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Motivational Interviewing as a Precursor to a
Substance Abuse Program for Offenders

by

Susan Alexandra Vanderburg

A thesis submitted to
The Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Doctorate of Philosophy

Department of Psychology

Carleton University

Ottawa, Ontario

29 April 2002

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ABSTRACT

The present research explored the use of motivational interviewing as a pre-treatment primer for a substance abuse program. The effective treatment of offender drug abuse problems is of particular concern in corrections because of high levels of drug abuse reported in offender populations. Increasing motivation before substance abuse treatment is extremely important in order to augment treatment effectiveness. Ninety-six federal inmates at a medium security federal Institution, who had a drug problem and who met the criteria for the substance abuse treatment program, were randomly assigned to one of the three conditions ($n = 32$ per condition) in this study. Offenders either participated in a 45- to 60- minute motivational interview condition, a 45- to 60-minute control interview condition, or a no-interview control condition. Most offenders later completed a six-week cognitive-behavioural substance abuse treatment program. Readiness to change was measured by stages of change instruments and a processes of change instrument. Testing was completed in three phases: preceding the interview (or no-interview), after one week, and after completion of the substance abuse treatment. The motivational interviewing condition had significant change from Phase I

to Phase II testing on RCQ-TV action scores as compared with the interview control and the no-interview control conditions. Other stage instruments (URICA, SOCRATES) did not significantly differ across conditions. When processes of change were measured using the Behavioural subscale of the POC-SU, the motivational interviewing condition had significant change in increased use of behavioural processes from Phase I to II testing as compared with the two control conditions. Both a stages of change instrument and a processes of change instrument were able to detect effects of motivational interviewing in this study. In addition, there were some main effects of testing time at Phase III testing, likely indicating that the measures were able to detect the larger effect of the subsequent substance abuse program. Problems with stages of change instruments are outlined. Disadvantages and advantages of the current study are discussed and implications for future research are mentioned.

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Motivational Interviewing as a Precursor to a Substance Abuse Program for Offenders

Introduction

Decreasing offender substance abuse is of particular concern in corrections because high levels of drug abuse have been reported in offender populations in the United States (Chaiken, 1989; Innes, 1988; Miller & Welte, 1987) and in Canada (Lightfoot & Hodgins, 1988; Robinson, Porporino, & Millson, 1991; Weekes, Fabiano, Porporino, Robinson, & Millson, 1993). According to a 1986 Bureau of Justice Statistics report, 62% of State Inmates regularly used drugs before incarceration (Innes, 1988). In fact, 43% had used drugs daily for a month preceding the offense for which they are incarcerated (Innes, 1988). Chaiken (1989) reported that 50% of all inmates in the United States were regularly using illegal drugs prior to their last arrest, but that these same inmates did not receive treatment while they were incarcerated.

Canadian survey results on drug use among offenders prior to incarceration show similar statistics (Lightfoot & Hodgins, 1988; Robinson et al., 1991;

Weekes et al., 1993). For example, Lightfoot and Hodgins (1988) were interested in initial estimates of drug problems in an incarcerated sample so they had any offenders who were willing to give information participate in their study. In total, of the 275 Canadian federal inmate respondents, 80% had used one or more drugs in the 6 months prior to incarceration. More importantly, 63% of these offender volunteers had acknowledged moderate to severe problems with drugs (Lightfoot & Hodgins, 1988). Other data from a random sample of 503 Canadian male federal offenders provides further evidence that appropriate drug treatment is a necessity (Robinson et al., 1991). Numbers are still substantial, however they are somewhat lower than the results of Lightfoot and Hodgins (1988) because this sample was chosen at random instead of using volunteers. Utilizing the Drug Abuse Screening Test (DAST; Skinner, 1982), Robinson et al., found that in the six months before arrest, 27.5% of offenders had moderate to severe level problems with drugs: 52.4% did not report a problem with drugs, 20.1% reported low level problems, 10.5% indicated moderate drug problems, 10.5% demonstrated substantial drug problems, and 6.5% acknowledged severe drug problems (Robinson et al., 1991).

Weekes et al. (1993) reported the recent statistics of drug problems in a Canadian offender sample ($n = 4,941$ inmates): 52% no problems, 20% low level problems, 12% intermediate problems, 12% substantial problems, and 4% severe problems. Marijuana, cocaine, and combinations of drugs and alcohol were used most by offenders in the six months prior to their incarceration (Weekes et al., 1993). Also with a Canadian offender sample ($n = 8598$ inmates), Brochu, Cousineau, Gillet, Cournoyer, Pernanen, & Motiuk (2001) found that more than half (52.1%) used drugs regularly. The most frequent drugs used by offenders every day or almost every day in the six months before arrest were cannabis, cocaine, and heroin (Brochu et al., 2001). Thus, these statistics suggest that about half of the offender population have problems with drug abuse that needs to be addressed.

In this paper, substance abuse refers to problematic use of both drugs and alcohol. In contrast, drug abuse refers to problematic usage of drugs, not including alcohol. The focus of this thesis is on drug using offenders.

The justification for offenders substance abuse treatment is that there is a high correlation between drug use and crime, and that effective treatment of drug abuse decreases the likelihood of drug relapse and reduces

recidivism. This does not imply that drug use is the only correlate of criminal behaviour or that drug use directly causes crime. Drug abuse has been found to be correlated with criminal behaviour in United States samples (Anglin & Speckart, 1988; Chaiken & Chaiken, 1982; Goode, 1993; Greene, 1981; Harrison & Gfroerer, 1992; Miller & Welte, 1987; Nurco, Ball, Shaffer, & Hanlon, 1985; Nurco, Hanlon, Kinlock, & Duszynski, 1988; Speckart & Anglin, 1986). Research shows that criminal behaviour usually occurs prior to drug abuse (Chaiken & Chaiken, 1990); however, the abuse of drugs can lead to greater involvement in criminal behaviour (Nurco et al., 1985). Research also indicates that rates of criminal behaviour are higher for heavier drug users than more infrequent users or nonusers (Harrison & Gfroerer, 1992). In addition, narcotic abusers substantially increase their criminal activity during periods of increased narcotic usage (Nurco et al., 1988; Anglin & Speckart, 1988). Data from two inmate surveys indicate that drug and alcohol use are associated with all types of criminal offenses (Miller & Welte, 1987).

Canadian offender data also shows a strong co-occurring relationship between drug abuse and crime (Lightfoot & Hodgins, 1988; Robinson et al., 1991; Weekes et al., 1993). Lightfoot and Hodgins (1988) report that

53% of offenders who volunteered for the survey reportedly used drugs or a combination of drugs and alcohol on the day of the offence for which they were incarcerated. Of randomly chosen offenders, 32.7% admitted to being under the influence of drugs at the time of the offense for which they were imprisoned (Robinson et al., 1991). Drug users further indicated that their use of drugs was associated with their offences: 71.1% agreed that their judgement was worsened as a result of the drug use and 74.5% indicated that taking drugs had made them more likely to offend (Robinson et al., 1991). Finally, of the offenders who had indicated substance usage in the Weekes et al., (1993) study, (n = 2,700 inmates), 15.9% had been under the influence of drugs and 23.8% had been under the influence of both drugs and alcohol during the commission of the crime for which they were incarcerated (Weekes et al., 1993). Results of further analyses indicated that the relationship between substance use and crime increased with problem severity (Weekes et al., 1993). Weekes et al. (1993) reported that a high percentage of offenders with severe substance abuse problems had been under the influence during the offence for which they were incarcerated (97%). The percentage still remained high (87%) for this same group when most or all of their crimes were considered. Therefore, the

complex relationship between substance abuse and crime is problematic for offenders in general, but particularly for those offenders with severe substance abuse problems.

The association of drugs and crime is also not homogeneous; for example, "Illicit drug users commit crimes under the influence of drugs or to support their habits; many crimes also are committed in the course of manufacturing, selling, and distributing drugs" (Bray, Marsden, & Vincus, 1999, p. 3-4). Goldstein (1989, as cited in Cantor, 1999) has classified motivations for drug involvement and crime into three categories: economic compulsive (supporting a drug habit), psychopharmacological (criminal behaviour associated with the "high" or with withdrawal), and systemic (crime inherent in the drug trade). Although there are some instances of violent crime associated with drug intoxication, using drugs is most strongly linked to engaging in property crimes; including theft, burglary, forgery, robbery, and others (Anglin & Speckhart, 1986; Brochu et al., 2001; Speckhart & Anglin, 1986). In contrast, violent crimes are more associated with alcohol use (Brochu et al., 2001; Robinson et al., 1991).

The aforementioned rates of drug use in criminal populations and the association between offender drug use and criminal behaviour present an important area for

treatment. Clearly, appropriate and effective drug treatment is needed for offenders.

Effective Correctional Treatment

Across the last three decades a debate has been ongoing in the literature regarding the effectiveness of correctional treatment since Martinson's (1974) proclamation that "nothing works". Martinson's mistaken conclusion was exposed as such by Gendreau and Ross (1979). Gendreau and Ross explained that according to the basic "nothing works" belief, one is supposed to accept that, in comparison with the average person, "criminal offenders are incapable of relearning or acquiring new behaviors" (p. 465-466). Also, a "nothing works" stance conveniently absolves corrections of one of their main responsibilities, namely being accountable (Gendreau & Ross, 1979). This important paper by Gendreau and Ross (1979) launched a new era of requiring presentation of objective, informed, empirical findings that demonstrate what types of correctional treatment work with which types of offenders for what sorts of problems.

Gendreau and Ross (1979) reviewed 95 well-controlled experiments between 1973 and 1978 on correctional treatment and determined that 86% were successful. Successful treatment showed long-term recidivism rates that were reduced by 30% to 60% (Gendreau & Ross, 1979).

Since 1979, a variety of literature reviews (Gendreau & Ross, 1987; Ross & Fabiano, 1985) and meta-analyses (Andrews, Zinger, et al., 1990; Garrett, 1985; Izzo & Ross, 1990; Lipsey, 1992) have objectively contributed to the literature on effective correctional treatment.

Garrett (1985) performed a meta-analysis on 111 studies of treatment with 13,000 juvenile delinquents and concluded that treatment worked in institutions as well as in the community. Larger effect sizes were evidenced for social learning, family therapy, and cognitive-behavioural approaches (Garrett, 1985). In a meta-analysis of 46 juvenile offender treatment programs, Izzo and Ross (1990) found that cognitive programs were over twice as effective as non-cognitive programs. Results of Lipsey's (1992) meta-analysis with over 400 published and unpublished studies on juvenile offender treatment showed that behavioural, skill-oriented, and multimodal treatments had the largest effect sizes. Palmer's (1996) review of 9 meta-analyses and 23 literature reviews on correctional treatment indicated that the largest effect sizes or greatest reductions in recidivism occurred for behavioural, cognitive-behavioural or cognitive, life skills or skills oriented, multimodal, and family intervention approaches.

On average, appropriate correctional treatment has resulted, in recidivism reductions of 50% (Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990). For correctional treatment to be appropriate, it must take into consideration the principles of risk, need, and responsivity (Andrews, Bonta, & Hoge, 1990). The risk principle refers to the fact that offenders at a higher risk to reoffend benefit most from intensive service, while low risk offenders do well with only minimal intervention (Andrews, Bonta et al., 1990). According to the need principle, correctional treatment which targets criminogenic needs (e.g., drug abuse), as opposed to noncriminogenic needs (e.g., self-esteem), is associated with reductions in recidivism (Andrews, Bonta et al., 1990). In contrast, the responsivity principle of effective service is concerned with facilitating the acquisition of prosocial skills by matching treatment to offenders' learning styles and abilities (Andrews, Bonta et al., 1990). Typically, behavioural, cognitive-behavioural, and social learning approaches have been shown to be the preferred modes of treatment for offenders (Andrews & Bonta, 1994; Zamble & Porporino, 1990). Finally, responsivity also includes taking into consideration other elements that increase the likelihood of treatment success (Andrews, 1995; Andrews, Bonta et

al., 1990), like increasing motivation as discussed in the current study.

Effective Drug Treatment

Effective drug treatment can result in significant decreases in drug abuse and recidivism (Hawkins, Jenson, Catalano, & Wells, 1991; Higgins, Budney, Bickel, Hughes, Foerg, & Badger, 1993; Lockwood, Inciardi, & Surratt, 1997; Millson, 1996; Millson, Weekes, & Lightfoot, 1995; Wexler, Falkin, & Lipton, 1990). Behavioral treatment for substance abuse has received the most experimental support (Miller & Hester, 1986a). Successful individual and group treatment for drug abuse can combine behavioural therapy with cognitive therapy (Beck, Wright, Newman, & Liese, 1993) and relapse prevention (Marlatt & Gordon, 1985).

By examining controlled empirical studies, Miller and Hester (1986a) have identified several effective approaches for mainstream alcohol abusers: social skills training, behavioral marital therapy, behavioral self-control training, and the strategy of stress management. Nine treatment approaches have been identified as particularly relevant for substance abusing offenders, including the following: assertion training, controlled drinking strategies, employment training, methadone maintenance, provision of aftercare, problem solving skills training, training in recognizing high risk

situations, relapse techniques, and social skills training (Correctional Service of Canada, 1996).

Miller, Brown et al. (1995) used a meta-analytic approach which takes into account the methodological quality of outcome studies in order to determine the most effective treatment approaches for alcohol abuse. Positive cumulative evidence scores indicated that the most effective treatment modalities from highest to lowest include the following: brief intervention (+239), social skills training (+128), motivational enhancement approaches (+87), community reinforcement approach (+80), behaviour contracting (+73), nausea aversion therapy (+34), client centered therapy (+34), relapse prevention (+34), self-help manuals (+33), cognitive therapy (+22), covert sensitization (+18), behavioural marital/family therapy (+15), and disulfiram (+09). Therefore, there is not simply one best approach, but a menu of effective alternatives for substance abuse treatment (Miller, Brown et al., 1995).

Length of treatment has also been shown to be related to treatment success. Empirical evidence shows that some briefer interventions for substance abuse are no less effective (Heather, 1995; Miller & Rollnick, 1991) and may be more effective compared to longer, more costly programs (Holder, Longabaugh, Miller, & Rubonis, 1991; Miller,

Brown et al., 1995). In particular, controlled studies have shown no advantage of long intensive residential treatment programs over less costly, non-residential programs (Holder et al., 1991; Miller & Hester, 1986b; Sobell & Sobell, 1993).

Despite the accumulating research on effective substance abuse treatment (Miller & Hester, 1986a; Holder et al., 1991), the most common treatments applied in North America are not supported by research (Miller, 1991; Miller, Brown et al., 1995; Miller & Hester, 1986a; Peele, 1989) and can be referred to as belief based approaches (Sobell & Sobell, 1993). Among others, such substance abuse treatments include the following: detoxification, Alcoholics Anonymous, milieu therapy, and confrontational approaches used to challenge denial in group and individual counseling settings (Miller, 1991).

Unfortunately, results of effectiveness research are also largely being ignored in the area of correctional treatment (Weekes, 1997). Few treatment programs for offenders in the United States are intense enough to significantly reduce recidivism; in fact, most institutions only offer Alcoholics, Narcotics, or Cocaine Anonymous meetings, drug education, or occasional counseling (Falkin, Wexler, & Lipton, 1992; Murray, 1992).

Intensive corrections-based substance abuse programming, however, is often available in the form of therapeutic communities (TC's) with typical durations of 9 to 12 months. In spite of a problem with dropouts, correctional TC's have shown success (Field, 1989; Lockwood et al., 1997; McCusker, Garfield, Lewis, & Frost, 1997; Wexler et al., 1990). For example, the Cornerstone program is a TC that is run in a hospital setting separate from the general prison population. The program is very structured with clear rules and consequences and the treatment provided is intensive and addresses both substance abuse problems and criminal behaviour (Field, 1989). Outcome results show that re-admission rates for offenders who completed the Cornerstone Program were found to be consistently lower than the re-admission rates of noncompleters (Field, 1989). This finding, although statistically significant, is problematic because the difference may only be due to the differences between the two samples compared in the study (completers versus noncompleters).

Another TC, the Stay'n Out Program, has been studied in a controlled trial (Wexler et al., 1990). Stay'n Out is a highly structured program with a hierarchy of job levels and a system of rewards for good behaviour. The therapeutic intervention consists of encounter therapy,

educational seminars, and individual counseling. Follow-up results from the Stay'n Out Program have indicated that offenders who complete the program show greater reductions in recidivism compared to offenders in counseling, milieu therapy, or in no drug treatment (Wexler et al., 1990).

Lockwood et al. (1997) also described two effective TC's: an institutional program called KEY and a community-based program called CREST. KEY is a typical TC for incarcerated offenders, while CREST is a work-release TC which combines structured drug treatment with a work-release program. In their study, Lockwood et al. randomly assigned offenders to CREST or to a normal work-release program (control condition) for six months. Results showed that in comparing treatment to no treatment, about half of the comparison group reported criminal activity at the six-month follow-up, while only 14% of the TC group reported criminal activity (Lockwood et al., 1997). In addition, when the experimental condition was divided into offenders who were in both TC's versus those who were in only CREST, six-month follow-up results showed that only 6% of the KEY-CREST offenders reported drug use, compared to 20% of the CREST participants, and 45% of the comparison group (Lockwood et al., 1997).

Empirical results have shown, however, that shorter, modified TC's are just as effective as longer, standard TC's. Using a sample of predominantly offenders in a residential setting, McCusker et al. (1997) compared a standard 6 or 12 month TC to a 3 or 6 month modified TC.

The modified TC included training in relapse prevention where the emphasis was on building skills to cope with lapses and learning how to prevent relapses (McCusker et al., 1997). Results showed no differential effect of treatment modality: there were no significant differences of amount, frequency, or type of drug use at the 6 month follow-up (McCusker et al., 1997). In short, the three-month modified TC was as effective as the longer 6 or 12 month TC's.

To date there have been no comparative studies between TC's and even shorter, cognitive-behavioral programs. Interventions that are too long and too expensive for today's government fiscal restrictions should only be utilized if shorter, more cost-effective programs do not work (Sobell & Sobell, 1993). Indeed, there are shorter, cognitive-behavioural treatment programs that take into account the factors of risk, need, and responsivity, and that effectively reduce offenders' post-treatment substance abuse and post-treatment rates of recidivism (Hawkins et al., 1991; Husband & Platt, 1993;

Millson et al., 1995; Millson, 1996; Pelissier & McCarthy, 1992; Vigdal, Stadler, Goodrick, & Sutton, 1980).

For example, Vigdal et al. (1980) provided a six-week pre-release correctional program for problem drinkers based on social learning theory and skills training. Vigdal et al. randomly allocated 90% of selected offenders to treatment, while the other 10% were placed in the control group. Social skills training included behavioural rehearsal, modeling, and videotaped playback of high-risk situation roleplays. A total of 33 offenders in the experimental group and 15 offenders in the control group were located at 3-, 6-, and 12-month follow-ups. Results showed that the experimental group reported drinking less compared to controls at all follow-ups and this difference was significant at six months (Vigdal et al., 1980). Data indicated that the experimental group maintained gains on several variables, while the control group consistently deteriorated (Vigdal et al., 1980).

Hawkins et al. (1991) examined the effects of an intensive, 10-week cognitive-behavioural skills training program for juvenile offenders that focused on increasing skills for avoiding and refusing alcohol and drugs. Training on 17 of 31 standard roleplays was achieved using instruction, modeling, discussion, and feedback. The

experimental group (n = 69) received the 10-week program in addition to standard treatment which consisted of milieu therapy, group treatments, individual counseling, education, and behavioural skills training. The control group (n = 72) received standard treatment only. Results showed that offenders in the experimental condition had significantly higher post-test scores than controls on ratings of drug use avoidance, problem solving, and self-control performance with the 17 trained roleplays. Significant differences between the groups also occurred for the other 14 untrained roleplay situations; the skills learned in the program were generalized to novel high-risk situations.

Millson et al. (1995) measured substance abuse treatment performance and recidivism with a federal correctional sample. The Offender Substance Abuse Pre-treatment (OSAP) program is a multifaceted, cognitive-behavioural group treatment which is completed in 26, 3 hour sessions (Lightfoot, 1993; Millson et al., 1995). Two facilitators lead groups of 8 to 10 offenders with moderate to substantial, and sometimes severe, substance abuse problems (Lightfoot, 1993; Millson et al., 1995). The OSAP program sessions include modules on drug and alcohol education, skill acquisition, self-management training, and relapse prevention training (Lightfoot,

1993). The effectiveness of the OSAP program was evaluated using a sample of 324 federal offenders at Bath Institution (Millson et al., 1995). From pre- to post-program, offenders significantly improved on an average of seven out of eight instruments measuring substance abuse knowledge. Offenders' scores were then modified into a performance index, which represented how well they did in the program. At the 15 month follow-up, offenders who evidenced the highest level of performance during treatment were significantly less likely to be readmitted and reconvicted following release compared to poor performers (Millson et al., 1995). The OSAP program is not only effective treatment, it is also appropriate treatment. It is targeted to offenders who are higher in need and higher in risk. In addition, responsivity is addressed in the OSAP program because it uses behavioural, cognitive-behavioural, and social learning approaches, all of which are the preferred modes of treatment for offenders (Andrews & Bonta, 1994; Zamble & Porporino, 1990).

A second study also compared results of an incarcerated sample who completed the OSAP program, a disease-based substance abuse treatment program, or no programming (Millson, 1996). Post-release performances were compared between the three groups, which each

consisted of 45 offenders. Eight month follow-ups showed that readmission rates were the lowest in the OSAP program, followed by the disease-based program, and then followed by the control group (Millson, 1996). Additional analyses revealed that after nine months post-release, offenders from the disease-based program actually performed no better than controls. In short, cognitive-behavioural programs of 5 to 10 weeks duration have proven effective compared to controls and traditional treatment (Hawkins et al., 1991; Millson et al., 1995; Millson, 1996; Vigdal et al., 1980).

Given the effectiveness of research-based substance abuse treatments, why are the predominant treatment approaches in mainstream and correctional substance abuse treatment not supported by research? Many treatment providers instead follow a belief-based approach called the disease model.

Traditional Drug Treatment

Along with alcohol abuse, drug abuse has traditionally been viewed as a disease (Weekes, Moser & Langevin, 1997). According to the disease model, "addicts" and "alcoholics" are not responsible for their problems because they are powerless to control their behaviour due to physiological forces (Marlatt, 1985; Peele, 1989). In addition, they must be dependent on

others on order to change (e.g., AA meetings, doctors, therapists; Marlatt & Gordon, 1985). The conceptualization of substance abuse as a disease has received support from popular self-help approaches like Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA; Jellinek, 1960).

AA is highly regarded by many clinicians (Metzger, 1988), even though reviewers have found that AA is not effective compared to other treatments or to controls (Miller, 1991; Miller & Hester, 1986a; Peele, 1989). Emrick, Tonigan, Montgomery, & Little (1993) have highlighted a variety of problems with the limited research on Alcoholics Anonymous, including the following: the use of retrospective and cross-sectional studies, the use of pre-experimental designs, the absence of pre- and post-testing, little use of reliable instruments, and a degree of vagueness of the various concepts being measured (e.g., AA affiliation can mean that an individual attended one meeting, 30 meetings, or thousands of meetings). Interestingly, virtually no data exists on the effectiveness of NA or CA (Gerstein, 1992).

Central to disease approaches like AA, NA, or CA are the beliefs that one is powerless over drugs and/or alcohol and that substance use is progressive over time; eventually it leads to more and more problematic usage,

and finally addiction (Jellinek, 1960; Metzger, 1988). Other convictions held by proponents of the disease model include the following: the practice of labeling substance abusers as "alcoholics" and "addicts"; the contention that denial is an inherent characteristic of substance abusers; and the belief that confrontational techniques are not only appropriate, but necessary (DiCicco, Unterberger, & Mack, 1978).

