Prior Incarceration

Assaults with a weapon		N	Mean	Std. Deviation	Std. Error Mean
Age	no	3511	35.332	10.416	.176
	yes	282	34.913	8.922	.531
Prior incarceration	no	2194	4.1335	5.4313	.1159
	yes	179	5.1074	5.2293	.3912

Table 2.5b -- Independent Samples T-Tests: Assaults with a weapon by Age and Prior Incarceration

		Levene's Test for Equality of Variances	
		F	Sig.
Age	Equal variances assumed	5.437	.020
	Equal variances not assumed		
Prior incarceration	Equal variances assumed	.299	.585
	Equal variances not assumed		

Table 2.5b -- Independent Samples T-Tests: Assaults with a weapon by Age and Prior Incarceration

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Age	Equal variances assumed	.657	3792	.511	.419
	Equal variances not assumed	.749	346.082	.454	.419
Prior incarceration	Equal variances assumed	-2.311	2371	.021	-.9739
	Equal variances not assumed	-2.387	210.173	.018	-.9739

Table 2.5b -- Independent Samples T-Tests: Assaults with a weapon by Age and Prior Incarceration

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Age	Equal variances assumed	.638	-.832	1.670
	Equal variances not assumed	.559	-.681	1.519
Prior incarceration	Equal variances assumed	.4213	-1.8001	-.1477
	Equal variances not assumed	.4080	-1.7782	-.1696

3) Total Assaults by Deprivation Indicators**Chi-Square Test for Independence****Table 3.1a -- Total Assaults by Security Level**

			Security Level			Total
			Minimum	Medium	Maximum	
Total assaults	no	Count	473	1833	741	3047
		% within Security Level	90.1%	79.5%	73.4%	79.3%
	yes	Count	52	472	269	793
		% within Security Level	9.9%	20.5%	26.6%	20.7%
Total	Count		525	2305	1010	3840
	% within Security Level		100.0%	100.0%	100.0%	100.0%

Table 3.1b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59.103 ^a	2	.000
Likelihood Ratio	64.480	2	.000
Linear-by-Linear Association	56.518	1	.000
N of Valid Cases	3840		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 108.42.

Table 3.2a -- Total Assaults by Work Assignment

			Work Assignment		Total
			no	yes	
Total assaults	no	Count	82	812	894
		% within Work Assignment	83.7%	79.0%	79.4%
	yes	Count	16	216	232
		% within Work Assignment	16.3%	21.0%	20.6%
Total		Count	98	1028	1126
		% within Work Assignment	100.0%	100.0%	100.0%

Table 3.2b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.201 ^b	1	.273	.299	.168
Continuity Correction ^a	.931	1	.335		
Likelihood Ratio	1.263	1	.261		
Fisher's Exact Test					
Linear-by-Linear Association	1.199	1	.273		
N of Valid Cases	1126				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.19.

Table 3.3a -- Total Assaults by Program Involvement

			Program Involvement		Total
			No	yes	
Total assaults	no	Count	304	975	1279
		% within Program Involvement	88.1%	76.9%	79.3%
	yes	Count	41	293	334
		% within Program Involvement	11.9%	23.1%	20.7%
Total		Count	345	1268	1613
		% within Program Involvement	100.0%	100.0%	100.0%

Table 3.3b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	20.806 ^b	1	.000	.000	.000
Continuity Correction ^a	20.128	1	.000		
Likelihood Ratio	22.943	1	.000		
Fisher's Exact Test					
Linear-by-Linear Association	20.793	1	.000		
N of Valid Cases	1613				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 71.44.