Researchers have concluded, that there is a lack of convincing evidence that drug or alcohol abuse constitutes a disease (Peele, 1989; Weekes et al., 1997). Proponents of self-control approaches recognize that excessive habits can result in diseases, but that does not mean that substance abuse itself is a disease (Marlatt & Gordon, 1985). In addition, there is evidence to suggest that the acceptance of the conceptualization of drug or alcohol abuse as a disease actually leads to more negative treatment outcomes (Miller, Westerberg, Harris, & Tonigan, 1996; Millson, 1996). For example, as briefly described earlier, post-release performances were compared between substance abusing offenders who completed a disease-based substance abuse treatment program (Recovery program), a research-based, cognitive-behavioural treatment program (OSAP program), or no treatment during incarceration (Millson, 1996). Eight month follow-ups showed that

readmission rates increased from lowest in the cognitive-behavioural treatment program, to higher in the disease-based program, and to highest in the control group (Millson, 1996). Interestingly, however, additional analyses showed that after nine months post-release, offenders from the disease-based program actually performed no better than the controls. In short, behavioural programs have been found to be more effective than disease-based programs with both alcohol and drug samples (Higgins et al., 1993; Millson, 1996).

Contrary to the view that substance abusers are powerless over alcohol and drugs, research has shown instead that substance abusers are in control of their behaviour (Miller, 1985; Miller & Hester, 1995; Peele, 1989; Stockwell, 1991). In one particular study, results did not show a loss of control while drinking; instead, findings indicated that alcohol abusers aim for a desired state of consciousness when they drink (Mello & Mendelson, 1971). In fact, as opposed to endorsing the disease model, most effective substance abuse treatment reviewed in the current paper has followed self-control approaches. As the name would suggest, self-control approaches are centered around the premise that the client is responsible for exercising control over his or her behaviour (Heather, Miller, & Greeley, 1991). According to self-control

models, individuals are not responsible for having acquired their problem behaviours; however, they are capable of controlling their behaviour and are responsible for making changes (Marlatt, 1985; Peele, 1989). For example, in treating substance abuse, the focus of social learning theory is to alter the relationship between the individual and the environment by learning to avoid people and situations associated with substance use, learning a variety of coping skills, and engaging in cognitive restructuring in order to decrease positive expectancies (Miller & Hester, 1995). Another example is the biopsychosocial model which is a multifaceted approach to substance abuse that takes into consideration biological, psychological and social factors in reducing the reinforcing aspects of the substance use, while increasing the reinforcing aspects of not engaging in the behaviour (Ogborne, 1997).

Empirical support is also lacking for the supposed progressive nature of substance abuse problems (Sobell & Sobell, 1993). Longitudinal studies of substance abuse have found that instead of an emergence of a progressive pattern, substance abuse is more frequently variable over time (Ogborne, 1997; Sobell & Sobell, 1993). Prospective longitudinal studies show that only 25% to 30% of alcohol abusers develop their problem progressively (Fillmore,

1988; Mandell, 1983), while more typical patterns of use show problematic usage intermingling with periods of abstinence and nonproblematic use (Clark & Cahalan, 1976; Pattison, Sobell, & Sobell, 1977). Other research has provided additional evidence against the progressive nature of substance abuse; it has been shown that most individuals who began using drugs and alcohol as adolescents grow out of this behaviour, rather than becoming adult substance abusers (Peele, 1987; Temple & Fillmore, 1986). Research with offenders has also provided evidence against progressivity; compared with less serious drug abusers, it has been found that individuals with the most serious substance abuse problems had initiated use at an earlier age, quickly escalated their levels of use, and from that time maintained their high levels of substance abuse (Vanderburg, Weekes, & Millson, 1995).

The disease approach practice of labeling clients as "alcoholics" or "addicts", has not been found to enhance the therapeutic process (Miller & Rollnick, 1991; Peele, 1989). Research has actually shown a negative relationship between endorsing the self-label "alcoholic" and treatment outcome (Orford, 1973). In addition, since substance abuse can be more precisely measured on a continuum of problems (i.e., none, low, moderate, substantial, and

severe; Skinner, 1982), the use of two discrete categories by the disease model approach (i.e., problem versus no problem) is not valid or particularly relevant (Marlatt & Gordon, 1985; Sobell & Sobell, 1993; Weekes et al., 1997).

According to the disease model, individuals who are deemed by others as having a problem, but do not recognize themselves as having a problem, are frequently considered to be "in denial". In fact, denial has been cited as the most difficult problem with "alcoholics" (Bean, 1981). For these reasons, confrontational techniques have been regularly employed to confront this "denial" in substance abusers (DiCicco et al., 1978; Peele, 1989). However, the use of confrontational techniques is inappropriate (Miller & Rollnick, 1991; Rollnick & Morgan, 1995) both because they are ineffective compared to other individual and group therapies (Miller & Hester, 1986a) and because they have actually been found to produce negative outcomes (Lieberman, Yalom, & Miles, 1973). Different studies have found a direct relationship between the degree of therapist confrontation and the level of client resistance and treatment success (Miller, Benefield, & Tonigan, 1993; Miller & Sovereign, 1989; Patterson & Forgatch, 1985). Interestingly, most corrections-based therapeutic communities designed for serious substance abusers

routinely employ confrontational techniques to address denial (Field, 1989; Inciardi, 1996; Singer, 1996; Wexler et al., 1990).

A number of researchers argue that the concept of denial is not a significant issue with mainstream substance abusers (Miller & Rollnick, 1991) nor with substance abusing offenders (Weekes et al., 1997). Weekes et al. (1997) contend that substance abusing offenders as a group have few incentives to deny problems with drugs and alcohol and that offenders with more serious problems openly discuss their substance abuse. Indeed, research has shown that it is offenders with lower levels of problem severity that are more likely not to acknowledge their substance abuse problems (Weekes, Millson & Beal, 1994). Weekes et al. (1994) maintain that these offenders are not "in denial", but likely genuinely unaware of that their behaviour actually constitutes a problem.

Contrary to the disease model, Weekes et al. (1993) found that offenders with serious substance abuse problems had high levels of problem recognition and willingness to participate in treatment. Instead of denying their problems, Weekes et al. (1993) reported that as severity of offender substance abuse problems increased, their level of problem recognition also increased. More specifically, between 74% and 96% of offenders with

moderate to severe problems recognized that they had problems (Weekes et al., 1993). In addition, Weekes et al., (1993) found that most offenders with moderate to severe problems admitted that they needed help with their substance abuse; in particular, when asked if they felt if they needed treatment, the majority of offenders with more serious problems acknowledged that they "needed help" or "needed help badly" (Weekes et al., 1993). Therefore, in direct opposition to the disease model, offenders with more serious substance abuse problems are not likely to deny their problems; instead, they are more likely to recognize that they have a problem than are offenders with less serious substance abuse problems (Weekes et al., 1993; Weekes et al., 1994). These findings regarding problem recognition and willingness to participate in treatment are particularly relevant to the current study.

Weekes et al. (1997) maintain that "offenders recognize the existence of alcohol and other drug problems, recognize the need for treatment, and express their willingness to become involved in corrections-based substance abuse treatment" (Weekes et al., 1997, p. 29). However, Miller (1985) has noted that several research studies on substance abuse found no relationship between willingness to participate in treatment and actual participation or treatment outcome. In fact, the

combination of problem recognition and willingness to participate in treatment does not necessarily mean that clients are motivated for treatment (Miller, 1985; Miller & Rollnick, 1991; Weekes et al., 1997). Incarcerated offenders' motivation for treatment, for example, is likely affected by the potential external reinforcement of getting parole, placement at minimum security, or being granted temporary absences. A simple, traditional view of motivation in treatment as a characteristic of the client (Miller, 1983; Miller & Rollnick, 1991; Miller & Sanchez; 1994; Miller & Tonigan, 1996) does not take into account the full complexity of human motivation (Miller & Rollnick, 1991; Weekes et al., 1997). As will be discussed later in this dissertation, researchers have proposed that motivation is not a binary concept, whereby someone is motivated or not motivated, but a shifting continuum dependent on several factors like relationship interactions (i.e., between the client and therapist) or environmental influences (Miller, 1983; Miller & Rollnick, 1991; Miller & Sanchez; 1994; Miller & Tonigan, 1996). As a result, motivation can be viewed as "a state of readiness or eagerness to change, which may fluctuate from one time to another" (Miller & Rollnick, 1991, p. 14). An individual's readiness to change a particular behaviour can provide useful information about the change process.

Readiness to Change

Prochaska and DiClemente (Prochaska, 1984; Prochaska & DiClemente, 1983; 1986) have developed the transtheoretical model which has provided a theoretical framework for readiness to change. Prochaska and DiClemente initially studied smoking behavior, but later determined that their theoretical concepts applied to a variety of problem behaviours, including substance abuse (Prochaska et al., 1994; DiClemente, Carbonari, Addy, & Velasquez, 1996). Prochaska and DiClemente found that individuals in treatment, or changing on their own, progress through the same five stages of change and utilize the same 10 processes of change (Prochaska & DiClemente, 1983; 1986). The latter component of the transtheoretical model, the processes of change, are defined later in this section. The stages of readiness for change, the primary component of the model, consist of the following stages: precontemplation, contemplation, preparation (once labeled determination), action, and maintenance.

Precontemplators have not yet considered change, do not even realize that they have a problem, and normally do not enter treatment unless they have been coerced by others. Individuals in the contemplation stage are ambivalent about changing and they are caught in a process

of considering change and rejecting it. Individuals in the preparation stage are in the process of deciding to take steps toward change, although they may still experience ambivalence (DiClemente, 1991). Those in preparation usually intend to take action in the following month and have been unsuccessful with action in the previous year (Prochaska, DiClemente, & Norcross, 1992a). Individuals in the action stage have already begun actions to bring about change. Individuals usually remain in the action stage for three to six months before they progress into maintenance (DiClemente, 1991). Those in the maintenance stage not only have to sustain changes made in the action stage, but also have to try to avert a relapse (Marlatt & Gordon, 1985).

The stages of readiness for change have been reliably measured for problem drinking using the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996) and the Readiness to Change Questionnaire (RCQ; Rollnick, Heather, Gold & Hall, 1992). Readiness for change for a variety of other behaviours has also been examined using a generic change instrument called the University of Rhode Island Change Assessment (URICA; McConaughy, Prochaska, & Velicer, 1983; Prochaska & DiClemente, 1992).

According to research on readiness for change, how individuals respond to various types of treatment depends on their stage of change. Skills-based programs are most effective for clients entering treatment in the action stage (Heather, Rollnick, Bell, & Richmond, 1996) and may also be effective for clients in the maintenance stage (DiClemente, 1991) or in the preparation stage. However, when clients enter treatment in precontemplation and contemplation or perhaps even preparation, the intervention should focus more on building motivation (DiClemente, 1991; Heather et al., 1996; Miller & Rollnick, 1991).

The processes of change are the strategies that move individuals through the stages of change (DiClemente, 1993). The 10 processes of change were identified by a comparative analysis of 29 psychotherapies (Prochaska, 1984). The 10 processes of change (see Table 1 for descriptions) which make up the secondary contribution of the transtheoretical model are divided into two groups: cognitive/experiential processes (consciousness raising, dramatic relief, environmental reevaluation, social liberation, and self-reevaluation) and behavioural processes (helping relationship, stimulus control, counter-conditioning, reinforcement management, and self-liberation; Prochaska & DiClemente, 1986). Cognitive/

Table 1

Processes of Change (Adapted from Perz et al., 1996)

Process	Description
<u>Experiential</u>	
Consciousness-raising	Increasing awareness of oneself and one's problem
Dramatic relief	Emotional arousal concerning one's problems which moves one toward making a change
Self-reevaluation	Changing evaluations of oneself and one's problem
Environmental reevaluation	Changing views of the impact of one's problem on others
Social liberation	New alternatives in the environment that can facilitate one's efforts to change
<u>Behavioural</u>	
Self-liberation	Increasing commitment and new options for oneself
Counterconditioning	Changing one's reactions to stimuli by countering them
Stimulus control	Restructuring one's surroundings in order to minimize the possibility of the problem occurring
Reinforcement management	Changing one's reinforcers and contingencies for behaviours
Helping relationships	Supportive relationships that help one facilitate change

experiential processes are typically used in the earlier stages of change, while behavioural processes are most often used by individuals in the more advanced stages of change (Perz, DiClemente, & Carbonari, 1996).

Determining process use has clinical significance because process use is an indicator of how changes occur, while stage of change can only indicate when changes occur (Prochaska, DiClemente, & Norcross, 1992b). In this way, process use measurement provides a verification of stage allocation. Using variants of the Process of Change Scales by DiClemente and colleagues, process use has been reliably measured for a variety of problem behaviours including smoking (Prochaska, Velicer, DiClemente, & Fava, 1988), alcohol abuse (DiClemente et al., 1996), and drug abuse (Tejero, Trujols, Hernández, Pérez de los Cobos, & Casas, 1997). The Process of Change Scale for Substance Use (POC-SU; DiClemente et al., 1996) has been found to be a reliable instrument for identifying process use at each of the stages of change.

Process use has been found to be different depending on an individual's stage of change (Prochaska & DiClemente, 1986). Studies have found that precontemplators use 8 of the 10 processes of change significantly less than individuals in the other stages (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, &

Rossi, 1991). In treatment which takes into consideration both stages and processes of change, those individuals at various stages benefit most from change processes which can help them progress in the stages: precontemplators need consciousness raising; contemplators need to use dramatic relief, environmental reevaluation, and social liberation; those in preparation need to use self-reevaluation and self-liberation; and those in action and maintenance need to use reinforcement management, helping relationships, counterconditioning, and stimulus control (Prochaska & DiClemente, 1992a).

Results from smoking cessation studies show that experiential process use is at its highest in the contemplation stage, while behavioural processes are used most in action and maintenance (Perz et al., 1996; Prochaska, Velicer, DiClemente, Guadagnoli, & Rossi, 1991). Perz et al. (1996) examined patterns of optimal process use with 388 individuals in smoking cessation and found that using experiential processes with clients in contemplation and preparation was associated with good treatment outcomes. Likewise, using behavioural processes with clients in the action stage was also associated with good treatment outcomes (Perz et al., 1996). In summary, measuring processes of change along with stages of change can provide valuable information about an individual's

readiness for change.

Decision making, or an individual's analysis of the pros and cons of a particular behaviour, has been identified as a major component in behaviour change (Janis & Mann, 1977) and has also been incorporated into Prochaska and DiClemente's model in the form of a decisional balance sheet. Research has shown that there is a shift between pros and cons of a target behaviour as an individual progresses through the stages of change (Prochaska, 1994; Prochaska et al., 1994). More specifically, individuals in the precontemplation stage endorse more cons of changing a problem behaviour than pros (Prochaska et al., 1994). As individuals progress in the stages of change, this balance shifts; typically, when individuals have advanced to the action stage they endorse more pros of changing the target behaviour as compared to cons (Prochaska et al., 1994).

Interactions between stage of change and problem severity can also provide useful information about readiness for change. For example, Weekes et al. (1994) used the experimental treatment version of the RCQ and a measure of alcohol severity with 104 federal offenders in order to determine their readiness to change alcohol problems. Results showed that none of the offenders who had intermediate to severe alcohol problems were in the

precontemplation stage of change (Weekes et al., 1994). In other words, offenders with serious alcohol problems had an awareness of these problems; they had some level of problem recognition. Interestingly, results also showed that a third of offenders with low level alcohol problems scored in the precontemplation stage, suggesting that these problem drinkers do not perceive their alcohol use to be a problem (Weekes et al., 1994). It has been previously noted that weak motivation for treatment frequently accompanies high need status (Andrews, 1995). In this study, serious substance abusers may be aware of their problem and may be willing to participate in treatment, yet this does not mean that they are motivated to change (Weekes et al., 1994). At the same time, the third of offenders with lower level substance abuse problems are not only likely to be unmotivated for change, they are not even aware that they have a problem.

As previously mentioned, the combination of problem recognition and willingness to participate in treatment does not necessarily mean that clients are motivated for treatment (Miller, 1985; Miller & Rollnick, 1991; Weekes et al., 1997). Increasing intrinsic motivation to change before participating in treatment is important with substance abusers (Marlatt & Gordon, 1985) and particularly with substance abusing offenders (Farabee,

Nelson, & Spence, 1993; Katz, 1985), since higher motivation for change is associated with better treatment outcomes (Project Match Research Group, 1997). An intervention is needed that can directly influence motivation to change.

Motivational Interviewing

Motivational interviewing (Miller, 1983, Miller & Rollnick, 1991) is an approach to interacting with clients which has become increasingly popular in recent years within mainstream substance abuse treatment and also within offender population treatment (Serin & Kennedy, 1997). W. R. Miller (1983) coined the term motivational interviewing for a commonsensical style of counselling that he used successfully to motivate problem drinkers for change. "Motivational interviewing is a directive, client-centered counselling style for eliciting behaviour change by helping clients to explore and resolve ambivalence" (Rollnick & Miller, 1995, p. 326).

Motivational interviewing uses Prochaska and DiClemente's model as it's underlying theoretical framework.

Motivation is considered as a fluctuating state of readiness or eagerness to change dependent on several factors like relationship interactions (i.e., between the client and therapist) or environmental influences (Miller, 1983; Miller & Rollnick, 1991; Miller & Sanchez; 1994;

Miller & Tonigan, 1996).

Motivational interviewing is divided into two phases: building motivation and strengthening commitment to change. It has applications for clients in all stages of change since motivation is viewed as a state that can waver throughout the changing process; however, motivational interviewing is particularly useful for clients in the precontemplation stage or the contemplation stage, as compared to skills-based approaches which are tailored to clients in the action stage (Miller & Rollnick, 1991).

Ambivalence is a problem for many drug abusers (Kleber, 1989) and resolving ambivalence is a key function of motivational interviewing (Miller & Rollnick, 1991). This ambivalence is a balance of two ways of feeling about the problem behaviour (Miller, 1983), whereby an individual see-saws between resisting and engaging in a behaviour. These individuals are caught in an approach-avoidance conflict: "they want to change, and they don't want to" (Miller & Rollnick, 1991, p. 37). Attachment to a problem behaviour makes it difficult for the individual to resist or reduce that behaviour. A decisional balance sheet, where the pros and cons of stopping and continuing the problem behaviour can be compared, may be useful to illustrate ambivalence and may also assist in its

resolution (Miller & Rollnick, 1991).

Expressing empathy, developing discrepancy, avoiding argumentation, rolling with resistance, and supporting self-efficacy have been described by Miller and Rollnick (1991) as the five general principles of motivational interviewing (see Appendix A). A number of strategies can be used with motivational interviewing to effectively build client motivation and strengthen commitment to change (see Appendix B). The "spirit of motivational interviewing" encompasses several key points described by Rollnick and Miller (1995). First, the therapeutic relationship is viewed more as a partnership rather than in the capacity of expert and recipient; motivational interviewing is an interpersonal style as opposed to a set of techniques to be used on clients. Second, in order to incite behaviour change, therapists elicit intrinsic motivation from clients instead of imposing external contingencies. Third, the therapist facilitates the expression of both sides of the ambivalence and directs the client toward change; however, it is the client who is ultimately responsible for the actual resolution of his or her ambivalence. Fourth, readiness to change is not a client trait, but a fluctuating product of the interaction between the client and therapist. Finally, the use of direct persuasion, confrontation, argumentation, or

labelling should be avoided as a general rule with motivational interviewing.

Motivational interviewing is a cost-effective alternative to longer, belief-based treatments (Holder et al., 1991). Motivational interviewing was developed in response to confrontational approaches that were and are still being used by therapists who endorse the disease model (Miller & Rollnick, 1991). In contrast to the disease approach, denial is seen, not as a characteristic of the client, but as a product of the interaction between the therapist and the client (Miller, 1983; Miller & Rollnick, 1991). Research shows that how a therapist interacts with a client can significantly affect a client's motivation for change (Miller, 1985; Miller & Rollnick, 1991) and treatment success (Miller & Sovereign, 1989). For example, when clients are randomly assigned to confrontational counseling or motivational interviewing, confronted clients demonstrate higher levels of resistance (arguing, interrupting, denying, or ignoring) than those in the motivational interviewing condition (Miller & Sovereign, 1989). However, even with motivational interviewing clients may still display resistance at the beginning of a therapeutic relationship or when the therapist uses strategies meant for individuals further along in the stages of change. If this does occur, it is

important for the therapist to respond by using reflection, reframing, or affirmation and then proceed by using more stage appropriate strategies (Miller & Rollnick, 1991).

Motivational interviewing has now been used with several problem behaviours and conditions, besides problem drinking for which it was originally formulated, including: smoking (Rollnick, Butler, & Stott, 1997), cardiovascular rehabilitation after heart attacks (Miller, personal communication, October 6, 1997), diabetes (Stott, Rollnick, Rees, & Pill, 1995; Trigwell, Grant, & House, 1997), pain management (Jensen, 1996), risk of HIV infection (Baker & Dixon, 1991), and sex offending (Garland & Dougher, 1991; Kear-Colwell & Pollock, 1997; Mann & Rollnick, 1996). Of particular relevance to the current thesis is that motivational interviewing has been used for over a decade in combination with interventions for drug abuse (Baker, Boggs, & Lewin, 2001; Daley, Salloum, Zuckoff, Kiriscit, & Thase, 1998; Easton, Swan, & Sinha, 2000; Harper & Hardy, 2000; Schneider, Casey, & Kohn, 2000; Stephens, Roffman, & Curtin, 2000; Stotts, Schmitz, Rhoades, & Grabowski, 2001; Swanson, Pantaloni, & Cohen, 1999; Saunders, Wilkinson & Allsop, 1991; Saunders, Wilkinson & Phillips, 1995; van Bilsen, 1991; van Bilsen & van Emst, 1986, 1989). The focus of the current study

will be on building motivation and strengthening commitment to changing drug abuse.

Effectiveness of motivational interviewing

A number of descriptive reports on motivational interviewing detailing intervention content have been published including those which have dealt with the concerns of young people (Tober, 1991), pain management (Jensen, 1996), severe alcohol dependence (Allsop & Saunders, 1991), drug use (Saunders et al., 1995; van Bilsen, 1991; van Bilsen & van Emst, 1986, 1989), risk of HIV infection (Baker & Dixon, 1991), and sex offending (Garland & Dougher, 1991; Mann & Rollnick, 1996). These reports are beneficial for treatment in that they provide a discussion of appropriate techniques for varying populations; however, with regards to research, apart from minimal attempts to describe partial case studies, no statistical results have been presented. As a result, these reports are not particularly useful for examining treatment effectiveness.

Studies presenting empirical results have shown motivational interviewing to be a relatively effective intervention (Baker et al., 2001; Bien, Miller, & Boroughs, 1993; Brown & Miller, 1993; Daley et al., 1998; Dench & Bennett, 2000; Easton et al., 2000; Ginsburg, 2000; Harper & Hardy, 2000; Heather et al., 1996; Marlatt

et al., 1998; Miller, Sovereign, & Krege, 1988; Monti et al., 1999; Rollnick, Heather, & Bell, 1992; Saunders et al., 1995; Schneider et al., 2000; Sellman, Sullivan, Dore, Adamson, & MacEwan, 2001; Senft, Polen, Freeborn, & Hollis, 1997; Stephens et al., 2000; Stotts et al., 2001; Swanson et al., 1999). Only one study reportedly failed to find significant differences in effectiveness between motivational interviewing and a control group (Kuchipudi, Hobein, Flickinger, & Iber, 1990). Kuchipudi et al., randomly assigned 114 difficult to treat alcoholic patients (who had been diagnosed with ulcer, cirrhosis of the liver, or pancreatitis) either to a three session motivational intervention or to a control group. Kuchipudi et al. failed to find a significant difference in sobriety between the groups at 10 to 16 weeks after discharge.

The lack of success of motivational interviewing in this study may have been due to the fact that the clients, as indicated by the authors, were difficult-to-treat and had been given poor prognoses. In addition, clients had been allowed to participate intermittently in the study. As a result, very few participants had completed all of the experimental segments. The authors of the Kuchipudi et al. (1990) study may also have been expecting too much from the participants when they required nothing less than

sobriety for treatment success, especially when each of the clients had been drinking heavily up until their hospital admission. Change is typically not an all-or-none process where individuals with severe enough problems with alcohol to have gastrointestinal disease change into completely abstinent individuals overnight (Prochaska et al., 1992a). Clients may have moved up on the stages of change (e.g., from precontemplation or contemplation to preparation) as a result of the motivational interviewing. However, it is impossible to know whether or not any progress in the stages was made in the experimental or control groups because readiness for change was not assessed in this study. It is also interesting to note, that Rollnick & Miller (1995) indicated that the intervention provided by Kuchipudi et al. (1990) was not motivational interviewing as it violated some of the central characteristics of the approach.

Motivational Interviewing with Alcohol Abusers

Various controlled studies which successfully utilized motivational interviewing with problem drinkers could also have been more rigorous with minor methodological adjustments. For example, Miller et al., (1988) provided motivational interviewing to 42 problem drinkers who were divided into three different experimental groups in order to test an assessment

instrument called the Drinker's Check-up. Each group was administered the two hour Drinker's Check-up assessment followed later by a one hour motivational interview (Miller et al., 1988). Participants in Group A did their assessment the following week and feedback session one week later, Group B received identical treatment as Group A except that they also received a list of resources to assist them in their area, and participants in Group C were placed on a six-week waiting list. Results showed that Group C showed no changes in behaviour during the waiting period. At six weeks after the feedback interview there was a significant reduction in all groups in the amount of alcohol consumed and these differences were still present at the 18-month follow-up. Although this study may provide some initial empirical support for the effectiveness of motivational interviewing, results are limited by small sample size and ambiguity as to whether the motivational interview or the assessment itself initiated subject change.

Brown and Miller (1993) used motivational interviewing as a prelude to treatment in order to increase treatment responsiveness. They tested the effectiveness of motivational interviewing in a residential treatment setting with 14 patients compared to 14 controls (Brown & Miller, 1993). During the

motivational interview therapists provided personal feedback, used empathy and reflective listening, and encouraged participants to continue with the hospital treatment group program (Brown & Miller, 1993). The motivational interviewing condition resulted in increased treatment participation as rated by therapists who were blind to group assignment (Brown & Miller, 1993). In addition, those in the motivational interviewing condition had lower post-treatment alcohol consumption at the three-month follow-up (Brown & Miller, 1993).

Some limitations of this study are the small sample size, the lack of random assignment (participants were divided on an alternating basis), and the lack of an interview control condition. Inclusion of an interview control condition could have reduced the likelihood that positive outcomes were not merely the result of the extra attention given to the experimental group. Client improvement had been based on therapist reports of increased participation and follow-up alcohol consumption. Inclusion of readiness for change measures could have provided additional useful information with regards to clients' progress through treatment.

Bien et al., (1993) randomly assigned 32 veteran administration outpatients to standard treatment for substance abuse (consisting of a weekly therapy group) or

motivational interviewing plus standard treatment. Outpatients in both conditions underwent two hours of assessment and a one-hour session of either a motivational interview or a control interview. At the three month follow-up outpatients in the motivational interviewing condition had consumed significantly less total standard drinks, had lower blood alcohol levels, and had more days abstinent compared to controls (Bien et al., 1993). However, after six months these differences were no longer significant.

This study is somewhat of a methodological improvement over Brown and Miller (1993) in that Bien et al., (1993) used random assignment and included an interview control condition. However, as will be discussed later in this paper, this interview control was not entirely a control condition. There is also the problem of small sample size. Only 23 research participants could be located as compared to the original 32 participants for the six-month follow-up. In addition, as acknowledged by the researchers, since there was only one therapist in the study the treatment effects could possibly be attributed to characteristics of the therapist. The lack of inclusion of measurement for readiness for change is unfortunate because information on the participants' stages of change before treatment, after

treatment, and at both three and six month follow-ups could have shown how clients progressed through the stages of change at the different testing periods. Readiness for change information could have helped determine whether individuals in the experimental group became stagnant in their stages and/or relapsed, or if those in the placebo condition caught up to the experimental group in the three months since the first follow-up. However, without this information, one can only guess at the implications of nonsignificant findings between the groups at the six-month follow-up.

Heather et al., (1996) presented a methodologically precise study which had also been outlined by Rollnick, Heather, Gold, & Bell (1992). Both research reports had presented results of 174 non help-seeking heavy drinkers in a medical setting assigned to a motivational interviewing condition, a skills-based counseling condition, or a control group consisting of regular hospital care. Individuals were given the RCQ as part of the assessment and they were deemed ready to change if the RCQ indicated that they were in the action stage of change. Clients were categorized as not ready to change if they were in the stages of precontemplation, contemplation, or preparation (Heather et al., 1996). Clients in both the experimental conditions received 30 to

40 minutes of counseling after assessment (Heather et al., 1996). Results showed that those who had received either experimental condition had decreased their alcohol consumption six months later (Heather et al., 1996). In addition, at the six month follow-up participants in the motivational interviewing group who had been less motivated for change (in the precontemplation, contemplation, or preparation stages) decreased their alcohol intake significantly more than those in the skills-based counseling group (Heather et al., 1996). However, for more motivated participants there was no difference in outcome between the experimental groups (Heather et al., 1996).

The methodology and results of this study are particularly relevant to the current proposal. Unlike in the other studies using motivational interviewing, participants in this study were non-help seeking, yet they were still able to benefit from motivational interviewing regardless of their stage of readiness for change. Offenders to be targeted in the proposed study are in a similar situation in that they will not be wholly voluntary in their treatment participation. Participants in the Heather et al. (1996) experimental condition benefited from the motivational interviewing regardless of their readiness to change, whereas skills based counseling

was appropriate for those in the action stage, but less effective for individuals in the stages of precontemplation, contemplation, and preparation. Therefore, motivational interviewing alone or in combination with skills-based counseling is the best recipe for changing problem drinking (Miller & Rollnick, 1991). It is proposed in the current study that this combination of intervention with incarcerated offenders (motivational interviewing plus an institutionally-based substance abuse treatment program) will also be the most effective means of changing drug abusing behaviour.

Senft, Polen, Freeborn, and Hollis (1997) randomly assigned 516 moderate to heavy drinkers to a 30 second-advice (by a clinician) and 15-minute motivational intervention (by a counselor) or a control condition of usual care. Hazardous drinkers were identified by their responses on a questionnaire. Unfortunately, usual care was not defined in the study. The clinician's scripted advice included a statement of concern and a recommendation that the individual cut down on drinking. The counselors used principles of motivational interviewing and gave feedback, gave advice in the form of a menu of options, and encouraged self-efficacy. Follow-ups were completed by researchers blind to participant condition. At the six-month follow-up the experimental

participants reported significantly less total drinking and fewer drinking days. The self-reported fewer drinking days finding was found again at the 12-month follow-up.

Some criticisms of the Senft et al. (1997) study are that they used directional t-tests and did not report the results of two-tailed tests. This is of concern because, as indicated by the authors, the effects were modest and presentation of significant two-tailed test results could have strengthened their results. In addition, the nature of the control group was not well defined in the study. Advantages were that there was large sample size, random assignment, collaterals that verified self-reports, and follow-up researchers who were blind to participant condition. Interestingly, as with the Heather et al. (1996) study, participants were not necessarily motivated for treatment. Significant results, even modest ones, of such a brief intervention with individuals who were not necessarily motivated to address their alcohol problem is an important finding. The authors (Senft et al., 1997) discuss the importance of including additional maintenance sessions of motivational interviewing in order to strengthen long-term results.

Marlatt et al. (1998) randomly allocated previously screened college students (160 men and 188 women) with drinking problems to a brief motivational intervention or

a no-treatment control condition. The brief intervention was delivered according to the principles of motivational interviewing and included a focus on feedback of the individual's drinking behaviour. One year after the intervention was delivered participants in the experimental group were mailed feedback from the 6- and 12-month follow-up assessments. At 6-month follow-up, there were significant improvements with the treatment group as compared to the control group on drinking less frequently and less quantity. These significant differences were maintained at the 2-year follow-up. This well-designed longitudinal study began with screening while participants were still in high school and continued through their college years. Advantages of the study were that there was a large sample size, random assignment, and collaterals were used to verify self-reports. The one drawback of this study was the possibility of a lack of generalizability to populations outside of a college setting.

Monti et al. (1999) randomly allocated 94 adolescents (67% of those approached) who had just been in an alcohol-related vehicle incident to receive motivational interviewing or standard care. The motivational interviewing session was 35 to 40 minutes in duration (including personal feedback on their assessment, an

information sheet on alcohol and driving, and a handout also given to the other condition). Standard care consisted of the provision of a handout on drinking and driving and treatment options over a five-minute period. Follow-ups were completed by researchers blind to participant condition. At the six-month follow-up, the experimental participants had significantly fewer incidences of drinking and driving, traffic violations, injuries related to alcohol use, and problems related to alcohol use. Motivational interviewing, therefore, resulted in harm reduction and not necessarily reductions in actual alcohol usage (Marlatt et al., 1999). The authors suggest that a maintenance session may have been useful to reduce actual drinking.

Drawbacks to the Marlatt et al. (1999) study included the high refusal rate and the lack of an interview control condition of the same duration as the motivational intervention. Significant differences could have been due to the time spent or interaction with the adolescents, rather than motivational interviewing itself. Also, results of this study were specific to the target population. Advantages of this study were the large sample size, random assignment, and verification of self-reports with DMV (Department of Motor Vehicle) checks.

Dench and Bennett (2000) randomly assigned 51 individuals to a two-session motivational interviewing or a two-session educational control condition before beginning of a 6-week cognitive-behavioural alcohol dependence program. The second session was 5-10 minutes in duration and consisted of a review of what was learned during the first session. Post-testing on readiness to change instruments was completed just following this second session. At one-week post-testing, those in the experimental condition had significant increases in problem recognition as compared to the control condition. At the second week of the program, the experimental group reported significantly decreased ambivalence and increased taking steps as compared to controls. After program completion, the experimental condition had significantly greater recognition scores as contrasted with controls. Treatment engagement was not affected by motivational interviewing and the authors hypothesize that the larger effect of the 6-week cognitive-behavioural treatment program may have masked these effects.

Disadvantages of the Dench & Bennett (2000) study include the size of the sample that dwindled to 15 in the experimental condition and 17 in the comparison condition before program completion. Also, the authors used a one-tailed test to examine changes in recognition at one-week

post-testing. It would have been interesting to see if the two-tailed results were also significant. Random assignment was a plus in this study. The authors recommend maintenance sessions of motivational interviewing in order to increase significance.

Ginsburg (2000) randomly assigned 85 federal offenders who were precontemplative or contemplative of problems with alcohol abuse to either a 90-minute motivational condition or a control condition. Offenders were pretested on a variety of readiness to change measures including the SOCRATES, the RCQ, and the URICA. Results showed that motivational interviewing precontemplators, as measured by the RCQ, had greater post-test contemplation scores as compared to control group precontemplators. Also, using the SOCRATES, the motivational interviewing group had significantly greater post-test recognition scores as compared to controls.

One disadvantage of the Ginsburg (2000) study is that in the significant findings reported with the RCQ the sample size was extremely small ($n = 4$ motivational interviewing and $n = 8$ controls). Findings with such a small sample are suggestive at best. Also, there was no interview control condition included in this study, and as a result it is unclear if motivational interviewing produced the significant effects or merely the attention

given to participants. Finally, the testing was completed without aid of blind researchers. In the current dissertation these potential disadvantages are controlled for by not conducting research with too small subsamples, by including an interview control condition, and by utilizing psychological interns to supervise testing. An advantage of the Ginsburg (2000) study was the use of random assignment.

Sellman et al. (2001) had participants complete an assessment and feedback/education session and then randomly assigned these mild to moderate alcohol-dependent individuals to a four-session motivational enhancement condition ($n = 42$), a nondirective listening control interview condition ($n = 40$), or a control condition with no further counseling ($n = 40$). Assessments of drinking were completed with a researcher who was blind to participants' conditions. Data on drinking was collected initially, after six weeks, and after six months. Results showed that motivational enhancement was significantly more effective at reducing heavy drinking at the six-month follow-up than the other two control conditions. The authors conclude that motivational enhancement therapy is a "value added" therapy that can maximize a treatment effect. This well designed study had an appropriate sample size, included an interview control group, had

researchers blind to participant condition deliver the assessments, and utilized collaterals to verify self-report data.

In summary, research shows that with alcohol abusers motivational interviewing has been found to be relatively effective in increasing motivation for change as a treatment by itself as well as in increasing motivation for subsequent treatment. In addition, motivational enhancement has resulted in significant decreases in actual drinking behaviour. Even more pertinent to the current study, motivational interviewing has also resulted in significant improvements with drug users.

Motivational Interviewing with Drug Abusers

Saunders et al. (1995) randomly assigned 122 illicit drug users in a methadone clinic to either a one-hour motivational intervention condition (n = 57) or a one-hour educational condition (n = 65). Results showed that clients who had received the motivational procedure had more positive outcomes at the six-month follow-up: clients had fewer problems relating to drug use, more commitment to abstaining, less attrition in the methadone program, and less likelihood of relapse. Saunders et al., (1995) used the URICA (Prochaska & DiClemente, 1992) to measure readiness to change opiate use. However, there was no significant progression along the stages of change

between the experimental and control groups at intake, three-month follow-up, or six-month follow-up.

The lack of inclusion of additional measures of readiness to change may have decreased the likelihood of detecting changes in treatment readiness. Failure to detect differences in the desired direction of readiness to change may also be the result of the "control" procedure having some therapeutic effect. In fact, the "control" condition could possibly be more accurately described as a "comparison" condition because it was an educational procedure which included the presentation and discussion of an information booklet on opiate use. In addition, the effects of attention could have been controlled for by the inclusion of a no-interview control condition. Finally, this study did not report the results of statistical tests examining changes in readiness to change from pre-interview to one-week follow-up (or post-interview). In contrast, this pre- to post-interview change is one of the primary foci of interest in the current thesis.

In a pilot study, Daley, Salloum, Zuckoff, Kirisci, & Thase (1998) examined treatment adherence with clients who had problems with both depression and cocaine usage. After receiving antidepressants, Daley et al. allocated participants to either a motivational intervention ($n =$

11) or a comparison of treatment as usual ($n = 12$).

The motivational intervention consisted of four individual sessions and four group sessions during the first month of the study, while the comparison group received supportive therapy, psychoeducation, and encouragement to attend community Narcotics Anonymous meetings. Those in the experimental condition completed significantly more treatment sessions in the first month of delivery, completed outpatient care at higher rates, and had less psychiatric readmissions in the year following the motivational intervention as compared to controls.

Obvious disadvantages of Daley et al. (1998) study were the extremely small sample size and the lack of random assignment. The authors also mention that the motivational interventions utilized are still in the process of being refined. This was only a pilot study of a planned randomized clinical trial.

Swanson, Pantalon, & Cohen (1999) examined treatment adherence in samples of psychiatric and dually diagnosed patients (psychiatric illness and substance abuse) by providing standard treatment to 57 individuals and standard treatment plus motivational interviewing to 64 individuals. All participants completed the URICA at pre- and post-testing. Individuals in the motivational interviewing condition were given a 15-minute feedback

session regarding their scores on the URICA and a one-hour motivational interview designed to assist the client in their awareness of their problem(s) and to encourage them to follow through with their treatment. Results showed that significantly more participants in the experimental condition attended their first outpatient treatment session as contrasted with the comparison group. The authors of this study admit that without a control group the generalizability of the results is limited because it is difficult to determine whether it was the motivational interviewing or simply extra attention given to the experimental participants that produced the effect. Advantages of this study included large sample size and use of random assignment.

Stephens, Roffman, & Curtin (2000) randomly assigned 291 treatment-seeking regular marijuana users to either a 14-session cognitive-behavioural group treatment, a 2-session motivational interviewing individual treatment, or a 4-month delayed treatment control. The cognitive behavioural group sessions were two hours long and scheduled over an 18-week period. The motivational interviewing sessions were 90 minutes in length and were scheduled one month apart. Participants in the control condition were given the option of choosing which treatment they wanted after the four-month delay. Self-

report marijuana use and related problems were measured before and after treatment. Stephens et al. also gathered collateral information for 85% of the participants to verify their self-reports. There was moderately high agreement between these sources and participants generally reported more drug use than collaterals. Both treatment conditions showed significant reductions in marijuana use as compared to the control condition at all follow-ups (1, 4, 7, 13, and 16 months) and treatment groups had significantly higher rates of abstinence than controls. There were no significant differences in the two treatment conditions, indicating that two individual sessions of motivational interviewing is as good as 14 sessions of group treatment. When variance, due to differences in testing periods, was removed between the two treatment groups the results showed that participants in the motivational interviewing condition used marijuana less frequently and had higher abstinence rates at the one month follow-up as compared to the cognitive-behavioural group condition. Stephens et al. concluded that, with regular marijuana users, brief motivational interviewing was shown as effective or more effective than more lengthy group treatment. Advantages of this well-designed study included large sample size, random assignment, and use of collaterals to verify self-report.

Harper & Hardy (2000) compared attitudes of drug- and alcohol-using clients of probation officers who had been trained or not trained in motivational interviewing. In the experimental condition there were significant pre- to post-test improvements in offenders' attitudes towards crime and victims and problems with substance abuse as compared to the comparison condition. Interpretation of results is cautioned because of small sample size (experimental condition $n = 19$; control condition $n = 16$) and lack of random assignment. This real world application of motivational interviewing with offenders is notable and speaks to the potential benefits of utilizing appropriate interactional approaches with offenders.

Easton, Swan, & Sinha (2000) reported that, according to research, 40% to 92% of offenders have problems with both substance abuse and domestic violence. Participants in separate anger management programs were offered either the standard program ($n = 19$) or additionally provided a motivational enhancement session to address their substance abuse problems ($n = 22$). Using the Taking Steps subscale of the SOCRATES, the experimental group ($n = 18$) showed a significant increase in scores from pre- to post-testing. Unfortunately, due to too much missing data, statistical analyses on the comparison group's results ($n = 9$) were not conducted. The authors concluded that

offenders who had received motivational enhancement seemed to be more motivated according to self-report to take steps to address their substance abuse problems at post-treatment. They did mention, however, that these individuals did not translate this into action as none signed up for assessment for further substance abuse treatment. Obvious limitations to the Easton et al. (2000) study were the lack of random assignment, the very small sample size, and the lack of statistical analyses with the comparison group.

One study with EAP (Employee Assistance Program) clients by Schneider, Casey, & Kohn (2000) compared motivational and confrontational approaches to referring clients to treatment for substance abuse. Participants filled out a number of questionnaires (including the URICA and substance usage variables) at initial assessment, one week post-testing, three-month follow-up, and nine-month follow-up. They met with a EAP counselor either trained in motivational interviewing ($n = 47$) or confrontational interviewing ($n = 42$) and then referred the client to the appropriate resources. Potential differences at one-week post-testing could not be examined as they were not presented in the study. At the two follow-up periods participants in both conditions showed significant improvements and were not significantly different from

each other on the URICA and the substance abuse baseline measures. The authors conclude that motivational interviewing utilized as an EAP approach is just as good as the traditional constructive confrontation approach. Advantages of this study included the use of random assignment, collaterals, and follow-ups conducted by researchers blind to participant condition.

Baker, Boggs, and Lewin (2001) randomly assigned regular amphetamine users to either a cognitive-behavioural intervention (including motivational interviewing; $n = 32$) or a control condition ($n = 32$). The intervention was comprised of either two or four 30- to 60-minute sessions and the participants received a self-help booklet. The motivational interview was completed in the first session. In contrast, those in the control condition were only given the self-help booklet. At the six-month follow-up significantly more participants in the intervention group were abstaining from amphetamine use as compared with controls.

It is unclear which elements of the Baker et al. (2001) intervention were effective: the motivational interview or the remaining sessions of cognitive-behavioural treatment could have produced the effect. The significant results could also be the result of the attention given to participants. Inclusion of an

interview control condition of the same duration could have controlled for this possibility. An advantage of this study was the use of random assignment.

Stotts, Schmitz, Rhoades, and Grabowski (2001) randomly allocated 105 cocaine-dependent individuals in an outpatient-detoxification clinic to a pretreatment primer of motivational interviewing plus detoxification or detoxification only. Participants later completed a relapse prevention program. Motivational interviewing occurred over two sessions near the beginning of detoxification and consisted of building motivation for change and providing personalized feedback. Between the conditions there were no significant differences in completion rates of detoxification or in scores on the University of Rhode Island Assessment Scale. Using the Processes of Change Scale pre- and post-detox, those in the motivational interviewing condition significantly increased their use of behavioural processes as compared to controls. Those in the experimental condition also had significantly more abstinence at the end of detoxification as indicated by negative urine samples. One drawback to this study was the lack of an interview control condition, while an advantage of this study was the inclusion of random assignment.

In summary, research shows that motivational interviewing has been found to be relatively effective with drug abusers in reducing problems related to drug use. The intent of this dissertation is to use motivational interviewing with offenders to increase their readiness to change drug using behaviour in order to maximize the effectiveness of an institutionally-based substance abuse treatment program. In essence, motivational interviewing was utilized as a treatment primer.

Summary

The effective treatment of offender drug abuse problems is of particular concern in corrections because high levels of drug abuse reported in offender populations (Bureau of Justice Statistics, 1991; Chaiken, 1989; Innes, 1988; Lightfoot & Hodgins, 1988; Miller & Welte, 1987; Robinson et al., 1991; Weekes et al., 1993). There is a high co-occurrence of drug abuse and crime (Anglin & Speckart, 1988; Chaiken & Chaiken, 1982; Greene, 1981; Harrison & Gfroerer, 1992; Goode, 1993; Lightfoot & Hodgins, 1988; Miller & Welte, 1987; Nurco et al., 1985; 1988; Robinson et al., 1991; Speckart & Anglin, 1986; Weekes et al., 1993). These rates of drug abuse and the association between offender drug use and criminal behaviour highlight the importance of effective and

appropriate drug treatment for offenders.

Behavioral treatment for mainstream substance abuse has received the most experimental support (Miller & Hester, 1986a). Typically, behavioural, cognitive behavioural, and social learning approaches have been shown to be the preferred modes of treatment for offenders (Andrews & Bonta, 1994; Zamble & Porporino, 1990). Regarding length of treatment, briefer substance abuse interventions have been found no less effective (Heather, 1995; Miller & Rollnick, 1991) and often more effective compared to longer, more costly programs (Holder et al., 1991; Miller et al., 1995). Research has shown that effective drug treatment can result in significant decreases in drug abuse and recidivism (Lockwood et al., 1997; McCusker et al., 1997; Millson, 1996; Millson, Weekes, & Lightfoot, 1995; Wexler, Falkin, & Lipton, 1990).

Interestingly, however, North American substance abuse treatments typically ignore the results of this effectiveness research and employ disease model interventions (e.g., AA, confrontational techniques) that are not supported by research (Miller, 1991; Miller & Hester, 1986a; Peele, 1989; Sobell & Sobell, 1993; Weekes et al., 1997). The main assumptions of the disease model of substance abuse have been dispelled by researchers who

champion self-control models of substance abuse. The findings regarding problem recognition and willingness to participate in treatment are particularly relevant to this the current study. Instead of finding issues with denial in all substance abusers as the disease model would predict, Weekes et al. (1994) found that offenders with lower levels of problem severity were more likely to be unaware of their substance abuse problems. In comparison, offenders with serious substance abuse problems had high levels of problem recognition and willingness to participate in treatment (Weekes et al., 1993).

However, the combination of problem recognition and willingness to participate in treatment do not necessarily combine to produce motivation for treatment (Miller, 1985; Miller & Rollnick, 1991; Weekes et al., 1997). This simple, traditional view of motivation in treatment does not take into account the complexity of motivation (Miller & Rollnick, 1991; Weekes et al., 1997). Increasing motivation before substance abuse treatment is important in order to augment treatment effectiveness (Farabee et al., 1993; Marlatt & Gordon, 1985). Increasing motivation is also an important responsivity factor in increasing the likelihood of treatment success (Andrews, Bonta et al., 1990).