Independent Samples T-Tests

Table 3.4a -- Group Statistics: Total assaults by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

	Total assaults	N	Mean	Std. Deviation	Std. Error Mean
Sentence Length	no	2200	80.7564	73.9975	1.5777
	yes	527	91.9065	97.9978	4.2680
PHASE	no	1510	43.3739	55.3722	1.4250
	yes	428	56.9305	83.9720	4.0610
Living Conditions	no	2736	4.0567	1.4164	2.708E-02
	yes	706	3.6198	1.3496	5.080E-02
Staff Relations	no	2685	3.4956	1.2526	2.418E-02
	yes	696	3.1791	1.2436	4.715E-02
Inmate stress	no	1911	3.9648	1.3387	3.063E-02
	yes	504	4.7463	1.3385	5.959E-02
Recreational activities (Time spent)	no	1272	1.8110	1.8308	5.132E-02
	yes	379	1.7989	1.5718	8.070E-02

Table 3.4b -- Independent Samples T-Tests: Total assaults by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		Levene's Test for Equality of Variances	
		F	Sig.
Sentence Length	Equal variances assumed	10.557	.001
	Equal variances not assumed		
PHASE	Equal variances assumed	13.367	.000
	Equal variances not assumed		
Living Conditions	Equal variances assumed	6.147	.013
	Equal variances not assumed		
Staff Relations	Equal variances assumed	.056	.813
	Equal variances not assumed		
Inmate stress	Equal variances assumed	.553	.457
	Equal variances not assumed		
Recreational activities (Time spent)	Equal variances assumed	.287	.592
	Equal variances not assumed		

Table 3.4b -- Independent Samples T-Tests: Total assaults by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Sentence Length	Equal variances assumed	-2.903	2725	.004	-11.1501
	Equal variances not assumed	-2.450	676.831	.015	-11.1501
PHASE	Equal variances assumed	-3.940	1935	.000	-13.5566
	Equal variances not assumed	-3.150	535.793	.002	-13.5566
Living Conditions	Equal variances assumed	7.376	3439	.000	.4369
	Equal variances not assumed	7.589	1138.356	.000	.4369
Staff Relations	Equal variances assumed	5.947	3378	.000	.3165
	Equal variances not assumed	5.973	1088.567	.000	.3165
Inmate stress	Equal variances assumed	-11.663	2413	.000	-.7815
	Equal variances not assumed	-11.664	789.978	.000	-.7815
Recreational activities (Time spent)	Equal variances assumed	.117	1650	.907	1.216E-02
	Equal variances not assumed	.127	711.724	.899	1.216E-02

Table 3.4b -- Independent Samples T-Tests: Total assaults by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Sentence Length	Equal variances assumed	3.8405	-18.6807	-3.6195
	Equal variances not assumed	4.5503	-20.0844	-2.2158
PHASE	Equal variances assumed	3.4406	-20.3042	-6.8089
	Equal variances not assumed	4.3037	-22.0109	-5.1023
Living Conditions	Equal variances assumed	5.923E-02	.3207	.5530
	Equal variances not assumed	5.757E-02	.3239	.5498
Staff Relations	Equal variances assumed	5.321E-02	.2121	.4208
	Equal variances not assumed	5.298E-02	.2125	.4204
Inmate stress	Equal variances assumed	6.701E-02	-.9129	-.6501
	Equal variances not assumed	6.700E-02	-.9131	-.6500
Recreational activities (Time spent)	Equal variances assumed	.1038	-.1915	.2158
	Equal variances not assumed	9.564E-02	-.1756	.1999

4) Assaults with a weapon by Deprivation Indicators

Chi-Square Test for Independence

Table 4.1a -- Assaults with a weapon by Security Level

			Security Level			Total
			Minimum	Medium	Maximum	
Assaults with a weapon	no	Count	512	2156	888	3556
		% within Security Level	98.1%	93.4%	88.0%	92.6%
	yes	Count	10	153	121	284
		% within Security Level	1.9%	6.6%	12.0%	7.4%
Total	Count		522	2309	1009	3840
	% within Security Level		100.0%	100.0%	100.0%	100.0%

Table 4.1b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.009 ^a	2	.000
Likelihood Ratio	60.475	2	.000
Linear-by-Linear Association	55.859	1	.000
N of Valid Cases	3840		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 38.61.