Motivational interviewing is a directive, client-centered counselling approach for eliciting behaviour change which views motivation as a fluctuating state of readiness or eagerness to change dependent on several factors (Miller, 1983; Miller & Rollnick, 1991; Miller & Sanchez; 1994; Miller & Tonigan, 1996). Motivational interviewing uses the stages of change model of Prochaska and DiClemente as it's underlying theoretical framework. Treatment gain or changes in readiness as the result of increased motivation, can be assessed by increases in the stages of change (Miller & Rollnick, 1991). Increases in readiness for change can be formally measured using the SOCRATES (Miller & Tonigan, 1996), the RCQ-TV (Heather, Luce, Peck, Dunbar, & James, 1999), the URICA (Prochaska & DiClemente, 1992), and the POC-SU (DiClemente et al., 1996). Although motivational interviewing can be used with individuals who are in any stage of change, it is designed especially for clients in the precontemplation and contemplation stages. Measuring readiness to change at pre- and post-interview can determine if motivational interviewing successfully advanced offenders' stage of changing drug abuse. Readiness to change measured at pre- and post-program can discern if the combined effects of the motivational interviewing and an institutionally-based substance abuse program resulted in further increases in

readiness to change.

Although problem recognition and willingness to participate in treatment do not equal motivation, ratings of these concepts may increase as a result of a treatment primer like motivational interviewing. In the current study, three such items will be rated by offenders. Two similar items will be correspondingly rated by facilitators. Offenders in the motivational interviewing condition may have more elevated scores on these items after interview completion.

A typical drug abuser is ambivalent about stopping his or her drug use (Kleber, 1989). Ambivalence about changing is also important to address in motivational interviewing (Miller & Rollnick, 1991) and can be measured using a decisional balance sheet (Janis & Mann, 1977). As previously outlined, research on decisional balance has shown that there are shifts from more emphasis on the cons of changing to the pros of changing as individuals progresses along the stages of change for a variety of behaviours (Prochaska, 1994; Prochaska et al., 1994).

The decisional balance sheet in the current study consists of the costs and benefits of continuing to use drugs as before, compared to the costs and benefits of making a change in drug use. Because it is likely that certain costs or benefits are valued more than others,

clients can be asked to assign subjective weights or valences to each listed cost and benefit (Allsop & Saunders, 1991). Adding up the valence benefits of using and the valence costs of changing can produce an "attachment" score. Summing the valence costs of using and the valence benefits of changing can generate a "disengagement" score. An individual's ambivalence can be roughly determined by subtracting the attachment score from the disengagement score. Requiring clients to complete a decisional balance sheet before and one week after their motivational interviewing session should show decreases in ambivalence across the administrations. Successful motivational interviewing should result, not only in an increase in readiness to change, but also in a decrease in ambivalence.

Obtaining ratings in actual treatment participation can be another method of determining the effect of motivational interviewing on subsequent treatment. Two previous studies have used motivational interviewing as a prelude to treatment in order to increase treatment responsiveness (Brown & Miller, 1993; Dench & Bennett, 2000). Dench & Bennett (2000) found treatment engagement to be unaffected by motivational interviewing. In contrast, Brown and Miller (1993) found that compared to controls, motivational interviewing resulted in increased

therapist-rated treatment participation. Ratings of participation in the institutionally-based substance abuse treatment program in the current study will be measured by two different sources: ratings by facilitators (blind to offender condition) and offender self-ratings. Replication of Brown and Miller's findings is expected regarding facilitator ratings.

Brown and Miller, however, found non-significant differences in self-reported client participation in their study (Brown & Miller, 1993). As a departure, the current study will include some extra direction for group participants, who will likely have little experience in generating participant ratings, in order to increase the likelihood of more precise self-ratings. Specifically, offenders will be asked to rate their own participation in comparison with the participation of the other offenders in the group. Self-ratings should be higher for offenders in the experimental condition.

Along the same lines, in the current study, offenders will be asked whether they found the substance abuse treatment program helpful. Individuals who received motivational interviewing are expected to endorse more favorable reviews. Similarly, facilitators will be asked to rate the performance levels of offenders when they were in the program. It is expected that offenders from the

motivational interviewing condition might apply themselves more in the substance abuse program, likely resulting in better ratings of their accumulated knowledge of drugs and related issues and of their use of coping skills. Even though high attrition rates are common in substance abuse treatment, in accordance with the results of Saunders et al. (1995), it is predicted that motivational interviewing in the current study will result in better completion rates as compared to controls. This finding may also extend to include an effect on better attendance rates as well.

A number of studies which examined the effectiveness of motivational interviewing included a control condition (Baker et al., 2001; Bien et al., 1993; Brown & Miller, 1993; Ginsburg, 2000; Harper & Hardy, 2000; Heather et al., 1996; Kuchipudi et al., 1990; Marlatt et al., 1998; Miller et al., 1988; Rollnick et al., 1992; Saunders et al., 1995; Sellman et al., 2001; Senft et al., 1997; Stephens et al., 2000). Including a control group is important to determine if the intervention had any effect compared to no treatment. In addition, the inclusion of an interview control condition can reduce the likelihood of positive outcomes being the result of the attention given to the participants. This attention factor is of particular concern with incarcerated offenders because of

the motivating effect of being involved in a therapeutic interaction or anything which is world's apart from the typical tedium of institutional life. Only two published motivational interviewing studies have utilized an interview control (Bien et al., 1993; Sellman et al., 2001). In their interview control, Bien et al. told clients that they had an alcohol problem, urged them to participate fully in the forthcoming treatment, briefly told them about the treatment program, and answered any questions. Sellman et al. (2001) utilized an interview control condition consisting of nondirective listening and participants in this condition were encouraged to talk about anything of interest, not necessarily regarding drinking. In the current thesis, the purpose of the interview control condition is to control for the confound of attention. However, it is important that the interview control procedure is in fact a control and does not include anything that may increase motivation to change the target behaviour. Telling clients that they have a substance abuse problem and encouraging them to participate fully in treatment could actually be therapeutic and could potentially affect readiness to change. Therefore, the interview control methodology in the current thesis differs from that of Bien et al. (1993). It was decided to exclude references to drug

problem severity and to avoid giving encouragement for treatment participation. In fact, the actual topic of conversation in the interview control will have little to do with substance abuse and questions regarding substance abuse will be discouraged by explanations from the therapist indicating that those types of issues will be addressed in the upcoming treatment program. In this way, the current study can better control for attention.

Another potential confound in any research project that uses self-report instruments is the potential problem of response bias. Kroner and Weekes (1996) have noted a variety of reasons offenders may engage in socially desirable responding which include the following: "personal embarrassment at disclosing symptoms which might result in a mental disorder label, the need to present 'macho' attitudes of self-sufficiency and personal strength, to reject any personal characteristics that could make them appear capable of committing crimes that they deny, and hope for parole or early release" (p. 323). The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984; Paulus & Reid, 1991) is a useful measure of social desirability for a variety of samples, including offenders (Kroner & Weekes, 1996). The BIDR is included in the test battery of the current study.

An additional potential confound that will be controlled for in the current study is therapist variance.

Therapist variance will be minimized in the current study because one therapist will conduct both of the motivational interviewing sessions and the interview control sessions. Psychological interns, blind to participants' condition, will oversee testing.

Of particular importance to correctional treatment is that motivational interviewing in the current study is appropriate treatment. Offenders medium- to high-risk for substance abuse will be targeted for the institutionally-based substance abuse program, and thus also made up the sample for the motivational interviewing condition. Drug abuse is the criminogenic need to be addressed in the motivational interviewing session with the short-term goal of increasing readiness to change and the long-term goals of reducing drug abuse and reducing reoffending. Responsivity is also taken into consideration in the motivational interviewing session not only because increasing motivation increases the likelihood of treatment success (Andrews, Bonta et al., 1990), but also because motivational interviewing is tailored to important client characteristics--the offender's stage of change and the offender's use of the processes of change.

Present Research

This study was designed to determine if there would be short-term effects of motivational interviewing itself and also that motivational interviewing would have delayed effects on subsequent substance abuse treatment. Motivational interviewing was expected to effectively advance offenders in the stages of change (e.g., precontemplation stage to the contemplation stage, contemplation to the preparation stage, etc.). It was predicted that compared to controls, offenders in the motivational interviewing condition would progress further in the stages of change for drug use (as indicated by the comparison of pre- to post-interview SOCRATES, RCQ, and URICA) and would use more advanced processes of change (as indicated by the pre- to post-interview comparisons using the POC-SU). Other assumptions were that motivational interviewing would result in decreased ambivalence, increased ratings of problem recognition, and increased ratings of willingness to participate in treatment.

After completion of the substance abuse treatment program, it was predicted that, as compared to controls, offenders in the motivational interviewing condition would be more likely to have progressed further in the stages of change (as indicated by the comparison of post-interview to post-program SOCRATES, RCQ, and URICA) and would show

increased use of more advanced processes of change (as indicated by the post-interview to post-program comparisons using the POC-SU). Compared to controls, it was also proposed that offenders in the experimental condition would receive higher ratings of substance abuse treatment program participation by program facilitators and would also rate themselves higher in participation. In addition, it was hypothesized that facilitators would give offenders in the experimental condition better ratings concerning acquired knowledge and skill use. Offenders in the motivational interviewing condition were also expected to indicate that they found the program more helpful than offenders in the control conditions. Finally, it was predicted that attendance levels and completion rates would be higher for the experimental group.

Method

Research Participants

Preliminary testing (using the Computer Lifestyle Assessment Instrument described below), which served as the selection criteria for the study, were completed by federal offenders in advance of the study. Where offenders had not completed preliminary testing file information was utilized to determine suitability for the study. Ninety-six federal inmates at the medium security

Drumheller Institution in Drumheller, Alberta, who had a drug problem and who met the criteria for the substance abuse treatment program were randomly assigned to one of the three conditions ($n = 32$ per condition) in this study. Most offenders later completed the substance abuse treatment program in groups consisting of 8 to 10 participants.

Assessment Instruments

Computerized Lifestyle Assessment Instrument (CLAI).

The CLAI is a standardized computerized testing instrument which is a means of measuring the level of severity of substance use and of examining the nature of substance use problems (i.e., the interactions between drug and/or alcohol use and criminal behaviour) in offender populations (Robinson et al., 1991). In addition, the CLAI includes questions that ask about a variety of other lifestyle choices (e.g., nutrition, tobacco use, employment, education). In all, the CLAI includes over 600 items that target offenders' behaviours and choices in the six months before incarceration. For the CLAI administration, offenders completed multiple choice questions on a microcomputer while under the supervision of a trained staff member. After the administration, the offender and the case manager both receive hard copies of CLAI results.

Drug Abuse Screening Test (DAST). The DAST (see Appendix C; Skinner, 1982) was developed and standardized at the Addiction Research Foundation. The DAST is included in the CLAI administration. It is a 20-item instrument designed to measure severity of drug problem. Questions are worded to inquire about drug use in the six months prior to incarceration. Individuals respond to the DAST by indicating "Yes" or "No". The total score on the DAST indicates the level of drug problem: none (0), low (1-5), moderate (6-10), substantial (11-15), severe (16-20). The DAST shows satisfactory concurrent validity (significant correlations with relevant background, drug use, and psychopathology variables) and excellent internal consistency (.95; Skinner, 1982). Criteria for inclusion in this study required that research participants score in the moderate to severe range, or be on the borderline of low and moderate and have other indicators of drug problems.

Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). The SOCRATES (see Appendix D; Miller & Tonigan, 1996) is a 19 item instrument which measures readiness for changing problem drinking. Individuals respond to statements on a 5-point Likert scale that ranges from "No! Strongly Disagree" to "Yes! Strongly Agree". Factor analysis has identified three factors:

recognition (preparation and negatively-worded precontemplation items), ambivalence (contemplation items), and taking steps (action and maintenance items). Because the factors do not correspond directly to the stages of change, showing how clients score from very low to very high on each of the factors of the SOCRATES is more meaningful than referring to particular stages (Miller & Tonigan, 1996). The SOCRATES shows high internal consistency (subscales range from .82 to .94) and excellent test-retest reliability (subscales range from .87 to .96). For the current thesis, the drug version of the SOCRATES was used. The drug SOCRATES consists of the original SOCRATES items with a simple substitution of descriptive words (e.g., drug use for alcohol use). This drug version is in the process of being validated (J. S. Tonigan, personal communication, June 9, 1998). Scoring of the drug SOCRATES follows the same procedure as that of the original: the three-factor solution is compared to normative data.

Readiness to Change Questionnaire: Treatment Version (RCQ-TV). The RCQ-TV (see Appendix E; Heather et al., 1999) is a 15 item instrument which has been designed to measure readiness for change in alcohol users. Individuals respond to the statements on a 5-point Likert-type scale which ranges from "Strongly Disagree" to

"Strongly Agree". The original form of this instrument was called the RCQ (Rollnick et al., 1992). The three-factor solution of the RCQ-TV corresponds to the precontemplation, contemplation, and action stages. The RCQ-TV has adequate test-retest reliability (subscales range from .69 to .86) and internal consistency (subscales range from .60 to .77). Concurrent validity was established by examining the relationships between stage of change allocation and other relevant variables. For the current thesis, a drug version of the RCQ-TV was utilized which consists of simple substitution of the problem area (e.g., drug use for alcohol use). No psychometric properties are available for this modification. Scoring of the items followed the standard scoring of the RCQ-TV for alcohol by coding the individual items by responses: Strongly Disagree = -2, Disagree = -1, Unsure = 0, Agree = 1, and Strongly Agree = 2. Scores for each stage were then summed and the highest score determined the stage that the individual is in.

University of Rhode Island Change Assessment Scale (URICA). The URICA (see Appendix F; McConaughy et al., 1983; Prochaska & DiClemente, 1992) is a 32-item generic readiness for change instrument. Items correspond to four of the stages of change: precontemplation, contemplation, action, and maintenance. Individuals respond to

statements by circling a number from 1 to 5, which correspond to "Strongly Disagree", "Disagree", "Undecided", "Agree", and "Strongly Agree". Questions are worded to apply to any problem behaviour, as opposed to only one problem behaviour. For the current thesis, the problem behaviour was listed as drug use. The URICA has shown high internal consistency (subscales range from .88 to .80; McConaughy et al., 1983) as well as good construct and predictive validity (Prochaska & DiClemente, 1992). Principle component analysis produced a four factor solution corresponding to each of the four stages (McConaughy et al., 1983). The URICA is scored by adding up the ratings for all items in each stage; summing the total scores of the contemplation, action, and maintenance stages; and subtracting the precontemplation stage score from this sum in order to get a transtheoretical action score. Alternatively, stage profiles can be determined by using cluster analysis.

Processes of Change Questionnaire: Substance Use Version (POC-SU). The POC-SU (see Appendix G; DiClemente et al., 1996) is a 20-item instrument which measures process use in readiness for changing substance using behaviour. It was adapted from the two alternative forms of the Processes of Change Scale for Alcohol (AlcPOC-A and AlcPOC-B; DiClemente et al., 1996). The AlcPOC-A and

AlcPOC-B show acceptable internal consistency (subscales range from .64 to .93) as well as high inter-item correlations (.94 to .98) and split-half reliability (.84 to .89). In the scale, there are two items for each of the 10 processes of change. The processes are divided into cognitive/experiential processes (consciousness raising, dramatic relief, environmental reevaluation, social liberation, and self-reevaluation) and behavioural processes (helping relationship, stimulus control, counter-conditioning, reinforcement management, and self-liberation). Instead of determining individual process use, this instrument provides scores for both cognitive/experiential and behavioural subscales. Individuals respond to statements by circling a number from 1 to 5, which correspond to "Never", "Seldom", "Occasionally", "Frequently", and "Repeatedly". Whichever subscale score is highest determines whether the individual is designated as using primarily cognitive/experiential or behavioural processes. In order to have offenders focus only on drug use and not on alcohol use, the current study will include minor modifications in the content of the items. For example, the item "I use reminders to help me not to use alcohol or drugs" has been modified to "I use reminders to help me not to use drugs".

Scoring Rules for Stage of Change Instruments.

Where scores on SOCRATES, RCQ-TV, URICA, and POC-SU subscales were tied and a stage allocation was required, the backward rule for stage allocation was utilized. Specifically, in a tie between the numerical values of two subscales (e.g., contemplation = 5, action = 5), the stage allocated was the one earlier on the continuum of change (e.g., contemplation).

Balanced Inventory of Desirable Responding (BIDR).

The BIDR (see Appendix H; Paulus, 1984; Paulus & Reid, 1991) measures an offender's tendency to engage in self-deception and impression management. The impression management scale measures how much the respondent desires to impress others. The self-deception scale measures positive self-statements which the respondent believes to be true as well as the respondents' defensiveness regarding threats directed at the self. The BIDR consists of 40 statements which individuals rate on a 7-point Likert scale ranging from "not true" to "very true". Factor analysis with an offender sample produced three factors (Impression management, Denial of the negative, and Over confident rigidity) which is equivalent to Paulus's (1984) two factor solution (Kroner & Weekes, 1996). The BIDR has demonstrated construct validity as well as concurrent and discriminant validity (Paulus,

1984). Measuring test-retest reliability may not be particularly meaningful as socially desirable responding naturally varies over time and situations.

Decisional Balance Sheet. The decisional balance sheet originated from work on decision making by Janis and Mann (1977). A number of researchers (Lightfoot, 1993; Miller & Rollnick, 1991; Prochaska et al., 1994) have incorporated variations of decisional balance in their approaches. In the current study, the costs and benefits of continuing to use drugs as before were compared to the costs and benefits of making a change in drug use in order to get an ambivalence score from the decisional balance sheet (see Appendix I). After completing the decisional balance sheet, clients were asked to indicate beside each listed benefit and cost how much that they value that reason by writing a number from 1 to 5. A 5-point Likert-type scale, ranging from "Not important" to "Important" to "Extremely important" was provided to assist the rating process. A rough estimate of attachment to drug use was derived by adding the valences of the benefits of continuing to use as before and of the costs of making a change. Similarly, a rough estimate of drug use disengagement was derived by adding the valences of the benefits of making a change and of the costs of continuing to use as before. An individual's level of ambivalence

was roughly determined by subtracting the attachment score from the disengagement score. Improvement, or decreased ambivalence, was postulated to be indicated when calculations result in higher positive numbers at post-interview compared to pre-interview.

Demographic Information. Offenders responded to demographic questions during Phase I testing (see Appendix J).

Offender Self-Ratings. In both Phase I and II testing offenders answered one item which addressed their problem recognition, one item which addressed their willingness to participate in treatment, and one item which in combination asked about both problem recognition and willingness to participate in treatment (see Appendix K). These items respectively are the following: "Drugs are a major problem in my life", "I am willing to participate in treatment for drug abuse", and "I need help for my drug abuse problems". Ratings were made on a 5-point Likert scale ranging from "Not true"(1) to "True" (3) to "Very true" (5).

Offender Program Ratings. After program completion, offenders rated both their participation in the program and whether they found the program helpful (see Appendix L). These items are as follows: "In your opinion, how much did you participate in the program compared to other

program participants?" and "To what extent did you find the program helpful?". Ratings will be made on a 5-point Likert scale ranging from "Not at all" (1) to "To some extent" (3) to "To a great extent" (5).

Facilitator Program Ratings. After program completion, facilitators rated offenders on different dimensions (see Appendix M). Facilitators responded to items assessing an offender's problem recognition at the end of the program, level of participation throughout the program, improvements in knowledge of drugs and related issues, and improvements in skills acquired in the program. The first item reads: "Please rate the offender's degree of problem recognition (drug abuse only) at the end of the program". These ratings were on a 5-point Likert scale ranging from "Refused to acknowledge drug abuse as being a major problem in his life" (1) to "Was willing to admit to some problems but was not convinced of the full extent of the problem" (3) to "Was very willing to admit to the problem" (5). The next three items were all rated using a 5-point Likert scale ranging from "Not at all" (1) to "To some extent" (3) to "To a great extent" (5). These three items were the following: "Overall, to what extent did the offender participate in the program", "To what extent had this offender improved his knowledge of drugs and substance abuse issues?", and

"To what extent has this offender developed skills from the program (e.g., problems solving skills, strategies for avoiding lapses/relapses)?" . Facilitators also provided a record of offender attendance in the program and completion rates for each group participant.

Additional facilitator ratings, which were to have been completed before offenders interacted with the researcher, were not included in the study. In most instances facilitators met research participants after they had completed Phase I and II testing. Therefore, these initial facilitator ratings (see Appendix N for the originally intended items) were discarded.

Interventions

Motivational Interviewing Condition. The stage of change for a research participant was determined by using the pretest data and asking some initial questions on personal drug history (see Appendix O). After rapport was established, the motivational interview started at the point in the sequential standard interview which corresponded to the offender's estimated stage of change. During interviews this writer paid particular attention to the processes of change that the offender utilized in order to modify the motivational interview where required. The five general principles of motivational interviewing were adhered to as this writer primarily asked open-ended

questions followed by reflective listening, elicited self-motivational statements, provided affirmations where appropriate, gave personalized feedback, and provided summaries. Motivational interviewing for at least one complete stage was executed during the 45- to 60-minute session. At the end of the interview the offender was thanked for his time and reminded that he would be completing additional questionnaires in about a week.

Interview Control Condition. The interview consisted of asking offenders questions about their general health, nutrition, and other aspects of their life which may have changed while they have been incarcerated (see Appendix P). Discussions on topics that arose, provided they were not specifically related to drug use, were encouraged. If questions were raised by the offender regarding substance abuse, this writer discouraged such discussion by indicating that those types of issues would be dealt with in the upcoming treatment program. At the end of the interview the offender was thanked for his time and reminded that he would be completing additional questionnaires in about a week.

No-Interview Control Condition. Research participants in this condition completed all relevant questionnaires but no interview accompanied this control condition.

Offender Substance Abuse Pre-Release (OSAP)

Program. The institutional substance abuse treatment program for which motivational interviewing was used as a treatment primer is the Offender Substance Abuse Pre-Release (OSAP) Program. The OSAP program is a multi-faceted, research-based, cognitive-behavioural intervention which consists of 26, three-hour group sessions and three individual counseling sessions. The OSAP program is designed to treat federal offenders with moderate to substantial drug and/or alcohol problems a few months before their release (Lightfoot, 1993; Millson, Weekes, & Lightfoot, 1995). Offenders with severe substance abuse problems also benefit from participation in the OSAP program in the absence of more intensive services (Lightfoot, 1993). The OSAP program is not only effective treatment (Millson, 1996; Millson et al., 1995), it is also appropriate treatment (Andrews & Bonta, 1994; Zamble & Porporino, 1990). Program sessions include modules on drug and alcohol education, skill acquisition, self-management training, and relapse prevention training (Lightfoot, 1993). Facilitators in the OSAP program encourage abstinence as the goal for drug abusers; however, decreasing drug use is also positively regarded (Lightfoot, 1993; Marlatt & Gordon, 1985).

Procedure

Most inmates ($n = 82$) had completed preliminary testing with the CLAI at reception (see Table 2) and the DAST was included that administration. On the DAST the majority of offenders scored as having a drug problem in the six months prior to arrest that had been in the moderate ($n = 32$), substantial ($n = 23$), and severe ($n = 16$) ranges, although some high lows ($n = 11$) were also included. Each offender in the study had been on the waiting list for the OSAP program. As mentioned in the method, offenders without preliminary test data ($n = 14$) were identified as having drug problems using a file review. In addition, when asked if they wanted to participate in the study they agreed that they currently or recently used drugs regularly. When called upon in their living units offenders were individually asked if they wanted to participate in a study as a part of this writer's doctoral research. This writer then provided a brief description of the study and its expectations. Interested offenders then signed the consent form of the corresponding condition to which they were randomly assigned (see Appendices Q, R, S).

A total of 147 offenders were approached to participate in this study. A number of offenders who were

Table 2

Phases of Assessment and Intervention

CLAI testing	Phase I testing	Motivational interview	Phase II testing	OSAP program	Phase III testing
Most Inmates Tested	Inmates referred to OSAP	or	(one week later)		
		Control interview			
		or			
		No interview			

asked refused to participate in the research or were later dropped. A total of 36 (25%) refused: 14 because they indicated that they did not have a drug problem, 18 because they were not interested in participating, and 4 who initially agreed but were later no shows for testing. A total of 15 offenders (10%) were dropped from the research: 3 because they could not complete Phase II testing at the appropriate time, 1 because he admitted that he intentionally screwed up the data, 1 because he admitted that he was high during testing, 6 because they refused to complete Phase II testing, and 4 because of too much missing data. Data for 96 participants (65% of original 147 offenders approached) was retained in the research for Phase I and II testing. Only 64 of the 96 research participants took the OSAP program in the time allotted for the research. Some refused the program, were transferred to another institution, were housed in segregation, decided to take an alternate substance abuse treatment, or deferred taking the program for other reasons. For final testing, offenders who did not complete OSAP were not asked to do Phase III testing, some offenders refused to go to the psychology department to complete the questionnaires, and other offenders had been transferred or were housed in segregation and could not

complete testing. A total of 52 offenders (54% of the 96 participants) completed Phase III testing.

All testing was supervised by a psychology intern who was blind to the assigned conditions of the research participants. Phase I testing consisted of the completion of the following self-report measures: SOCRATES, RCQ, URICA, POC-SU, BIDR, a decisional balance sheet, and offender self-ratings of problem recognition and willingness to participate in treatment. Those in the experimental condition then participated in a 45- to 60-minute motivational interview within one day of testing (refer to Appendix O). Offenders in the interview control condition completed a 45- to 60-minute control interview within one day of testing (refer to Appendix P). Before the interviews, offenders read and signed a consent form according to the condition to which they were assigned (see Appendices T and U). Offenders in the no-interview control condition completed Phase I testing, but did not complete an interview between Phase I and II testing.

Phase II testing occurred approximately one week following Phase I testing. In Phase II testing, offenders again completed the following measures: SOCRATES, RCQ, URICA, POC-SU, BIDR, a decisional balance sheet, and offender self-ratings of problem recognition and willingness to participate in treatment.

Approximately one third of offenders in the three conditions ($n = 64$) then participated in the OSAP program.

Phase III testing was completed after OSAP program completion ($n = 54$). In Phase III testing, offenders once again completed the following measures: SOCRATES, RCQ, URICA, POC-SU, BIDR, offender program ratings. In addition, offenders also completed program ratings and facilitators provided offender program ratings, attendance levels, and completion rates. Offenders were given a debriefing sheet (see Appendix V) after they completed Phase III testing.

Results

Screening of the data and data analyses were completed using SPSS 6.1 (Statistical Package for the Social Sciences, 1992).

Data Screening

Prior to analysis, variables were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. Data screening was performed according to recommendations by Tabachnick and Fidell (1989). Illogical or contradictory stages of change profiles were identified and deleted according to guidelines discussed in Heather et al. (1999). For example, profiles were deleted when subscale scores of the RCQ-TV were all

negative, both precontemplation and action were positive and contemplation was negative, or the precontemplation and contemplation subscale scores were negative and action was positive (where contemplation was more negatively endorsed than precontemplation). In total, 6 RCQ-TV profiles were deleted from Phase I and II testing and 2 profiles were removed from Phase III data. In addition, scores that lacked variability (i.e., repeated selection of 5's throughout the entire test) were considered a potential indicator of response bias. Similarly with the SOCRATES, 8 stages of change profiles were deleted from the Phase I and II testing and an additional 3 profiles were deleted from the Phase III testing. A total of 3 outliers in the RCQ-TV stage of change profiles and 4 outliers in SOCRATES were identified and removed. No stage of change profiles of URICA or POC-SU were identified as being problematic. As a result of the aforementioned deletions the totals in the analyses with the various tests for Phase I and II testing were modified for the SOCRATES ($\underline{n} = 84$) and the RCQ-TV ($\underline{n} = 85$). One set of subscale scores was deleted in the POC-SU ($\underline{n} = 95$) because of too much missing data. At this point, URICA subscales were unaffected by deletions ($\underline{n} = 96$). Already lower Phase III testing totals (because of fewer offenders taking the OSAP program and even fewer

completing final testing) were likewise adjusted as described above (SOCRATES, $\underline{n} = 44$; RCQ-TV, $\underline{n} = 44$; POC-SU, $\underline{n} = 52$; and URICA, $\underline{n} = 52$).

The coefficient of variation was examined in the total sample and was within a range of acceptability for all variables. Normality of the dependent variables was examined by utilizing Frequencies (i.e., skewness and kurtosis) and Histograms (normal curve selected). The distributions of variables were examined separately for each condition (MI = 32, IC = 32, NC = 32). In most cases skewness and kurtosis were close to zero or at a minimum the distributions across condition closely resembled each other. Where this did not occur additional outliers were removed. As a result, an additional stage of change profile was removed from the POC-SU as well as from the RCQ-TV, eight profiles were deleted from the URICA, four decisional balance ratings were deleted, five facilitator ratings were deleted, and one offender final rating was removed. As a result, sample sizes for the analyses varied by test/variable for Phase I and II testing (SOCRATES, $\underline{n} = 84$; RCQ-TV, $\underline{n} = 86$; POC-SU, $\underline{n} = 94$, URICA, $\underline{n} = 88$; decisional balance, $\underline{n} = 47$, offender ratings, $\underline{n} = 95$) as well as Phase III testing (SOCRATES, $\underline{n} = 44$; RCQ-TV, $\underline{n} = 43$; POC-SU, $\underline{n} = 52$, URICA, $\underline{n} = 50$; facilitator likert-type ratings, $\underline{n} = 55$, offender final ratings, $\underline{n} =$

50). Pairwise linearity for all variables in the analysis was checked using bivariate scatterplots and found to be satisfactory. Homogeneity of variance was also deemed satisfactory after examination of the variances and sample sizes of the variables.

Order Effects

Testing packages used in this study were organized in three different orders in an attempt to counterbalance any potential order effects. In the initial testing package the change instruments were ordered SOCRATES, RCQ-TV, URICA, and POC-SU and it was completed by 38 offenders. The second testing package was completed by 38 offenders in the order of POC-SU, URICA, RCQ-TV, and SOCRATES. Finally, 20 offenders used the final testing order which consisted of RCQ-TV, SOCRATES, POC-SU, and URICA. The other measures included in the testing packages were also varied systematically across the three orders. No significant differences in order were found across each of the dependent variables.

Demographic Variables

Statistical analyses of the demographic variables, both continuous (using a one-way between subjects ANOVA-Analysis of Variance) and categorical (using chi square), across all three conditions showed nonsignificant differences (see Table 3). As a result, descriptives and

Table 3

Demographic Variables in Conditions and in Total Sample

Variable	MI		IC		NC		Total	
	Mean	<u>n</u>	Mean	<u>n</u>	Mean	<u>n</u>	Mean	<u>n</u>
Age	29.8	31	26.1	32	29.4	32	28.5	95
Grade level	10.3	27	10.2	29	10.0	26	10.2	82
Years using drugs	13.1	32	9.9	31	12.1	30	11.7	93
Times drug treatment	1.5	30	1.2	31	1.1	30	1.3	92
DAST score	11.7	26	9.6	25	11.0	27	10.8	78

Variable	MI		IC		NC		Total	
	Percent		Percent		Percent		Percent	
Race								
Caucasion	73.3%		61.3%		56.7%		63.7%	
Metis	6.7%		19.4%		20.0%		15.4%	
Native American	6.7%		6.5%		16.7%		9.9%	
African American	10.0%		6.5%		3.3%		6.6%	
Oriental	0.0%		3.2%		3.3%		2.2%	
Other	3.3%		3.2%		0.0%		2.2%	
	(<u>n</u> = 30)		(<u>n</u> = 31)		(<u>n</u> = 30)		(<u>n</u> = 91)	
Marital Status								
Single	66.7%		54.8%		48.1%		56.5%	
Married/Common-law	22.2%		35.5%		29.6%		29.4%	
Separated	7.4%		3.2%		14.8%		8.2%	
Divorced	0.0%		6.5%		7.4%		4.7%	
Widowed	3.7%		0.0%		0.0%		1.2%	
	(<u>n</u> = 27)		(<u>n</u> = 31)		(<u>n</u> = 27)		(<u>n</u> = 85)	
DAST Level								
Low	6.9%		19.2%		14.8%		13.4%	
Moderate	34.5%		50.0%		33.3%		39.0%	
Substantial	37.9%		15.4%		29.6%		28.0%	
Severe	20.7%		15.4%		22.2%		9.5%	
	(<u>n</u> = 29)		(<u>n</u> = 26)		(<u>n</u> = 27)		(<u>n</u> = 82)	

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, DAST = Drug Abuse Screening Test.

Note. There were no significant differences between the conditions on the demographic variables.

frequencies are presented for the entire sample. On average, research participants were 28.5 years in age, single, Caucasian, had completed grade 10, had used drugs for almost 12 years, scored as having a moderate or substantial drug problem according to the DAST, and had attended drug treatment only once (refer to Table 3).

Also of interest were the types of drugs that offenders had used regularly. Of the 95 offenders who responded, more than 83% self-reported using marijuana or hashish regularly. The next drug used most regularly was reported as cocaine with almost 70% of offenders admitting to regular cocaine use. Third most regularly used as reported by research participants was crack at about 52%. The percentages of drug use that are presented in Table 4 are total sample means because there were no significant differences between the three conditions on these variables (except for two variables described next).

There were differences between the groups on how many offenders reported regular heroin use as well as how many offenders reported that they regularly used more than one drug. In total, 27.4% of offenders reported they used heroin regularly and 80% reported regular use of more than one drug. Separate chi squares with each variable and condition were completed. Cramer's Phi coefficient was used because of the categorical, nondichotomous nature of

Table 4

Percentage of Drugs Used in Conditions and in Total Sample

Drug	MI	IC	NC	Total	
Marijuana/Hashish	81.3%	90.6%	77.4%	83.2%	n.s.
Cocaine	81.3%	68.8%	58.1%	69.5%	n.s.
Crack	59.4%	56.3%	38.7%	51.6%	n.s.
LSD	31.3%	50.0%	35.5%	38.9%	n.s.
Heroin	40.6%	12.5%	29.0%	27.4%	*
Valium	28.1%	25.0%	19.4%	24.2%	n.s.
MDA	12.5%	12.5%	16.1%	13.7%	n.s.
PCP	12.5%	15.6%	3.2%	10.5%	n.s.
Amphetamines	21.9%	18.8%	12.9%	17.9%	n.s.
Barbituates	15.6%	6.3%	6.5%	9.5%	n.s.
Quaaludes	3.1%	6.3%	3.2%	4.2%	n.s.
Glue/Gas	0.0%	3.1%	3.2%	2.1%	n.s.
Other drug	3.1%	15.6%	6.5%	8.4%	n.s.
More than 1 drug	90.6%	87.5%	61.3%	80.0%	**
	(n = 32)	(n = 32)	(n = 31)	(n = 95)	

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control.

* $p < .05$

** $p < .01$

the variables. For heroin, $\chi^2(2, N = 95) = 0.26, p = .040$, with 13 offenders in MI, 4 offenders in IC, and 9 offenders in NC reporting regular heroin use. For regular multiple drug use, $\chi^2(2, N = 95) = 0.33, p = .006$, with 29 offenders in MI, 28 offenders in IC, and 19 offenders in NC reporting regular multiple drug use. These differences occurred despite random assignment to conditions.

All offenders in the study completed the questionnaires in Phase I testing and in an average of 6.84 days later in Phase II testing. Phase III testing was completed by 54 offenders after an average of 8.68 days had passed following OSAP program completion. For those in the interview conditions, the average interview length was 51.6 minutes ($n = 64$). According to facilitator ratings available on attendance, offenders ($n = 60$) attended an average of 23.1 sessions of the OSAP program. When one way between subjects ANOVAs were performed on each of the above variables separately by condition, there were no significant differences across condition. A total of 91.7% of offenders who took the OSAP program ($n = 60$) completed it.

Balanced Inventory of Desirable Responding

The BIDR subscale average scores in this study were within a range of acceptability according to available

norms (Paulus, 1991; see Table 5). In a normative sample of 433 college students, males received an average of 4.3 ($SD = 3.1$) on Impression Management and an average of 7.5 ($SD = 3.2$) on Self-Deception (Paulus, 1991). The average scores in the current study are quite similar to, and typically less than, the available norms (refer to Table 5).

Correlations with BIDR subscale scores and the within subjects (dependent) variables in this study were also examined. Subscale scores at Phase I testing were compared with each of the dependent subscale scores. Total correlations were examined as well as separate correlations for each of the three different conditions. This was also repeated for Phase II testing. Correlations were examined across Phase I and II testing. Larger differences in correlations were submitted to r to z transformations in order to see if these differences were significant. Interestingly, only motivational interviewing correlations were significant. The first correlation was with BIDR Self-Deception subscale and SOCRATES Recognition subscale (Phase I $r = -.0802$, $p = .685$; Phase II $r = -.5552$, $p = .002$) with $n = 28$. Phase II testing indicates a strong negative relationship, whereby as Recognition goes up, Self-Deception goes down. The change from Phase I to II testing was significant,

Table 5

Balanced Inventory of Desirable Responding (BIDR) Mean
Subscale Scores in the Total Sample Across All Phases of
Testing

BIDR	<u>MI</u>			<u>IC</u>			<u>NC</u>			<u>Total</u>		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
<u>Phase I</u>												
IM	2.9	2.3	32	3.4	2.4	32	3.2	2.6	31	3.2	2.4	95
SD	5.3	3.4	32	6.6	3.3	32	5.3	3.4	32	5.8	3.4	96
<u>Phase II</u>												
IM	3.0	2.5	32	2.6	2.2	32	3.0	2.8	31	2.9	2.5	95
SD	5.8	3.5	32	6.5	3.4	32	5.0	3.0	32	5.8	3.3	96
<u>Phase III</u>												
IM	4.4	3.3	21	3.1	2.2	16	4.8	3.9	15	4.1	3.2	52
SD	6.8	3.2	21	7.9	4.2	16	7.6	3.0	15	7.4	3.5	52

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, IM = impression management, SD = self-deception.

Note. There were no significant differences between the conditions on the subscales.

$z_{obs} = 1.9, p < .05$. This may mean that after participating in motivational interviewing, research participants were less likely to fool themselves, as measured by the SOCRATES Recognition subscale. However, the actual nature of this relationship is difficult to determine because of the inability to apply causation in correlational research.

Similarly, a second correlation with BIDR Self-Deception subscale and the URICA Precontemplation subscale (Phase I $r = -.0659, p = .734$; Phase II $r = .4374, p = .018$) was examined ($n = 29$). Phase II testing indicates a positive relationship, whereby as Precontemplation goes up, Self-Deception goes up, or vice versa. The change from Phase I to II testing was significant, $z_{obs} = 2.0, p < .05$. Similar to the previous finding, this may mean that after participating in motivational interviewing, decreases in Precontemplation were associated with decreases in self-deception, or in contrast, increases in Precontemplation were associated with increases in fooling themselves. These two subscales (the SOCRATES Recognition and the URICA Precontemplation) measure the same thing, but in different directions. It is interesting that both subscales seem to be showing anticipated outcomes within the context of Self-Deception. However, as mentioned above, correlational research is limited because of the

inability to apply causation.

In order to simplify presentation of analyses of separate readiness to change questionnaires, the results for each test are presented in separate sections followed by results of analyses on the decisional balance, offender ratings, and facilitator ratings. Before examining each test separately, correlations are presented between similar subscales of the different tests (see Tables 6, 7, 8, 9). Correlations between contemplation-type subscales in Phase I testing (average $\underline{r} = .2789$), Phase II testing (average $\underline{r} = .2789$), and Phase III testing (average $\underline{r} = .2843$) showed a combination of significant and nonsignificant low correlations. Correlations between action-type subscales were higher and consistently significant in Phase I testing (average $\underline{r} = .4978$), Phase II testing (average $\underline{r} = .5409$), and Phase III testing (average $\underline{r} = .5420$).

The present sample size ($N = 96$) is much smaller than what is desired in a principle components analysis (Tabachnick & Fidell, 2001, discuss how 300 cases is the recommended minimum amount). However, each of the readiness to change questionnaires were examined in the analysis in order to approximate this sample's fit with the original factor structures of each measure.

Table 6

Phase I and II Testing Intercorrelations for "Contemplation-type" Scores from the Stages of Change Readiness and Treatment Eagerness Scale, the Readiness to Change Questionnaire: Treatment Version, the University of Rhode Island Change Assessment, and the Processes of Change Questionnaire: Substance Use Version.

Measure	SOCRATES (Am)	RCQ (C)	URICA (C)	POC-SU (C/E)
SOCRATES (Am)	---	.3192 ($\underline{n} = 76$) $\underline{p} = .005$	.2310 ($\underline{n} = 78$) $\underline{p} = .042$	.3556 ($\underline{n} = 83$) $\underline{p} = .001$
RCQ (C)	.3769 ($\underline{n} = 76$) $\underline{p} = .001$	---	.2567 ($\underline{n} = 83$) $\underline{p} = .019$	.0980 ($\underline{n} = 84$) $\underline{p} = .375$
URICA (C)	.2306 ($\underline{n} = 78$) $\underline{p} = .042$	-.0258 ($\underline{n} = 83$) $\underline{p} = .797$	---	.5592 ($\underline{n} = 86$) $\underline{p} = .000$
POC-SU (C/E)	.2762 ($\underline{n} = 83$) $\underline{p} = .011$	.2039 ($\underline{n} = 84$) $\underline{p} = .046$	.6118 ($\underline{n} = 86$) $\underline{p} = .000$	---

Note. Am = ambivalence, C = contemplation, C/E = cognitive/experiential.

Note. Intercorrelations for Phase I testing subscale scores are presented above the diagonal and intercorrelations for Phase II testing are presented below the diagonal.

Table 7

Phase III Testing Intercorrelations for "Contemplation-type" Scores from the Stages of Change Readiness and Treatment Eagerness Scale, the Readiness to Change Questionnaire: Treatment Version, the University of Rhode Island Change Assessment, and the Processes of Change Questionnaire: Substance Use Version.

Measure	SOCRATES (Am)	RCQ (C)	URICA (C)	POC-U (C/E)
SOCRATES (Am)	---	.2020 (<u>n</u> = 35) <u>p</u> = .245	.0817 (<u>n</u> = 42) <u>p</u> = .607	.4748 (<u>n</u> = 44) <u>p</u> = .001
RCQ (C)		---	.2156 (<u>n</u> = 42) <u>p</u> = .170	.1070 (<u>n</u> = 43) <u>p</u> = .495
URICA (C)			---	.6244 (<u>n</u> = 50) <u>p</u> = .000
POC-SU (C/E)				---

Note. Am = ambivalence, C = contemplation, C/E = cognitive/experiential.

Table 8

Phase I and II Testing Intercorrelations for "Action-type" Scores from the Stages of Change Readiness and Treatment Eagerness Scale, the Readiness to Change Questionnaire: Treatment Version, the University of Rhode Island Change Assessment, and the Processes of Change Questionnaire: Substance Use Version.

Measure	SOCRATES (TS)	RCQ (A)	URICA (A)	POC-SU (Beh)
SOCRATES (TS)	---	.6892 ($\underline{n} = 76$) $\underline{p} = .000$	.4048 ($\underline{n} = 78$) $\underline{p} = .000$	.4964 ($\underline{n} = 83$) $\underline{p} = .000$
RCQ (A)	.7405 ($\underline{n} = 76$) $\underline{p} = .000$	---	.5387 ($\underline{n} = 83$) $\underline{p} = .000$	.4690 ($\underline{n} = 84$) $\underline{p} = .000$
URICA (A)	.5065 ($\underline{n} = 78$) $\underline{p} = .000$	.5715 ($\underline{n} = 83$) $\underline{p} = .000$	---	.3889 ($\underline{n} = 86$) $\underline{p} = .000$
POC-SU (Beh)	.5483 ($\underline{n} = 83$) $\underline{p} = .000$	.4137 ($\underline{n} = 84$) $\underline{p} = .000$	.4649 ($\underline{n} = 86$) $\underline{p} = .000$	---

Note. TS = taking steps, A = action, Beh = behavioural.

Note. Intercorrelations for Phase I testing subscale scores are presented above the diagonal and intercorrelations for Phase II testing are presented below the diagonal.

Table 9

Phase III Testing Intercorrelations for "Action-type"
Scores from the Stages of Change Readiness and Treatment
Eagerness Scale, the Readiness to Change Questionnaire:
Treatment Version, the University of Rhode Island Change
Assessment, and the Processes of Change Questionnaire:
Substance Use Version.

Measure	SOCRATES (TS)	RCQ (A)	URICA (A)	POC-SU (Beh)
SOCRATES (TS)	---	.7232 ($\underline{n}$ = 35) $\underline{p}$ = .000	.3784 ($\underline{n}$ = 42) $\underline{p}$ = .013	.3204 ($\underline{n}$ = 44) $\underline{p}$ = .034
RCQ (A)		---	.7327 ($\underline{n}$ = 42) $\underline{p}$ = .000	.5024 ($\underline{n}$ = 43) $\underline{p}$ = .001
URICA (A)			---	.5947 ($\underline{n}$ = 50) $\underline{p}$ = .000
POC-SU (Beh)				---

Note. TS = taking steps, A = action, Beh = behavioural.

Stages of Change Readiness and Treatment Eagerness

Scale

Principal Components Analysis. Principal factor extraction with varimax rotation was performed on the 19 items of the SOCRATES. Three factors were extracted and cumulatively accounted for 62.7% of the variance (see Table 10). Component loadings and communalities are ordered and grouped by size to assist interpretation (see Table 11). The majority of the component loadings were greater than .55 which Comrey and Lee (1992, as cited in Tabachnick & Fidell, 2001) would describe as good. A visual inspection of the content of each factor shows that Factor 1 consists of mostly Recognition items, although two Ambivalence items and one Taking Steps item are also included. Factor 2 consists of mostly Taking Steps items and Factor 3 is made up of Ambivalence items. This factor structure is similar to that of Miller and Tonigan (1996). The original configuration may have been reproduced more precisely if the current sample had been large enough. The SOCRATES three-factor-solution was retained for analysis in the current thesis.

Univariate and Multivariate Analyses: Phase I and II testing. The subscales of the SOCRATES were first examined to determine in which subscales research participants scored highest. Overwhelmingly offenders had

Table 10

Principle Components of the Stages of Change Readiness and Treatment Eagerness Scale

Component	Eigenvalue	Percentage of Variance	Culmulative Percentage
1	7.69	40.5	40.5
2	2.91	15.3	55.8
3	1.32	6.9	62.7

Table 11

Principle Component Loadings of the Stages of Change
Readiness and Treatment Eagerness Scale

Item	<u>Component Loading</u>			Communality
	1	2	3	
Rec10	.86			.78
Rec15	.85			.78
Rec17	.85			.74
Rec7	.78			.70
Rec12	.77			.74
Rec3	.72			.70
TS14	.61			.60
Am6	.53			.52
Am11	.42			.18
TS8		.85		.75
TS13		.80		.75
TS18		.81		.71
TS9		.71		.56
TS4		.68		.47
TS19		.67		.59
Rec1		.55		.56
TS5		.54		.40
Am2			.83	.68
Am16			.73	.72

the highest scores in the Taking Steps subscale across conditions and phases of testing (see Table 12). An initial analysis consisted of summing individual change between Phase I and Phase II testing and between Phase II and III testing. These two manually calculated variables were then submitted, separately, to a chi square analysis with condition. In both chi squares there were no significant differences ($p > .05$) for the manually calculated change between Phase I and II testing and between Phase II and III testing across conditions.