Table 4.2a -- Assaults with a weapon by Work Assignment

			Work Assignment		Total
			no	yes	
Assaults with a weapon	no	Count	92	953	1045
		% within Work Assignment	95.8%	92.3%	92.6%
	yes	Count	4	80	84
		% within Work Assignment	4.2%	7.7%	7.4%
Total		Count	96	1033	1129
		% within Work Assignment	100.0%	100.0%	100.0%

Table 4.2b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.633 ^b	1	.201	.306	.139
Continuity Correction ^a	1.154	1	.283		
Likelihood Ratio	1.894	1	.169		
Fisher's Exact Test					
Linear-by-Linear Association	1.631	1	.202		
N of Valid Cases	1129				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.14.

Table 4.3a -- Assaults with a weapon by Program Involvement

			Program Involvement		Total
			No	yes	
Assaults with a weapon	no	Count	335	1179	1514
		% within Program Involvement	95.4%	92.2%	92.9%
	yes	Count	16	100	116
		% within Program Involvement	4.6%	7.8%	7.1%
Total		Count	351	1279	1630
		% within Program Involvement	100.0%	100.0%	100.0%

Table 4.3b -- Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.429 ^b	1	.035		
Continuity Correction ^a	3.949	1	.047		
Likelihood Ratio	4.875	1	.027		
Fisher's Exact Test				.035	.020
Linear-by-Linear Association	4.426	1	.035		
N of Valid Cases	1630				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.98.

Independent Sample T-Tests

Table 4.4a -- Group Statistics: Assaults with a weapon by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

	Assaults with a weapon	N	Mean	Std. Deviation	Std. Error Mean
Sentence Length	no	2550	81.1468	78.7180	1.5590
	yes	176	115.7421	120.2096	9.0580
PHASE	no	1787	44.6677	63.1346	1.4934
	yes	152	69.1347	93.5058	7.5767
Living Conditions	no	3197	3.9947	1.4146	2.502E-02
	yes	248	3.4956	1.3899	8.819E-02
Staff Relations	no	3141	3.4769	1.2602	2.248E-02
	yes	254	2.8962	1.1447	7.187E-02
Inmate stress	no	2265	4.0793	1.3588	2.855E-02
	yes	176	4.8147	1.4200	.1069
Recreational activities (Time spent)	no	1522	1.7834	1.7170	4.401E-02
	yes	143	2.1107	2.1492	.1794

Table 4.4b -- Independent Samples T-Tests: Assaults with a weapon by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		Levene's Test for Equality of Variances	
		F	Sig.
Sentence Length	Equal variances assumed	34.120	.000
	Equal variances not assumed		
PHASE	Equal variances assumed	12.151	.001
	Equal variances not assumed		
Living Conditions	Equal variances assumed	.499	.480
	Equal variances not assumed		
Staff Relations	Equal variances assumed	6.522	.011
	Equal variances not assumed		
Inmate stress	Equal variances assumed	.780	.377
	Equal variances not assumed		
Recreational activities (Time spent)	Equal variances assumed	4.536	.033
	Equal variances not assumed		

Table 4.4b -- Independent Samples T-Tests: Assaults with a weapon by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Sentence Length	Equal variances assumed	-5.414	2724	.000	-34.5952
	Equal variances not assumed	-3.764	185.640	.000	-34.5952
PHASE	Equal variances assumed	-4.391	1938	.000	-24.4669
	Equal variances not assumed	-3.168	163.270	.002	-24.4669
Living Conditions	Equal variances assumed	5.363	3443	.000	.4990
	Equal variances not assumed	5.444	288.678	.000	.4990
Staff Relations	Equal variances assumed	7.106	3393	.000	.5807
	Equal variances not assumed	7.711	304.337	.000	.5807
Inmate stress	Equal variances assumed	-6.900	2439	.000	-.7354
	Equal variances not assumed	-6.645	201.197	.000	-.7354
Recreational activities (Time spent)	Equal variances assumed	-2.132	1663	.033	-.3273
	Equal variances not assumed	-1.772	160.091	.078	-.3273

Table 4.4b -- Independent Samples T-Tests: Assaults with a weapon by Sentence Length, Phase of Sentence, Living Conditions, Staff Relations, Inmate Stress, and Recreational Activities