Multivariate statistics were used as an initial procedure to address each readiness to change hypothesis. The SOCRATES was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I and phase II of Recognition, Ambivalence, and Taking Steps subscales) mixed MANOVA. The result was nonsignificant, $p > .05$. Univariate analyses were then attempted. Tabachnick & Fidell (1989) discuss how a multivariate F is often not as powerful as a univariate F, when one is interested in a particular dependent variable, and significance can be lost. In the case where the multivariate F is nonsignificant, "report the nonsignificant multivariate F and offer the univariate...result as a guide to future research, with only tentative interpretation" (Tabachnick & Fidell, 1989,

Table 12

Highest Scored Subscales by Group and Time for the Stages of Change Readiness and Treatment Eagerness Scale

Group	Test1			Test2			Test3		
	Rec	Am	TS	Rec	Am	TS	Rec	Am	TS
MI	6	0	22	8	0	20	0	0	17
IC	3	0	24	3	0	24	0	0	13
NC	4	0	25	7	0	22	1	0	13
	<u>n</u> = 84			<u>n</u> = 84			<u>n</u> = 44		

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, Rec = recognition, Am = ambivalence, TS = taking steps.

p. 399). In addition, univariate tests were planned to assess the experimental hypotheses regarding readiness to change instruments. A 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Recognition, phase II Recognition) found a main effect of testing time, $F(1, 81) = 4.61$, $MSe = 5.99$, $p < .05$ (see Table 13 and Figure 1). All research participants significantly decreased their scores from Phase I to Phase II testing. A 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Ambivalence, phase II Ambivalence) mixed ANOVA was then performed. A main effect of testing time approached significance, $F(1, 81) = 3.87$, $MSe = 5.51$, $p = .053$ (see Table 14 and Figure 2), where all participants seem to have decreased their scores in Ambivalence from Phase I to Phase II testing. A similar analysis with the Taking Steps subscale produced nonsignificant results ($p > .05$).

Attempts were made to subdivide the samples in order to make them more homogeneous, as done by Ginsburg (2000). First only research participants who scored highest in Recognition at Phase I testing were selected and the analyses were repeated on them with nonsignificant results ($p > .05$). Then only research participants who had scored highest in Taking Steps were selected, the analyses

Table 13

Analysis of Variance of the Stages of Change Readiness and Treatment Eagerness Scale Recognition Subscale (Phase I, II) by Condition

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	3576.09	81	44.15		
CONDITION	30.49	2	15.24	.35	.709
WITHIN CELLS	485.18	81	5.99		
TESTING TIME	27.62	1	27.62	4.61	.035*
CONDITION BY TESTING TIME	7.29	2	3.65	.61	.547

Time Main Effect Totals of the Stages of Change Readiness and Treatment Eagerness Scale Recognition Subscale

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
TOTALS	29.76	4.73	84	28.95	5.20	84

*p < .05.

Figure 1. Phase I and II Mean SOCRATES Recognition

Scores: Significant Main Effect of Time.

Table 14

Analysis of Variance of the Stages of Change Readiness and Treatment Eagerness Scale Ambivalence Subscale (Phase I, II) by Condition

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	1416.56	81	17.49		
CONDITION	1.09	2	.54	.03	.969
WITHIN CELLS	446.63	81	5.51		
TESTING TIME	21.33	1	21.33	3.87	.053
CONDITION BY TESTING TIME	6.95	2	3.47	.63	.535

Time Main Effect Totals of the Stages of Change Readiness and Treatment Eagerness Scale Ambivalence Subscale

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
TOTALS	14.18	3.17	84	13.46	3.53	84

Figure 2. Phase I and II Mean SOCRATES Ambivalence

Scores: Main Effect of Time Approaching Significance.

repeated, and this also resulted in nonsignificant results.

Univariate and Multivariate Analyses: Phase III testing. The SOCRATES was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 3 (Testing time: phase I, phase II, and phase III of Recognition, Ambivalence, and Taking Steps subscales) mixed MANOVA. There was a main effect of Testing time using Pillais Trace, $\eta^2 = .6070$, $F(6, 36) = 9.27$, $p < .001$ (see Table 15 and Figure 3). Research participants increased their scores on Recognition and Taking Steps Phase III testing, after completion of the OSAP program. In contrast, Ambivalence scores decreased slightly.

An attempt to subdivide the sample for Phase III testing was not considered appropriate because of too small sample size.

Readiness to Change Questionnaire: Treatment Version

Principal Components Analysis. Principal factor extraction with varimax rotation was completed on the 15 items of the RCQ-TV. Three factors were extracted and cumulatively accounted for 59.6% of the variance (see Table 16). Component loadings (see Table 17). The majority of the component loadings were greater than .63 which Comrey and Lee (1992, as cited in Tabachnick & Fidell, 2001) would describe as very good. As per

Table 15

Multivariate Analysis of Variance of the Stages of Change Readiness and Treatment Eagerness Scale Recognition, Ambivalence, and Taking Steps Subscales (Phase I, II, III) by Condition

Source of Variance	Pillais	Hypoth. DF	Error DF	Multivariate F	Sig of F
CONDITION	.07031	6	80	.48584	.817
TESTING TIME	.60701	6	36	9.26757	.000***
CONDITION BY TESTING TIME	.25674	12	74	.90820	.543

Time Main Effect Totals of the Stages of Change Readiness and Treatment Eagerness Scale Recognition, Ambivalence, and Taking Steps Subscales (n = 44)

	Phase I		Phase II		Phase III	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
REC	29.41	4.95	28.05	5.52	29.86	4.89
AM	14.34	3.38	13.39	3.62	13.18	4.04
TS	34.52	4.57	33.84	3.82	37.18	3.45

Note. REC = Recognition, AM = Ambivalence, TS = Taking Steps.

*** $p < .001$

Figure 3. Phase I, II, and III Mean SOCRATES
Recognition, Ambivalence, and Taking Steps Scores: Main
Effect of Time.

Table 16

Principle Components of the Readiness to Change
Questionnaire

Component	Eigenvalue	Percentage of Variance	Cumulative Percentage
1	4.88	32.5	32.5
2	2.44	16.3	48.8
3	1.62	10.8	59.6

Table 17

Principle Component Loadings of the Readiness to Change Questionnaire

Item	<u>Component Loading</u>			Communality
	1	2	3	
PC4	.84			.72
PC1	.80			.66
PC13	.79			.72
PC7	.73			.59
A12		.83		.71
A15		.81		.71
A6		.75		.58
A9		.66		.78
A3			.77	.68
C11			.72	.53
C5			.65	.54
C14			.45	.52
C8			.34	.47
PC10				.39
C2				.35

Tabachnick and Fidell (2001), loadings under .32 were not interpreted and their component loadings are omitted from Table 17. An examination of factor content shows that the three factors correspond almost exactly to Precontemplation, Action, and Contemplation. This factor structure is very similar to the original factor structure presented in Heather et al. (1999). The RCQ-TV original three-factor-solution was retained for analysis in the current thesis.

Univariate and Multivariate Analyses: Phase I and II testing. It was determined on the RCQ-TV in which subscales research participants scored highest. Using the RCQ-TV, offenders had consistently the highest scores in Action across conditions and phases of testing (see Table 18). The designated highest subscale score for Phases I, II, and III testing were separately submitted to chi squares and each produced nonsignificant results ($p > .05$). Individual change was determined by summing the stage changes between Phase I and Phase II testing and between Phase II and III testing. These manually calculated variables were separately analyzed using chi squares and there were no significant differences.

The RCQ-TV was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I and phase II Precontemplation,

Table 18

Highest Scored Stages of Change by Group and Time for the
Readiness to Change Questionnaire: Treatment Version

Group	Test1			Test2			Test3		
	PC	C	A	PC	C	A	PC	C	A
MI	0	8	21	0	7	22	0	2	14
IC	0	3	24	0	5	22	0	3	11
NC	0	9	21	0	9	21	0	0	13
	<u>n</u> = 86			<u>n</u> = 86			<u>n</u> = 43		

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, PC = precontemplation, C = contemplation, A = action.

Contemplation, and Action scores) mixed MANOVA. This produced nonsignificant results, $p > .05$. The RCQ-TV was then analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Action, phase II Action) mixed ANOVA. There was an interaction between condition and testing time, $F(2, 83) = 5.32$, $MSe = 1.25$, $p < .05$ (see Table 19 and Figure 4), where research participants in the motivational interviewing condition seem to increase in action after the intervention, while the interview control and the no-interview control seem to decrease. Two t statistic planned comparisons (motivational interviewing versus interview control and motivational interviewing versus no-interview control) were manually calculated using Bonferroni adjustment for family wise error rate (Hays, 1988). Unfortunately, planned comparison results using these RCQ-TV phase II action scores both showed nonsignificant results, $p > .025$. Figure 4 clearly shows that the motivational interviewing scores were increasing from pre- to post-test, while the two control groups' scores were decreasing. Clearly, just examining post-test means in a planned comparison is not sufficient to capture what is happening in the data. As such, an alternative way of approaching the data was then pursued. Difference scores in a one-way ANOVA seemed appropriate in order to,

Table 19

Analysis of Variance of the Action Subscale of the
Readiness to Change Questionnaire: Treatment Version
(Phase I, II) by Condition

Tests of Significance Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	839.35	83	10.11		
CONDITION	30.08	2	15.04	1.49	.232
WITHIN CELLS	103.40	83	1.25		
TESTING TIME	.48	1	.48	.39	.536
CONDITION BY TESTING TIME	10.63	2	5.32	4.27	.017*

Descriptive Statistics of the Action Subscale of the
Readiness to Change Questionnaire: Treatment Version

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
MI	6.24	2.68	29	6.83	2.45	29
IC	7.67	2.04	27	7.30	2.18	27
NC	6.90	2.47	30	6.37	2.39	30

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control.

* $p < .05$.

Figure 4. Phase I and II Mean RCQ-TV Action Scores:
Significant Condition by Time Interaction.

not just examine the phase II action scores, but to account for the change between phase I and phase II means (Tabachnick & Fidell, 2001). This was achieved with a 3-level (Condition: motivational interview, control interview, no interview) one-way between-subjects ANOVA with one dependent variable (Difference scores made from Action at Phase II minus Action at Phase I). The motivational interviewing condition had significantly greater Action scale scores at Phase II than the other two conditions, $F(2, 83) = 4.27$, $MSe = 10.63$, $p < .05$. A summary of the ANOVA is in Table 20. Again, two t-statistic planned comparisons (motivational interviewing versus interview control and motivational interviewing versus no-interview control) were manually calculated using Bonferroni adjustment for family wise error rate (Hays, 1988). The first planned comparison, $t(83) = 3.27$, $p < .025$, indicated that the motivational interviewing condition had significantly greater change from pre- to post-intervention scores on the Action subscale as compared to the interview control condition. The second planned comparison, $t(83) = 3.82$, $p < .025$, indicated that the motivational interviewing condition had significantly greater change from pre- to post-intervention scores on the Action subscale as compared to the no-interview control condition. Mixed ANOVA's with the

Table 20

Analysis of Variance of Difference Scores on Phase II
Action Minus Phase I Action Subscale Scores of the
Readiness to Change Questionnaire: Treatment Version

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
BETWEEN GROUPS	21.26	2	10.63	4.27	.017*
WITHIN GROUPS	206.80	83	2.49		
TOTAL	228.06	85			

Mean Difference Scores on Phase II Action Minus Phase I
Action Subscale Scores of the Readiness to Change
Questionnaire: Treatment Version

	<u>M</u>	<u>SD</u>	<u>n</u>
MOTIVATIONAL INTERVIEWING	.59	1.50	29
INTERVIEW CONTROL	-.37	1.39	27
NO-INTERVIEW CONTROL	-.53	1.80	30

* $p < .05$.

Precontemplation and Contemplation subscales respectively, produced nonsignificant effects.

Attempts were made to subdivide the samples of the RCQ-TV in order to make them more homogeneous (Ginsburg, 2000). First only research participants who scored highest in Contemplation at Phase I testing were selected and analyses were repeated on them with nonsignificant results ($p > .05$). Then only research participants who had scored highest in Action were selected and the analyses were repeated. Multivariate analyses produced nonsignificant results. The RCQ-TV was then analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Action, phase II Action) mixed ANOVA. There was a main effect of testing time, $F(1, 63) = 5.30$, $MSe = 1.03$, $p < .05$ (see Table 21 and Figure 5) and an interaction between condition and testing time, $F(2, 63) = 4.57$, $MSe = 1.03$, $p < .05$. Research participants in the motivational interviewing condition again seemed to increase in their scores in action after the intervention, while the interview control and the no-interview control seemed to decrease. A Scheffe post hoc test was utilized to determine the nature of the interaction, but this produced nonsignificant effects ($p > .05$).

Table 21

Analysis of Variance of the Action Subscale of the Readiness to Change Questionnaire: Treatment Version (Phase I, II) by Condition Where Research Participants had Tested Highest on the Action Subscale at Pretest

Tests of Significance Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	487.10	63	7.73		
CONDITION	6.03	2	3.02	.39	.679
WITHIN CELLS	64.60	63	1.03		
TESTING TIME	5.44	1	5.44	5.30	.025*
CONDITION BY TESTING TIME	9.38	2	4.69	4.57	.014*

Descriptive Statistics of the Action Subscale of the Readiness to Change Questionnaire: Treatment Version Where Research Participants had Tested Highest on the Action Subscale at Pretest

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
MI	7.00	2.19	21	7.29	2.28	21
IC	7.88	1.92	24	7.42	2.19	24
NC	8.05	1.88	21	7.00	2.07	21

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control.

* $p < .05$.

Figure 5. Phase I and II Mean RCQ-TV Action Scores
Where Research Participants had Tested Highest on the
Action Subscale at Pretest: Significant Main Effect of
Time and Condition by Time Interaction.

As was done previously, a 3-level (Condition: motivational interview, control interview, no interview) one-way between-subjects ANOVA with one dependent variable (Difference scores made from Action at Phase II minus Action at Phase I) was conducted. Within this subsample of offenders who scored highest on the Action subscale at pretest, the analysis of the difference scores showed that the motivational interviewing condition again seemed to have significantly greater Action scale scores at Phase II than the other two conditions $F(2, 63) = 4.57$, $MSe = 2.05$, $p < .05$ (see Table 22). In examining the Scheffe post hoc test results, however, it was the motivational interviewing condition which had significantly greater scores as compared only with the no-interview control. Unfortunately, the difference between the motivational interviewing condition and the interview control condition was not significant ($p > .05$).

Univariate and Multivariate Analyses: Phase III testing. The RCQ-TV was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 3 (Testing time: phase I, phase II, and phase III Precontemplation, Contemplation, and Action) mixed MANOVA. There was a main effect of Testing time using Pillais Trace, $\eta^2 = .3777$, $F(6, 35) = 3.54$, $p < .01$ (see Table 23 and Figure 6), where research participants increased their

Table 22

Analysis of Variance of Difference Scores on Phase II Action Minus Phase I Action Subscale Scores of the Readiness to Change Questionnaire: Treatment Version Where Research Participants had Tested Highest on the Action Subscale at Pretest

Tests of Significance Source of Variation	SS	DF	MS	F	Sig of F
BETWEEN GROUPS	18.76	2	9.38	4.57	.014*
WITHIN GROUPS	129.20	63	2.05		
TOTAL	147.95	65			

Mean Difference Scores on Phase II Action Minus Phase I Action Subscale Scores of the Readiness to Change Questionnaire: Treatment Version Where Research Participants had Tested Highest on the Action Subscale at Pretest

	<u>M</u>	<u>SD</u>	<u>n</u>
MOTIVATIONAL INTERVIEWING	.29	1.35	21
INTERVIEW CONTROL	-.46	1.44	24
NO-INTERVIEW CONTROL	-1.05	1.50	21

*p < .05.

Table 23

Multivariate Analysis of Variance of the Precontemplation, Contemplation, and Action Subscales of the Readiness to Change Questionnaire: Treatment Version (Phase I, II, III) by Condition

Source of Variance	Pillais	Hypoth. DF	Error DF	Multivariate F	Sig of F
CONDITION	.18533	6	78	1.32769	.255
TESTING TIME	.37767	6	35	3.54006	.008**
CONDITION BY TESTING TIME	.30504	12	72	1.07981	.390

Time Main Effect Totals of the Precontemplation, Contemplation, and Action Subscales of the Readiness to Change Questionnaire: Treatment Version (n = 43)

	Phase I		Phase II		Phase III	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
PC	-6.42	3.65	-6.88	2.49	-7.91	2.61
C	4.42	2.74	4.21	2.63	4.07	3.03
A	7.21	2.29	7.09	2.24	8.49	2.07

Note. PC = Precontemplation, C = Contemplation, A = Action.

*p < .01

Figure 6. Phase I, II, and III Mean RCQ-TV
Precontemplation, Contemplation, and Action Scores:
Significant Main Effect of Time.

scores on the Action subscale at Phase III testing, after completion of the OSAP program. Similarly, as would be expected after completion of a program like OSAP, Precontemplation scores decreased at Phase III and Contemplation scores also decreased slightly.

Phase III testing data was not further subdivided for analyses because subdivisions would result in too small sample sizes.

University of Rhode Island Change Assessment Scale

Principal Components Analysis. Principal factor extraction with varimax rotation was performed on the 32 items of the URICA. Six factors were extracted and cumulatively accounted for 65.8% of the variance (see Table 24). Component loadings and communalities are ordered and grouped by size in Table 25. The component loadings were greater than .45, which Comrey and Lee (1992, as cited in Tabachnick & Fidell, 2001) would indicate as being fair. Upon examination, Factor 1 is made up of mostly Maintenance items, although two Contemplation items and three Action items are also included. The remaining factors are more uniform. Factor 2 could be named Action, Factor 3 and Factor 6 are both Precontemplation, and Factors 4 and 5 are Contemplation. This factor structure is more spread out than that of original factor structure (McConnaughey et al., 1983),

Table 24

Principle Components of the University of Rhode Island
Change Assessment

Component	Eigenvalue	Percentage of Variance	Culmulative Percentage
1	10.84	33.9	33.9
2	3.79	11.8	45.7
3	2.03	6.3	52.1
4	1.76	5.5	57.6
5	1.40	4.4	62.0
6	1.22	3.8	65.8

Table 25

Principle Component Loadings of the University of Rhode
Island Change Assessment

Item	Component Loading						Communality
	1	2	3	4	5	6	
M18	.76						.62
M28	.76						.65
M32	.76						.65
A17	.70						.64
M16	.69						.62
M9	.67						.54
M22	.66						.60
M6	.64						.58
A20	.64						.62
C19	.63						.61
C15	.54						.67
A10	.51						.57
M27	.49						.70
A30		.82					.72
A14		.80					.77
A25		.79					.70
A3		.78					.75
A7		.75					.77
PC5			.83				.79
PC11			.77				.75
PC13			.55				.70
PC23			.51				.51
PC1			.45				.74
C12				.81			.74
C24				.71			.59
C21				.61			.65
C2					.77		.66
C4					.60		.65
C8					.57		.68
PC31						.77	.64
PC29						.73	.59
PC26						.49	.57

however, it seemed to group the variables reasonably. A much larger sample size may have produced a more similar factor structure to the original. The original four-factor-solution was utilized in the current analysis.

Univariate and Multivariate Analyses: Phase I and II testing. The subscales on the URICA were examined to determine in which subscales research participants scored highest. Offenders had the highest scores in either the Contemplation or Action stages of change (see Table 26). The designated highest subscale score for Phases I, II, and III testing were separately submitted to chi squares and each produced nonsignificant results ($p > .05$). An initial analysis consisted of summing individual change between Phase I and Phase II testing and between Phase II and III testing. These manually calculated variables were separately analyzed using chi squares. In both chi squares there were no significant differences between the manually calculated change between Phase I and II testing and Phase II and III testing across conditions.

A 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I TAS, phase II TAS) mixed ANOVA was then used to analyze the URICA. The result was nonsignificant ($p > .05$). A 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I and phase II

Table 26

Highest Scored Stages of Change by Group and Time for the University of Rhode Island Change Assessment

Group	Test1				Test2				Test3			
	PC	C	A	M	PC	C	A	M	PC	C	A	M
MI	0	21	7	1	0	19	9	1	0	11	8	0
IC	0	20	8	1	0	14	15	0	0	11	5	0
NC	0	17	12	1	0	20	8	2	0	5	10	0
	<u>n</u> = 88				<u>n</u> = 88				<u>n</u> = 50			

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, PC = precontemplation, C = contemplation, P = preparation, A = action, M = maintenance.

Precontemplation, Contemplation, Action, and Maintenance scores) mixed MANOVA was then used as an alternate way to analyze the URICA. Again, the result was nonsignificant.

Attempts were made to subdivide the samples in order to make them more homogeneous (Ginsburg, 2000). First only research participants who scored highest in Contemplation at Phase I testing were selected and analyses were repeated on them with nonsignificant results ($p > .05$). Then only research participants who had scored highest in Action were selected, the analyses repeated, and this also resulted in nonsignificant results.

Univariate and Multivariate Analyses: Phase III testing. A 3 (Condition: motivational interview, control interview, no interview) X 3 (Testing time: phase I TAS, phase II TAS, phase III TAS) mixed ANOVA on the URICA showed a main effect of Testing time, $F(2, 94) = 12.76$, $MSe = 73.94$, $p < .001$ (see Table 27 and Figure 7), where research participants increased their scores on Phase III testing, after completion of the OSAP program. A 3 (Condition: motivational interview, control interview, no interview) X 3 (Testing time: phase I, phase II, and phase III Precontemplation, Contemplation, Action, and Maintenance scores) mixed MANOVA was conducted. As can be seen in Table 28 and Figure 8, there was a main effect of

Table 27

Analysis of Variance of the University of Rhode Island
Change Assessment Theoretical Action Score (Phase I, II,
III) by Condition

Tests of Significance Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	18089.97	47	384.89		
CONDITION	74.81	2	37.40	.10	.908
WITHIN CELLS	6950.26	94	73.94		
TESTING TIME	1886.60	2	943.30	12.76	.000***
CONDITION BY TESTING TIME	15.85	4	3.96	.05	.995

Time Main Effect Totals of the University of Rhode Island
Change Assessment Theoretical Action Score (n = 50)

	Phase I		Phase II		Phase III	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
TOTALS	80.12	11.82	79.88	12.64	87.56	14.61

***p < .001

Figure 7. Phase I, II, and III Mean URICA TAS Scores:
Significant Main Effect of Time.

Table 28

Multivariate Analysis of Variance of the University of Rhode Island Change Assessment Precontemplation, Contemplation, Action, and Maintenance Scores (Phase I, II, III) by Condition

Source of Variance	Pillais	Hypoth. DF	Error DF	Multivariate F	Sig of F
CONDITION	.08693	8	90	.51118	.845
TESTING TIME	.58040	8	40	6.91620	.000***
CONDITION BY TESTING TIME	.17731	16	82	.49856	.941

Time Main Effect Totals of the University of Rhode Island Change Assessment Precontemplation, Contemplation, Action, and Maintenance Scores (n = 50)

	Phase I		Phase II		Phase III	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
PC	15.08	4.11	15.10	4.59	12.54	4.07
C	33.58	3.64	33.16	3.87	35.24	4.04
A	33.42	2.86	33.26	2.86	36.14	3.36
M	28.20	5.62	28.56	4.78	28.72	5.81

Note. PC = Precontemplation, C = Contemplation, A = Action, M = Maintenance.

***p < .001

Figure 8. Phase I, II, and III Mean URICA
Precontemplation, Contemplation, Action, and Maintenance
Scores: Significant Main Effect of Time.

Testing time, Pillais Trace $\lambda = .5804$, $F(8, 40) = 6.92$, $p < .001$. Research participants increased their scores on the Action and Contemplation subscales at Phase III testing, after completion of the OSAP program. In contrast, as one might expect, Precontemplation scores decreased at Phase III testing. Interestingly, Maintenance scores seem to have stayed relatively the same.

Attempts to subdivide the samples for Phase III testing was not considered appropriate because of too small sample size.

Processes of Change Questionnaire: Substance Use Version

Principal Components Analysis. Principal factor extraction with varimax rotation was completed on the 20 items of the POC-SU. Four factors were extracted and cumulatively accounted for 60.7% of the variance (see Table 29). Component loadings and communalities are ordered and grouped by size in Table 30. The majority of component loadings were greater than .45, which Comrey and Lee (1992, as cited in Tabachnick & Fidell, 2001) would deem as fair. Upon examination, Factor 1 and 2 consist of combinations of Behavioural and Cognitive items, Factor 3 can be labelled as Cognitive, and Factor 4 can be labeled Behavioural. This present factor structure is more complex than that presented in DiClemente et al. (1996).

Table 29

Principle Components of the Processes of Change
Questionnaire-Substance Use Version

Component	Eigenvalue	Percentage of Variance	Cumulative Percentage
1	7.28	36.4	36.4
2	1.97	9.9	46.3
3	1.60	8.0	54.3
4	1.29	6.4	60.7

Table 30

Principle Component Loadings of the Processes of Change
Questionnaire-Substance Use Version

Item	Component Loading				Communality
	1	2	3	4	
B16	.74				.59
B13	.69				.66
B19	.65				.59
B17	.64				.55
C20	.57				.47
C8	.51				.64
C7	.44				.43
B1		.71			.58
C5		.71			.65
C9		.67			.61
C3		.55			.48
B6		.48			.62
B10		.44			.50
C4			.78		.48
C14			.76		.67
C15			.66		.67
C12			.64		.58
B2				.84	.77
B11				.83	.78
B18				.65	.65

It is possible that the factor structure differs because the items used in the current thesis were adapted from the two alternative forms of the Processes of Change Scale for Alcohol as neither form in its entirety was appropriate for drug use items. Alternatively, the difference in factor structures is likely affected by the much smaller sample in the present study than is required for a principle component analysis. The original two-factor-solution was utilized in the current analysis.

Univariate and Multivariate Analyses: Phase I and II testing. In examining the subscales of the POC-SU, which subscale is scored highest (Cognitive or Behavioural) depends upon condition and phase of testing (see Table 31). The designated highest subscale score for each Phase of testing was submitted separately to a chi square with condition and the results were nonsignificant ($p > .05$). Individual change between subscales was determined by summing the stage changes between Phase I and Phase II testing and between Phase II and III testing. These manually calculated variables were separately analysed using chi squares and there were no significant differences.

The POC-SU was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I and phase II Cognitive and

Table 31

Highest Scored Processes of Change by Group and Time for
the Processes of Change Questionnaire: Substance Use
Version

Group	Test1		Test2		Test3	
	C/E	Beh	C/E	Beh	C/E	Beh
MI	20	12	21	11	8	13
IC	14	17	14	17	5	11
NC	18	13	17	14	6	9
	<u>n</u> = 94		<u>n</u> = 94		<u>n</u> = 52	

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control, C/E = cognitive/experiential, Beh = behavioural.

Behavioural scores) mixed MANOVA. Results were nonsignificant, $p > .05$, so univariate analyses were pursued. The POC-SU was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Behavioural, phase II Behavioural) mixed ANOVA. There was a significant interaction between condition and testing time, $F(2, 91) = 3.81$, $MSe = 10.17$, $p < .05$ (see Table 32 and Figure 9), where research participants in the motivational interviewing condition seem to increase in their use of behavioural processes after the intervention, while the interview control and the no-interview control remain relatively the same. Two t-statistic planned comparisons (motivational interviewing versus interview control and motivational interviewing versus no-interview control) were manually calculated using Bonferroni adjustment for family wise error rate (Hays, 1988). The first planned comparison, $t(91) = 3.70$, $p < .025$, indicated that the motivational interviewing condition had significantly greater post-intervention scores on the Behavioural subscale as compared to the interview control condition. The second planned comparison, $t(91) = 2.51$, $p < .025$, indicated that the motivational interviewing condition had significantly greater post-intervention scores on the Behavioural subscale as compared with the no-interview

Table 32

Analysis of Variance of the Behavioural Subscale of the
Processes of Change Questionnaire: Substance Use Version
(Phase I, II) by Condition

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	10170.43	91	111.76		
CONDITION	25.60	2	12.80	.11	.892
WITHIN CELLS	925.85	91	10.17		
TESTING TIME	31.69	1	31.69	3.11	.081
CONDITION BY TESTING TIME	77.46	2	38.73	3.81	.026*

Descriptive Statistics of the Behavioural Subscale of the
Processes of Change Questionnaire: Substance Use Version

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
MI	31.63	7.56	32	34.25	7.83	32
IC	32.13	8.71	31	32.13	7.99	31
NC	32.97	6.65	31	32.81	7.97	31

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control.

* $p < .05$.

Figure 9. Phase I and II Mean POC-SU Behavioural
Scores: Significant Condition by Time Interaction.

control condition.

As with the previous results of the RCQ-TV discussed earlier, Figure 9 clearly shows that the motivational interviewing scores were increasing from pre- to post-test. The scores of both the control groups seem to be remaining the same. As discussed earlier, it is important not just to examine post-test means in a planned comparison, but also to look at the change between means from pre- to post-intervention. Difference scores in a one-way ANOVA were utilized to try to account for the difference between phase I and phase II means. This was achieved with a 3-level (Condition: motivational interview, control interview, no interview) one-way between-subjects ANOVA with one dependent variable (Difference scores made from Behavioural at Phase II minus Behavioural at Phase I). The motivational interviewing condition had significantly greater Behavioural scores at Phase II than the other two conditions, $F(2, 91) = 3.81$, $MSe = 20.35$, $p < .05$ (see Table 33). Again, two t-statistic planned comparisons (motivational interviewing versus interview control and motivational interviewing versus no-interview control) were manually calculated using Bonferroni adjustment for family wise error rate (Hays, 1988). The first planned comparison, $t(91) = 3.25$, $p < .025$, indicated that the motivational interviewing

Table 33

Analysis of Variance of Difference Scores on Phase II Behavioural Minus Phase I Behavioural Subscale Scores of the Processes of Change Questionnaire: Substance Use Version

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
BETWEEN GROUPS	154.91	2	77.46	3.81	.026*
WITHIN GROUPS	1851.69	91	20.35		
TOTAL	2006.61	93			

Mean Difference Scores on Phase II Behavioural Minus Phase I Behavioural Subscale Scores of the Processes of Change Questionnaire: Substance Use Version

	<u>M</u>	<u>SD</u>	<u>n</u>
MOTIVATIONAL INTERVIEWING	2.63	4.62	32
INTERVIEW CONTROL	.00	4.58	31
NO-INTERVIEW CONTROL	-.16	4.33	31

*p < .05.

condition had significantly greater change from pre- to post-intervention scores on the Behavioural subscale as compared to the interview control condition. The second planned comparison, $t(91) = 3.44$, $p < .025$, indicated that the motivational interviewing condition had significantly greater change from pre- to post-intervention scores on the Behavioural subscale as compared to the no-interview control condition. Mixed ANOVA's with the Cognitive subscale produced nonsignificant effects, $p > .05$.

Attempts were made to subdivide the samples in order to make them more homogeneous (Ginsburg, 2000). First only research participants who scored highest in Cognitive subscale at Phase I testing were selected and analyses were repeated on them. The POC-SU was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Behavioural, phase II Behavioural) mixed ANOVA. There was a main effect of testing time, $F(1, 49) = 8.05$, $MSe = 9.41$, $p < .01$ (see Table 34 and Figure 10) and an interaction between condition and testing time, $F(2, 49) = 4.32$, $MSe = 9.41$, $p < .05$. Research participants in the motivational interviewing condition again seemed to increase their behavioural scores after the intervention, while the interview control and the no-interview control seemed remain relatively the same. A Scheffe post hoc test was

Table 34

Analysis of Variance of the Behavioural Subscale of the Processes of Change Questionnaire: Substance Use Version Where Research Participants had Tested Highest on the Cognitive Subscale at Pretest (Phase I, II) by Condition

Tests of Significance					
Source of Variation	SS	DF	MS	F	Sig of F
WITHIN CELLS	4890.39	49	99.80		
CONDITION	92.46	2	46.23	.46	.632
WITHIN CELLS	461.31	49	9.41		
TESTING TIME	75.79	1	75.79	8.05	.007**
CONDITION BY TESTING TIME	81.34	2	40.67	4.32	.019*

Descriptive Statistics of the Behavioural Subscale of the Processes of Change Questionnaire: Substance Use Version Where Research Participants had Tested Highest on the Cognitive Subscale at Pretest

	Phase I			Phase II		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
MI	29.70	7.02	20	33.80	7.28	20
IC	29.07	7.59	14	29.93	7.10	14
NC	31.33	6.53	18	31.56	8.67	18

Note. MI = motivational interviewing, IC = interview control, NC = no-interview control.

* $p < .05$, ** $p < .01$.

Figure 10. Phase I and II Mean POC-SU Behavioural Scores Where Research Participants had Tested Highest on the Cognitive Subscale: Significant Condition by Time Interaction.

utilized to determine the nature of the interaction, but this produced nonsignificant effects ($p > .05$).

As was done previously, a 3-level (Condition: motivational interview, control interview, no interview) one-way between-subjects ANOVA with one dependent variable (Difference scores made from Behavioural at Phase II minus Behavioural at Phase I) was conducted within this subsample of offenders who scored highest on the Cognitive subscale at pretest. The analysis of the difference scores showed that the motivational interviewing condition again seemed to have significantly greater Behavioural scores at Phase II than the other two conditions $F(2, 49) = 4.32$, $MSe = 18.83$, $p < .05$ (see Table 35). In examining the Scheffe post hoc test results, however, it was the motivational interviewing condition which had significantly greater scores as compared only with the no-interview control. Unfortunately, the difference between the motivational interviewing condition and the interview control condition was not significant ($p > .05$).

Research participants who had scored highest in the Behavioural subscale were then selected for analyses and these had nonsignificant results ($p > .05$).

Univariate and Multivariate Analyses: Phase III testing. The POC-SU was analyzed using a 3 (Condition: motivational interview, control interview, no interview)

Table 35

Analysis of Variance of Difference Scores on Phase II Behavioural Minus Phase I Behavioural Subscale Scores of the Processes of Change Questionnaire: Substance Use Version Where Research Participants had Tested Highest on the Cognitive Subscale at Pretest

Tests of Significance Source of Variation	SS	DF	MS	F	Sig of F
BETWEEN GROUPS	162.68	2	81.34	4.32	.019*
WITHIN GROUPS	922.63	49	18.83		
TOTAL	1085.31	51			

Mean Difference Scores on Phase II Behavioural Minus Phase I Behavioural Subscale Scores of the Processes of Change Questionnaire: Substance Use Version Where Research Participants had Tested Highest on the Cognitive Subscale at Pretest

	<u>M</u>	<u>SD</u>	<u>n</u>
MOTIVATIONAL INTERVIEWING	4.10	4.23	20
INTERVIEW CONTROL	.86	4.77	14
NO-INTERVIEW CONTROL	.22	4.11	18

*p < .05.

X 3 (Testing time: phase I, phase II, and phase III Cognitive and Behavioural scores) mixed MANOVA. There was a main effect of Testing time using Pillais Trace, $\eta^2 = .6371$, $F(4, 46) = 20.19$, $p < .001$ (see Table 36 and Figure 11). Research participants increased their scores on the both the Cognitive and Behavioural subscales at Phase III testing, after completion of the OSAP program.

Further dividing the samples for Phase III testing was not considered appropriate because of too small sample size.

Unsuccessful Subsamples

Attempts were also made to subdivide the sample based on scores from the DAST with each stage of change questionnaires described above. However, there were no significant correlations between DAST scores and every subscale of every test across phases of testing. In addition, when only more problematic drug use (substantial and severe on the DAST) on DAST level scores were selected analyses could not be conducted because of the too small and too uneven sample sizes. This problem was also apparent when selecting only less problematic drug use (low and moderate on the DAST). As a result, the sample could not be further subdivided into drug severity levels for analysis.

Table 36

Analysis of Variance of the Cognitive and Behavioural
Subscales of the Processes of Change Questionnaire:
Substance Use Version (Phase I, II, III) by Condition

Source of Variance	Pillais	Hypoth. DF	Error DF	Multivariate F	Sig of F
CONDITION	.04911	4	98	.61671	.652
TESTING TIME	.63707	4	46	20.18614	.000***
CONDITION BY TESTING TIME	.09995	8	94	.61808	.761

Time Main Effect Totals of the Cognitive and Behavioural
Subscales of the Processes of Change Questionnaire:
Substance Use Version (n = 52)

	Phase I		Phase II		Phase III	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
COG	32.90	6.50	33.23	6.80	38.71	7.45
BEH	32.48	6.88	33.96	6.96	40.48	6.58

Note. COG = Cognitive, BEH = Behavioural.

***p < .001

Figure 11. Phase I, II, and III Mean POC-SU Cognitive and Behavioural Scores: Significant Main Effect of Time.

Additional Variables

Univariate Analyses: Phase I and II testing. The level of ambivalence on the decisional balance was analyzed using a 3 (Condition: motivational interview, control interview, no interview) X 2 (Testing time: phase I Estimated-Ambivalence score, phase II Estimated-Ambivalence score) mixed ANOVA. This analysis produced nonsignificant results, $p > .05$.

Mixed ANOVAs performed separately on each of the three Phase I offender self-ratings (two problem recognition items and one willingness to participate in treatment item) produced nonsignificant results. Correlations between the individual variables and the subscales of the stage of change instruments were low to moderate and they conceptually made sense, however, because the offender rating variables did not show an effect of condition the aforementioned correlations were not included in the results.

Univariate Analyses: Phase III testing. The two self-report offender program ratings were analyzed in separate 3 level (Condition: motivational interview, control interview, no interview) one-way between-subjects ANOVAs with nonsignificant results ($p > .05$). The facilitator likert-type ratings were similarly all submitted to separate one-way between subjects ANOVAs with

condition as the independent variable with nonsignificant results. There were also no significant correlations between these offender ratings and the facilitator ratings. Correlations between the individual variables and the subscales of the stage of change instruments were again low to moderate, but were not included in the results section because there was no effect of condition.

Attendance levels were analyzed using a one-way between subjects ANOVA, producing nonsignificant differences ($p > .05$) across condition. A chi square, used to determine if completion rates differed across conditions, was also nonsignificant.

Discussion

There were a number of hypotheses in this study, most importantly it was proposed that there would be short-term effects of motivational interviewing. It was expected that compared to controls, offenders in the motivational interviewing condition would progress further in the stages of change for drug use (as indicated by the comparison of pre- to post-interview SOCRATES, RCQ-TV, and URICA) and would use more advanced processes of change (as indicated by the pre- to post-interview comparisons using the POC-SU). This prediction was supported with the results of the RCQ-TV and the POC-SU.

It was expected that motivational interviewing would result in decreased estimated ambivalence, increased ratings of problem recognition, and increased ratings of willingness to participate in treatment. Results showed no significant differences in estimated ambivalence between the conditions from pre- to post-testing. In addition, there were no significant differences in offender ratings of problem recognition or willingness to participate in treatment across conditions.

After completion of the substance abuse treatment program, it was hypothesized that, as compared to controls, offenders in the motivational interviewing condition would be more likely to have progressed further in the stages of change (as indicated by the comparison of post-interview to post-program SOCRATES, RCQ, and URICA) and would show increased use of more advanced processes of change (as indicated by the post-interview to post-program comparisons using the POC-SU). These predictions were not supported.

Compared to controls, it was proposed that offenders in the experimental condition would receive higher ratings of substance abuse treatment program participation by program facilitators. It was also predicted that facilitators would give offenders in the experimental condition better ratings concerning acquired knowledge and

skill use. In addition, it was expected that offenders in the motivational interviewing condition would indicate that they found the program more helpful than offenders in the control conditions and would also rate themselves higher in participation. Each of these hypotheses were not supported in the current study.

Finally, it was predicted that attendance levels and completion rates would be higher for the motivational interviewing condition as opposed to the two control conditions. This prediction was also not supported in the current study.

The significant results in this study will first be discussed in detail. Possibilities of why some of the hypotheses did not materialize in this study will then be clarified and disadvantages of the study will be described. Advantages of the study will be emphasized and future research will then be outlined.

The major contribution of this research is the modest demonstrated effect of motivational interviewing in a sample of drug abusing incarcerated offenders. Effects emerged with a stages of change instrument (the RCQ-TV) and a process of change instrument (the POC-SU).

With the RCQ-TV, there was significant change between motivational interviewing action scores from pre- to post-testing. Action scores were significantly increased from

pre- to post-test for those in the motivational interviewing condition. Looking even closer at the data, when only those research participants who had scored highest in Action were selected, the RCQ-TV results again seemed to show that the motivational interviewing condition had significantly greater positive change in Action scale scores from Phase I to II as compared to the control conditions. Conceptually, it makes sense that individuals, who are already motivated to change and are making changes, would be open to learning additional strategies in order to help them solidify their changing efforts and strengthen their commitment to change (Miller & Rollnick, 1991). Unfortunately, with this subsample, the statistical results only showed a significant difference between motivational interviewing and the no-interview control conditions. This may indicate that motivational interviewing was not more effective than a control interview for this subset of individuals, that the effect was not detected with this particular test because of too small sample size, or that the effect was not detected because a post hoc test had to be used since it was not a planned comparison. Alternatively, these results may demonstrate that there were some elements of the interview control condition that, although there was no focus on the target area of drug abuse and no motivational interviewing

strategies utilized, may have proven beneficial for the inmates participating. Mere attention--someone listening to them and interacting with them in a respectful, nonjudgemental manner--may have had some positive effect in a prison setting. The other stages of change instruments used in this study (SOCRATES, URICA) did not find expected results with regards to condition in Phase I and II testing. Problems with stages of change instruments are outlined later in the discussion.

The POC-SU results showed that the motivational interviewing condition had significantly greater positive change in Behavioural scale scores from Phase I to Phase II testing than the other two conditions. These results with the POC-SU indicate that individuals participating in motivational interviewing benefited from the session by increasing their use of behavioural processes. This effect was almost repeated when a subsample of offenders who scored higher on the Cognition subscale at pretest were selected. However, the motivational interviewing condition was only significantly different from the no-interview control condition. As with the RCQ-TV, this may mean that motivational interviewing was not more effective than a control interview for this subset of participants, or that the effect was not detected with this particular test because of too small sample size. Also there was

less power because a post hoc test was used instead of a planned comparison. Finally, the mere effect of attention may have had some positive effect on the offenders in the interview control condition given the potential reinforcing effect of a receptive listener in a prison setting. Returning to the POC-SU using the entire sample, these results are supported by motivational interviewing theory (Miller & Rollnick, 1991) and that of the transtheoretical model (Prochaska & DiClemente, 1992a); individuals who had not been using behavioural processes as frequently, were utilizing them more following the intervention. The finding of increased behavioural processes with drug users as a result of participating in motivational interviewing has also been found by Stotts, Schmitz, Rhoades, & Grabowski (2001; refer to Appendix D). At the same time, Stotts et al. (2001) also found no significant differences on a stages of change instrument. Similar findings in the current study will be discussed next.

Some critics may ask how is it possible that there were any effects of an intervention on drug abusers that was only 45 to 60 minutes in duration? Miller (1998) posed a similar question and explained that motivational interviewing changes a client's perspective on his or her problem behaviour. This shift in perception of

contingencies in an atmosphere of empathy seems to allow the client to see, perhaps for the first time, that change is possible and can be achieved (Miller, 1998). The positive changes detected in this study indicate that motivational interviewing results in increases in action scores and offenders' use of behavioural processes of change in the short-term.

The above results were significant, despite some inequality between the conditions on two demographic variables, even with random assignment. The first variable was heroin use. By offender self-report there were more regular heroin users in the motivational interviewing condition and the least were in the interview control condition. This could be interpreted that despite more heroin users in the experimental condition, there were effects of motivational interviewing. An alternate hypothesis, which questions the validity of this item, is discussed below.

The second variable where there was a disproportion across conditions was an item measuring multiple drug use. Similar numbers of offenders reported multiple drug use in the motivational and control interviewing conditions, while there were much fewer in the no-interview condition. This multiple drug-use item and potentially the heroin use item should be viewed with caution given the following

information that became apparent during experimental interviews. When asked about which drug they wanted to address in the session, many of the offenders said that they were recently only using one drug. They explained that they had indicated on the form that they used several drugs regularly because they believed that the question was referring to their entire drug history, not their recent drug history. Despite these admissions by offenders, these items remained unchanged by this writer, as it was decided that it would be inappropriate to modify their responses as participants in the other two conditions did not have the same opportunity to clarify their responses on this item. As a result, the multiple drug use and heroin use items (and the other demographic drug use items) may not accurately reflect the current or recent drug using patterns of the research participants and these items should be viewed with caution. As previously stated, regardless of these two potential differences between the conditions, there were significant effects of motivational interviewing.

As discussed in the introduction, motivational interviewing can be utilized to assist clients progress in all stages of change, but it is particularly useful for moving precontemplators and contemplators into preparation and action (Miller & Rollnick, 1991). However, in this

study there were very few precontemplators, as measured by the different readiness to change instruments. As can be seen with the results of the BIDR, impression management and self-deception did not appear to have affected the results of this study. The higher scores in the stages of change do not appear to be a result of social desirability, so why the lack of precontemplators? The participants may have scored more in contemplation and action stages because they recognized that in order to be considered for any type of early release or minimum security, they were required to complete OSAP as part of their correctional plan. As opposed to social desirability, this may imply that offenders had accepted that they must have a problem because they were required to take this substance abuse program and they needed to complete this and other aspects of their correctional plan. This may indicate that offenders may have had some evaluation apprehension, not necessarily because of them being in the study, but that they were talking to and filling out questionnaires for a staff member. Hopefully this was minimized as this writer informed participants during the consent signing that their participation or lack of participation would not be revealed to their parole officer and would not be recorded in file information. An alternative explanation for the lack of

precontemplators could be that some or most of the individuals who refused to participate in the study were actually precontemplators. Some of the offenders who refused had stated that the reason why they did not want to participate was that they did not have a problem with drugs. Either way, as a result of the lack of precontemplators, this study targeted offenders in the contemplation and action stages of change.

This study found some effects of motivational interviewing with the RCQ-TV and POC-SU. Why were no significant differences supporting the hypotheses detected using the other readiness to change instruments? Stages of change are conceptualized somewhat differently across the stage instruments, however, in this study the similar stages and processes were correlated and showed reasonable relationships with each other. This was especially true for the "action-type" subscales. There were much higher correlations between these subscales as compared with the "contemplation type" subscales. This may indicate that within the readiness to change instruments the higher stages/processes are more accurately measuring the constructs. The results of the current study would lend support to this notion as it was only "action-type" subscales that showed any effect of motivational interviewing. However, not all of these tests showed

significant results. Despite the acceptable correlations between the readiness to change tests, the URICA and the SOCRATES did not pick up the desired effects of motivational interviewing in this study. There were, however, some significant correlational results with the Precontemplation subscale of the URICA and the BIDR Self-Deception subscale, and likewise with the SOCRATES Recognition subscale and the BIDR Self-Deception subscale. These results together seem to suggest an effect of motivational interviewing where increases in recognition (or decreases in precontemplation) are associated with decreases in self-deception (fooling themselves) at post-test. However, the actual nature of this relationship is difficult to determine because of the inability to apply causation in correlational research, so these results should be viewed only as suggestive.

Each one of the readiness to change instruments showed significant effects of time at some phase of testing. The results relating to Phase III testing will be discussed later in this discussion. With regards to the SOCRATES, the main effect of time for the total sample from Phase I to Phase II testing on both the Recognition and Ambivalence subscales is not easily explained. It may indicate that this test is not a particularly sensitive test regarding detecting motivational changes in an

offender sample. However, Ginsburg (2000) found some small effects with the SOCRATES in his study with offenders. As an alternative explanation, the main effect of testing time may be explained by practice effects for this test. Perhaps the average of 7 days between testing times was too short for this particular test and participants were trying to remember how they had scored previously instead of responding how they were feeling "now". It is possible also that these univariate results are spurious, given that the multivariate tests were nonsignificant. As with the URICA, there were no effects of condition with the SOCRATES.