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Sentence Length	Equal variances assumed	6.3902	-47.1254	-22.0650
	Equal variances not assumed	9.1912	-52.7278	-16.4626
PHASE	Equal variances assumed	5.5721	-35.3949	-13.5390
	Equal variances not assumed	7.7225	-39.7157	-9.2181
Living Conditions	Equal variances assumed	9.306E-02	.3166	.6815
	Equal variances not assumed	9.167E-02	.3186	.6795
Staff Relations	Equal variances assumed	8.172E-02	.4205	.7409
	Equal variances not assumed	7.530E-02	.4325	.7289
Inmate stress	Equal variances assumed	.1066	-.9443	-.5264
	Equal variances not assumed	.1107	-.9536	-.5171
Recreational activities (Time spent)	Equal variances assumed	.1535	-.6285	-2.62E-02
	Equal variances not assumed	.1847	-.6922	3.752E-02

Appendix C -- Multivariate Analysis: Logistic Regression

1) Importation Model -- Total Assaults

Total number of cases: 4283 (Unweighted)
 Number of selected cases: 4283
 Number of unselected cases: 0

 Number of selected cases: 4283
 Number rejected because of missing data: 2748
 Number of cases included in the analysis: 1535

Dependent Variable Encoding:

Original Value	Internal Value
0	0
1	1

Dependent Variable.. S3Q6 Total assaults

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 1557.4422

* Constant is included in the model.

Beginning Block Number 1. Method: Enter

Variable(s) Entered on Step Number

1..	AGE	Age
	MARITAL	Single/Married
	RACE	Race
	EDUCATIO	Education
	ABUSE	Substance Abuse Problem
	PRIOR	Prior incarceration

Estimation terminated at iteration number 3 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood	1531.497
Goodness of Fit	1553.986
Cox & Snell - R^2	.017
Nagelkerke - R^2	.017

	Chi-Square	df	Significance
Model	25.945	6	.0002
Block	25.945	6	.0002
Step	25.945	6	.0002

Classification Table for S3Q6

The Cut Value is .50

		Predicted				Percent Correct
		no		yes		
		n	I	n	I	
Observed		-----+-----				
no	n	I	1245	I	0	100.00%
		-----+-----				
yes	y	I	311	I	0	.00%
		-----+-----				
		Overall				80.01%

----- Variables in the Equation -----							
Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AGE	-.0123	.0073	2.8388	1	.0920	-.0232	.9877
MARITAL	.3429	.1409	5.9182	1	.0150	.0502	1.4090
RACE	-.0491	.0580	.7170	1	.3971	.0000	.9521
EDUCATIO	.1344	.0789	2.9016	1	.0885	.0241	1.1439
ABUSE	.4103	.1323	9.6236	1	.0019	.0700	1.5072
PRIOR	.0153	.0107	2.0315	1	.1541	.0045	1.0154
Constant	-1.5887	.3267	23.6431	1	.0000		

2) Importation Model -- Assaults with a weapon

Total number of cases: 4283 (Unweighted)
 Number of selected cases: 4283
 Number of unselected cases: 0

 Number of selected cases: 4283
 Number rejected because of missing data: 2748
 Number of cases included in the analysis: 1535

Dependent Variable Encoding:

Original Value	Internal Value
0	0
1	1

Dependent Variable.. S3Q9 Assaults with a weapon
Beginning Block Number 0. Initial Log Likelihood Function
-2 Log Likelihood 761.10503
* Constant is included in the model.

Beginning Block Number 1. Method: Enter

Variable(s) Entered on Step Number
1.. AGE Age
 MARITAL Single/Married
 RACE Race
 EDUCATIO Education
 ABUSE Substance Abuse Problem
 PRIOR Prior incarceration

Estimation terminated at iteration number 5 because
Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood 747.308
Goodness of Fit 1560.227
Cox & Snell - R^2 .009
Nagelkerke - R^2 .023

	Chi-Square	df	Significance
Model	13.797	6	.0320
Block	13.797	6	.0320
Step	13.797	6	.0320

Classification Table for S3Q9
The Cut Value is .50

		Predicted		Percent Correct	
		no	yes		
Observed		n	I	y	
	no	n	I	1453	I 0 I
yes	y	I	104	I 0 I	.00%
				Overall	93.35%

Variables in the Equation							
Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
AGE	-.0132	.0120	1.2278	1	.2678	.0000	.9868
MARITAL	.2987	.2282	1.7128	1	.1906	.0000	1.3481
RACE	-.0136	.0905	.0225	1	.8807	.0000	.9865
EDUCATIO	-.0469	.1305	.1291	1	.7194	.0000	.9542
ABUSE	.6212	.2108	8.6815	1	.0032	.0937	1.8612
PRIOR	-.0083	.0194	.1827	1	.6691	.0000	.9918
Constant	-2.5516	.5303	23.1541	1	.0000		

3) Deprivation Model: Total Assaults

Total number of cases: 4283 (Unweighted)
 Number of selected cases: 4283
 Number of unselected cases: 0

Number of selected cases: 4283
 Number rejected because of missing data: 2762
 Number of cases included in the analysis: 1521

Dependent Variable Encoding:

Original Value	Internal Value
0	0
1	1

Dependent Variable.. S3Q6 Total assaults

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 1509.6702

* Constant is included in the model.

Beginning Block Number 1. Method: Enter

Variable(s) Entered on Step Number
 1.. SECLEVEL Security Level
 LENGTH Sentence Length
 LIVING Living Conditions
 STAFFREL Staff Relations
 STRESS Inmate stress

Estimation terminated at iteration number 4 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood 1409.020
 Goodness of Fit 1590.474
 Cox & Snell - R² .063
 Nagelkerke - R² .063

	Chi-Square	df	Significance
Model	100.650	5	.0000
Block	100.650	5	.0000
Step	100.650	5	.0000

Classification Table for S3Q6

The Cut Value is .50

Observed	n	Predicted		Percent Correct			
		no	yes				
		n	I	y			
no	n	I	1259	I	3	I	99.73%
yes	y	I	284	I	11	I	3.59%
Overall 81.55%							

Variables in the Equation							
Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SECLEVEL	.4015	.1206	11.0769	1	.0009	.0775	1.4940
LENGTH	.0004	.0010	.1203	1	.7287	.0000	1.0004
LIVING	-.0742	.0546	1.8439	1	.1745	.0000	.9285
STAFFREL	-.1449	.0613	5.5802	1	.0182	-.0487	.8651
STRESS	.3672	.0546	45.1495	1	.0000	.1691	1.4436
Constant	-3.2059	.4874	43.2674	1	.0000		

4) Deprivation Model -- Assaults with a weapon

Total number of cases: 4283 (Unweighted)
 Number of selected cases: 4283
 Number of unselected cases: 0

Number of selected cases: 4283
 Number rejected because of missing data: 2741
 Number of cases included in the analysis: 1542

Dependent Variable Encoding:

Original Value	Internal Value
0	0
1	1

Dependent Variable.. S3Q9 Assaults with a weapon

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 694.98911

• Constant is included in the model.

Beginning Block Number 1. Method: Enter

Variable(s) Entered	on Step Number
1.. SECLEVEL	Security Level
LENGTH	Sentence Length
LIVING	Living Conditions
STAFFREL	Staff Relations
STRESS	Inmate stress

Estimation terminated at iteration number 5 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood	643.230
Goodness of Fit	1591.632
Cox & Snell - R ²	.032
Nagelkerke - R ²	.091

	Chi-Square	df	Significance
Model	51.760	5	.0000
Block	51.760	5	.0000
Step	51.760	5	.0000

Classification Table for S3Q9

The Cut Value is .50

Observed		Predicted		Percent Correct
		no	yes	
no	n	I 1488 I	0 I	100.00%
yes	y	I 91 I	0 I	.00%
Overall				94.25%

Variables in the Equation							
Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SECLEVEL	.4602	.1993	5.3324	1	.0209	.0692	1.5844
LENGTH	.0030	.0014	4.8590	1	.0275	.0641	1.0030
LIVING	.0227	.0897	.0641	1	.8002	.0000	1.0230
STAFFREL	-.3365	.1032	10.6295	1	.0011	-.1114	.7143
STRESS	.3315	.0889	13.8906	1	.0002	.1308	1.3931
Constant	-4.6121	.8093	32.4791	1	.0000		