In studies previously unavailable to this writer, problems with the URICA and SOCRATES have been discussed (Abellanas & McLellan, 1993; Belding, Iguchi, & Lamb, 1996; Ginsburg, 2000; Miller, 2001). With methadone maintenance samples, scores on the contemplation, action, and maintenance subscales of the URICA were typically indistinguishable, while precontemplation scores were significantly lower than the other three scores (Abellanas & McLellan, 1993; Belding, Iguchi, & Lamb, 1996). This effect seemed to be replicated with the URICA in the current study: the data did not distinguish scores from contemplation, action, or maintenance, but these three scores were clearly distinguished from precontemplation.

Similarly with the SOCRATES in the current study, participants consistently scored higher on both the recognition and taking steps subscales and low on ambivalence.

Finding statistical significance with one readiness to change instrument and not another is not a novel finding (Ginsburg, 2000). Ginsburg (2000; see Appendix C), with an offender sample, found no significant effects of motivational interviewing with the URICA, but he found significant effects with other readiness to change instruments. Ginsburg cited the vagueness of the URICA as potentially problematic as the items contain the word "problem" instead of the actual target behaviour. This could also have led to confusion for offenders in the current study as they were completing the questionnaires.

As mentioned previously, Stotts et al. (2001) found significant results using motivational interviewing with their processes of change instrument, but not with their stages of change instrument (i.e., the URICA).

Finally, Miller (2001) conceded little success with measuring motivation for change using instruments such as the URICA and SOCRATES before and after delivery of motivational interviewing. He reported that "In several attempts, it simply hasn't worked for us. Motivational questionnaires just don't seem to capture what is going on

in MI" (Miller, 2001, p. 1). Miller no longer recommends measuring the effects of motivational interviewing with stages of change instruments. Instead, Miller recommends a coding system that will be outlined later in this discussion.

Motivational interviewing has been evaluated with other types of measures (e.g., rates of abstinence, number of slips, attitudinal measures) instead of or in addition to using the readiness to change questionnaires. Saunders et al. (1995) found no significant differences with the stages of change instrument utilized (i.e., URICA), but found significant differences with behavioural measures. Recent studies which have utilized abstinence or substance usage as criteria have found superiority of motivational interviewing over control and comparison conditions (Baker, Boggs, & Lewin, 2001; Marlatt et al., 1998; Monti et al., 1999; Sellman et al., 2001; Senft, Polen, Freeborn, & Hollis, 1997; Stephens, Roffman, & Curtis, 2000; Stotts et al., 2001). Focusing on measuring processes of change and using behavioural measurements are recommended for future studies on motivational interviewing with incarcerated drug users; although in accordance with this study's results, measuring stages of with the RCQ-TV is still recommended.

Phase III testing, following completion of the OSAP program, did not find any significant differences between the conditions on the readiness to change instruments. It is not surprising that the SOCRATES and URICA did not produce significant results, given that they also showed no short-term effects of motivational interviewing. The significant short-term gains motivational interviewing had at Phase II testing on the RCQ-TV and POC-SU were lost after completion of the OSAP program. This result was in contrast to Heather et al. (1996) who found long-term effects of motivational interviewing using a readiness to change instrument. The main effects of testing time with all the readiness to change instruments was, however, an interesting result. It seems to suggest that the post-program results of condition may have been nonsignificant because of the larger effect of the OSAP program, which has been found to be an effective intervention. The OSAP program is geared toward individuals in the action stage of change. According to the readiness to change instruments utilized in this study, most of the research participants were in the action stage of change, or alternatively in the contemplation stage, before they started treatment. Therefore, it is not surprising that the OSAP program had its full treatment effect, given that it was matched to

most participants stage of change. With regards to the main effect of testing time, it seems that the OSAP program affected research participants as a whole by decreasing certain subscale scores in ways one might predict and increasing certain other subscale scores as expected as well. These results are all consistent with the theoretical underpinnings of the cognitive-behavioural OSAP program and are also consistent with the transtheoretical model of change. Therefore, although it is unfortunate that the Phase III testing did not pick up effects of motivational interviewing, the effects of the much longer OSAP program seem to have been detected with all of the measures.

Unlike what had been predicted, there was no effect of condition on estimated ambivalence, as measured by the decisional balance. Previous research on decisional balance had shown that there are shifts from more emphasis on the cons of changing to the pros of changing as individuals progresses along the stages of change (Prochaska, 1994; Prochaska et al., 1994). As with Allsop and Saunders (1991), in this study clients were asked to assign subjective weights or valences to each listed cost and benefit. Unfortunately, many offenders participating in this study had difficulty understanding how to fill out the decisional balance (i.e., they asked repeated

questions of the supervising interns regarding how to fill it in) and often filled in the chart incorrectly (e.g., did not assign weights), only partially completed the chart, or omitted the chart. As a result, many decisional balance sheets were unusable in the analysis. Whether from a lack of understanding of what was asked of them or a feeling of frustration with the task, the results were likely affected. This modification of the decisional balance may have been too complicated for offenders and therefore may not have been an appropriate measure of ambivalence. Successful motivational interviewing should result, not only in an increase in readiness to change, but also in a decrease in ambivalence. Unfortunately, in this study it cannot be determined if there was a shift in estimated ambivalence using the decisional balance.

Although problem recognition and willingness to participate in treatment do not equal motivation, it was predicted that ratings of these concepts might increase as a result of a treatment primer like motivational interviewing. In Brown and Miller (1993) the motivational interviewing condition resulted in increased treatment participation ratings by the therapist, but in this study there were no relationships between treatment condition and ratings of participation by program facilitators.

Brown and Miller, however, had found non-significant differences in self-reported client participation in their study and the current study had included some extra direction for group participants in order to try to increase the likelihood of more precise self-ratings. However, Brown and Miller's results were still replicated as ratings of willingness to participate in treatment and ratings of actual participation in this study showed no significant differences across condition. In the current study this lack of relationship between condition and rated participation was consistent across offender and facilitator ratings. Therefore, as discussed similarly in other research (Miller, 1985; Miller & Rollnick, 1991; Weekes et al., 1997), in this study problem recognition and willingness to participate in treatment did not necessarily combine to produce motivation for treatment.

It had also been predicted, as it conceptually made sense, that individuals who received motivational interviewing would find the substance abuse treatment more helpful and they would apply themselves more in the substance abuse program (i.e., resulting in better ratings of their knowledge of drugs and of their use of coping skills). These predictions were exploratory as they were not made with previous findings in mind. As outlined above, there were no differences on these offender-rated

and facilitator-rated variables across conditions. It is possible that motivational interviewing did not effect these variables because of the even larger effect of the five-week OSAP program washing out any effect that the experimental condition may have initially brought to treatment. Dench and Bennett (2000) also found that treatment engagement was not affected by motivational interviewing likely because of the larger effect of the 6-week cognitive-behavioural treatment program masking those effects. In the current study, it is also possible that the Likert-type rated items themselves were not discriminating enough to detect an effect. This writer is inclined to endorse the previous rationale because the readiness to change questionnaires also did not detect differences between groups after program completion, but they showed improvements participants as a whole following completion of OSAPP. It is unfortunate that the facilitator initial ratings had to be excluded from the study as they could have shed light onto whether individuals in the motivational interviewing condition had differences in some of the above variables as they entered treatment.

In accordance with the results of Saunders et al. (1995), motivational interviewing in the current study had been expected to result in better completion rates as

compared to controls. It was also hoped that this finding would extend to include an effect on better attendance rates as well. However, the current study found no relationship between condition and either completion rates or attendance rates. It was not entirely unexpected, since there were no other significant results with condition at post-program testing, that there were also no effects with completion rates or attendance rates. The loss of one third of the sample for Phase III testing may have influenced the results. As described above, motivational interviewing in this study seem to have provided research participants some initial advancement in the processes of change, but these small effects may have been dwarfed by the overall effectiveness of the OSAP program.

Why were the significant results for condition not greater in magnitude or greater in number? It is possible that the intervention in the experimental condition was not delivered effectively. However, to ensure against this, two separate raters were utilized in conjunction with this research to determine that the intervention was indeed motivational interviewing. Before official data collection began, three tapes of interviews with offenders were rated by Dr. Rob Nolan, the individual who trained this writer in motivational interviewing (Nolan, 1998).

Dr. Nolan indicated that the experimental intervention was motivational interviewing. He did caution this writer not to be too cognitive-behavioural in approach during the intervention and this advice was carefully heeded during the study. During the study, permission to audiotape interviews was asked of the research participants, but very few offenders gave their permission to tape these interviews. Instead of sending additional tapes to be evaluated, this writer had the unique opportunity of having Greg Graves, a member of the Motivational Interviewing Network of Trainers attend two live sessions of motivational interviewing delivered by this writer. Mr. Graves rated this writer at the 90th percentile as compared to individuals whom he has trained in motivational interviewing. With both of these checks, this writer is confident that the intervention was appropriately delivered and was motivational interviewing.

It is possible that statistically significant results could have limited clinical significance. Scoring on all the readiness to change instruments is based on a Likert-type scale where scores can vary dramatically if the research participant endorses "strongly agree" several times instead of "agree" from one test administration to another. In this way it is possible that chance has affected this data set. On the other hand, these

fluctuations may be an accurate reflection of what the research participant was feeling at the time he completed the questionnaire. The results in any study are limited to the participants' honest self-report. As mentioned previously, in this study impression management and self-deception on the BIDR were within appropriate limits.

It is reasonable to speculate that a larger sample size may have provided more statistical power to this study and could have resulted in more significant results or more robust findings. A power analysis had been completed prior to the commencement of the study which indicated that with a small to medium effect using F-tests, power would be above .80 with a total sample size of 114 (38 in each group). This was confirmed with Miller, who agreed that 38 in each group would pick up a medium effect size (W. R. Miller, personal communication, August 23, 2001). Therefore the goal in this study was to have 38 in each group, however several problems were encountered in trying to achieve this number. The number of OSAP providers at the institution, where the data was collected, dwindled during data collection so the number of OSAP programs offered also decreased. Since random assignment to condition in the study was done by using the waiting list for the OSAP program, this dramatically increased the time required to collect data. Another

medium security federal institution within a two-hour drive of the research site was approached in order to collect data there but this request was denied. Data collection was expanded to include individuals who were slated to take the high intensity version of OSAP, the High Intensity Substance Abuse Program (HISAP) in order to try to get more research participants. This was deemed appropriate as individuals taking HISAP typically had severe drug problems as would have nonetheless taken OSAP prior to the recent development of HISAP. After two full years of data collection (from September 1999 to September 2001), it was decided to stop testing with 32 in each condition in the interest of completing the dissertation within the appropriate time limits. It is possible that more significant results or robust findings could have been found with a larger sample size.

Another weakness of this study was that the assessment of drug problem was not completed in conjunction with this study. Instead, assessments at intake using the CLAI were utilized. During the study it was discovered that sometimes testing had not been completed on the DAST at all for individuals on the waiting list for the OSAP program. In these cases, file information was used to determine if the offender qualified for the study. In situations where the DAST had

been completed, scores could have been obtained from just prior to participation in the study or two years prior, for example. A more recent measure of drug problem would have been more appropriate for this study. It is not surprising that there were no significant correlations between DAST scores and the readiness to change scores given the potential of many months between these administrations. Along the same lines, a more extensive assessment of drug problem may have been desirable as correspondingly more time could have been spent on feedback of these results in the motivational session. With these changes, the motivational intervention may have been even more effective.

Another drawback of the current study was that the drug selection offenders were referring to in their questionnaires was not recorded from testing to testing. As indicated previously, a large proportion of offenders indicated that they had used multiple drugs (although there may be problems with this item). Because of the potential of the research participants using more than one drug, there may have been discrepancies between which "drug" the participant was thinking about when answering questions on drug use across phase testing. This drug selection may also not have been the same drug discussion in the motivational interviewing session for that third of

the research participants. If they were multiple drug users, they were asked in the experimental session which drug that they wanted to focus on during the session and that was kept constant for the duration of motivational interviewing. It is possible that offenders were indeed referring to the same drug when filling out the questionnaires each time; however, whether this was or was not the case cannot be determined.

One could argue that more sessions of motivational interviewing could have resulted in more robust findings. Empirical results have shown the effectiveness of briefer interventions (Heather, 1995; Miller & Rollnick, 1991); however, it is possible that an additional session of motivational interviewing with the goal of solidifying progress from the initial session potentially could have resulted in more demonstrated change on the readiness to change questionnaires. More recent studies of substance users, which used behavioural measures of treatment success, reported using two to four sessions of motivational interviewing (Baker et al., 2001; Sellman et al., 2001; Stephens et al., 2000; Stotts et al., 2001).

Another potential drawback of the study was that three of the readiness to change questionnaires (SOCRATES, RCQ-TV, URICA) asked the respondent to answer how they are feeling "right now", which seemed to be confusing for some

of the research participants. Some offenders indicated that this was problematic because they had not used drugs in a few months. A few offenders indicated that they were thinking that "right now" may refer to how they are currently feeling about a past time when they used drugs. Instead it was emphasized that they were to respond to how they are currently feeling about their drug use (i.e., their immediate state as they are filling out the questionnaire). The psychological interns who supervised testing attempted to clarify this at the start of testing and whenever additional questions were raised.

Another potential criticism of the readiness to change instruments is their lack of additional forms. It is possible that research participants were biased by their first completion of the questionnaires, thereby interfering with their subsequent responses at Phase II and III testing. Instead of measuring the effects of motivational interviewing, the tests could have been measuring the participants ability to recall their responses from testing to testing. In order to try to prevent problems of this nature, it was emphasized at each testing time that participants were to respond to questionnaires as how they were feeling "right now" and this was clarified as above. Reductions in potential problems with test-retest could also have been addressed

by increasing the time between Phase I and II testing. However, this was not feasible in the current study as it would have made data collection increasingly difficult. In many cases, names on the OSAP waiting list were only provided to this writer one week before the program start date and increased time between would have led to lost data because Phase II testing could not occur after the program had started.

Another potential drawback to the study was the lack of ability to control communication between offenders in the study regarding what they were doing or not doing. In order to try to protect against this potential problem, research participants were told that they may know other offenders who are participating in the study and they were assured that there were several conditions and they would likely not be doing the same thing as the other offender. Offenders from four different living units were asked to participate and this also decreased the likelihood that the participants would have known each other, at least before they started the OSAP program.

There were also several advantages of the study that will be described next. Based on a substance abuse treatment waiting list of offenders, research participants who qualified for the study were randomly assigned to the conditions in this study. Random assignment is important

in order to insulate against problems with threats to internal validity like maturation, history, and selection. Another very important aspect of this study was the inclusion of three different orders of the questionnaires. Using different orders can ensure that responses are not a function of the order of presentation of the questionnaires.

This study not only included a standard control condition, but also included an interview control condition in order to reduce the likelihood of positive outcomes being the result of the attention given to the participants. At the time this prospectus was presented, only one published motivational interviewing study has utilized an interview control (Bien et al., 1993). The attention factor was seen as a concern with incarcerated offenders because of the motivating effect of being involved in a therapeutic interaction or anything which is world's apart from the typical tedium of institutional life. In the current thesis, it was deemed important that the interview control procedure did not include anything that might increase motivation to drug use. Therefore, in contrast with Bien et al. (1993), who told clients that they have a substance abuse problem and encouraged them to participate fully in their control interview, the current study control interview excluded references to drug

problem severity and avoided giving encouragement for treatment participation. It was postulated in this way, that the current study could better control for attention. Results with the subsamples of the POC-SU and the RCQ-TV, where motivational interviewing was not significantly different from the interview control, may indicate that even attention can have a positive effect with incarcerated offenders. However, significant results of the study with the whole sample RCQ-TV and the POC-SU seem to suggest that, not just attention, but motivational interviewing had some modest effects over both the control conditions.

Additional potential confounds were controlled for in this study. For example, potential response bias was controlled with the inclusion of the BIDR as part of the testing package. Another potential confound that was controlled for in the current study was that of therapist variance. This was held constant by having only one therapist deliver both the motivational and control interviews. Demand characteristics were also minimized in this study as psychological interns, who were blind to offenders' condition assignment, oversaw the testing of offenders.

As discussed earlier, motivational interviewing has been evaluated with other types of measures (e.g., rates

of abstinence, substance usage) instead of or in addition to using the readiness to change questionnaires. In addition, a coding system has been used to quantify motivational interviewing effectiveness (Miller, Benefield, & Tonigan, 1993; Tappin et al., 2000). This practice of coding statements made by the client has evolved into the Motivational Interviewing Skill Code (MISC) and it is Miller's current preferred measure of change (Miller, 2001). Using this coding system, raters code client's "change talk" (formerly called self-motivational statements), resistant statements, questions, and neutral comments. This may prove a more fruitful method of evaluating the effectiveness of motivational interviewing over readiness to change instruments; however, as in the current study, getting consent for taping of interviews with offenders might be difficult.

Additional theorizing regarding the transtheoretical model may also be a future consideration with measuring motivational interviewing with offenders. Freeman and Dolan (2001) have theorized that there are additional stages of change in excess of the five initially described by Prochaska and DiClemente, although research has not been presented to support this theoretical expansion. Based on clinical experience, Freeman and Dolan added noncontemplation and anticontemplation preceding

precontemplation; they replaced preparation with action planning; and they inserted prelapse, lapse, and relapse between action and maintenance. This reformulated model may assist in the delivery of motivational interviewing and it seems particularly relevant for substance use given the incorporation of the prelapse and lapse stages.

Sutton (1996) also lends some support to the addition of other facets to the model by emphasizing that the current transtheoretical stages of change model is an ideal one of how people should change and not necessarily how people actually change. Sutton and other researchers (Budd & Rollnick, 1996) have also proposed that readiness to change can be better conceptualized as a continuous progression of measurement in contrast to the series of discrete stages in the transtheoretical model. Sutton (1996) argues that the stages of change model imposes an artificial classification on a process which he believes is continuous and not necessarily sequential. Sutton suggests that instead of referring to "stages" of change, the more accurate distinction would be "states" of change. This "states" recommendation seems to reflect Miller and Rollnick's (1991) definition of motivation as a fluctuating state of readiness or eagerness to change.

Emphasis has also been recently placed on theories which can encompass motivational interviewing (Rotgers &

Graves, 2000; Souter, 1997). Rotgers & Graves (2000) modeled their motivational enhancement treatment, as part of the DSAT (Differential Substance Abuse Treatment) Model, using a theory of human motivation called Self-Determination theory (Deci & Ryan, 1987). Souter (1997) discussed how she believes that motivational interviewing, the transtheoretical model, self-determination theory, and decisional balance theory can be encompassed in an even larger framework called Motivational Control Theory. Motivational interviewing is also now included in various texts as a cognitive-behavioural intervention. As a result of these reconceptualizations, it will be interesting to note in the literature if the theoretical grounding of motivational interviewing as a whole shifts somewhat over the next few decades.

Motivational interviewing has evolved from being used with alcohol and drug abusers to other samples, some of which have been outlined in this dissertation. Increasing motivation is an important responsivity factor in increasing the likelihood of treatment success for offenders (Andrews, Bonta et al., 1990). Miller (1999) talked about a recent surge of interest in motivational interviewing by correctional treatment providers in North America. Two recent review publications discuss the use of motivational interviewing with offender populations

(Mann, Ginsburg, & Weekes, 2002; Ginsburg, Mann, Rotgers, & Weekes, 2002). Particularly relevant to the criminal justice system, motivational interviewing is now being used with specialized samples like sex offenders and domestic abusers. As mentioned in Mann et al. (2002), future applications of motivational interviewing in corrections should ideally focus on training, not just treatment providers, but all correctional personnel in the techniques and theoretical underpinning of the approach. The directive, client-centered counseling approach of motivational interviewing can assist correctional personnel in respectful interactions with offenders and can promote positive behavioural change.

The results of the current study may be particularly relevant to another research project that uses a motivational intervention as a precursor to a drug treatment program, but has not yet been completed. The DSAT Model (Rotgers & Graves, 2000), a well-designed treatment program, uses motivational enhancement treatment (Rotgers & Graves, 1999) as a precursor to different levels of substance abuse treatment for incarcerated offenders with corresponding differing levels of drug problems. It will be interesting to note if their results regarding increasing motivation to change are similar to the current study, or more pronounced because of the

methodological improvements that they are employing.

In accordance with recent research findings, future studies of motivational interviewing with offenders should utilize at least two different sessions of the intervention, with the second session as a review a few weeks later. Also, coding change talk and focusing on measuring substance usage (e.g., urinalysis tests) as measures of treatment success are recommended for future studies with incarcerated drug users in addition to standard measurements of stages and processes of change.

Results of the current study show modest additional support for using motivational interviewing with offenders. This is an important contribution to the literature on motivational interviewing. This study is near the beginning of hopefully what will be a long list of studies using motivational interviewing with offenders.

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Appendix A

General Principles of Motivational Interviewing

Miller and Rollnick (1991) have presented five general principles of motivational interviewing: expressing empathy, developing discrepancy, avoiding argumentation, rolling with resistance, and supporting self-efficacy. These principles differ somewhat from those first outlined and described by Miller (1983).

Expressing Empathy. Expressing Carl Rogers concept of "accurate empathy" (cited in Miller, 1983) is an essential aspect of motivational interviewing and is employed throughout the therapeutic process (Miller & Rollnick, 1991). Miller and Rollnick (1991) have defined empathy as "a specifiabile and learnable skill for understanding another's meaning through the use of reflective listening, whether or not you have had similar experiences yourself" (p. 26). In order to achieve accurate empathy the therapist must pay close attention to what the client says, constantly interpret the meaning of the client's words, and reflect back to the client what was said with an emphasis on self-motivating statements and a de-emphasis on negative statements which could impede readiness to change (Miller, 1983; Miller & Rollnick, 1991). Providing an atmosphere of acceptance is a very important aspect of empathy because acceptance facilitates change (Miller & Rollnick, 1991). Studies

have found that therapists who use empathy are more successful in avoiding client resistance and maintaining long-term change (Miller & Sovereign, 1989; Patterson & Forgatch, 1985).

Developing Discrepancy. Miller (1983) discussed how motivational interviewing relies on the creation of cognitive dissonance, although he changed his terminology in later writings. Achieving discrepancy is a very important aspect of motivational interviewing (Miller & Rollnick, 1991). Discrepancy involves an incongruence between a target problem behaviour and important things in a client's life (e.g., children, spouse, etc.). This is an uncomfortable experience which the individual has to resolve by either behaviour change or fear reduction (Miller, 1995).

Miller (1994) describes a common strategy for creating discrepancy whereby a client is asked to list what is most important to him or her. Clients are then asked to insert where their problem behaviour fits into their list of priorities (Miller, 1994). In this way the therapist sets the stage for the client to make his or her own conscious discovery (Miller, 1994). The result of this clarification of goals is a feeling of uncomfortable discrepancy when clients realize the importance they have placed on their problem behaviour relative to other important elements in their lives (Miller & Rollnick,

1991). This technique evokes such a profound impact on clients because "the change arises from within, from recognition of the incompatibility of the target behavior *and things that are more dear, more central, more valued, more important* to the person" (Miller, 1994, p. 119). A client in this situation will often present arguments for change (Miller & Rollnick, 1991).

Avoiding Argumentation. Arguing with the client is counterproductive. The more forcefully a therapist tries to persuade a client in one direction, the more forcefully the client will defend the opposing position (Miller, 1983; Miller & Rollnick, 1991). If the therapist argues for change, then that leaves the client to argue against change. A common argumentative scenario which breeds resistance is when a therapist confronts a client by telling him or her that he or she is an alcoholic or addict. In this case the client will undoubtedly respond with denial (Miller & Rollnick, 1991), particularly if the client is ambivalent (Miller, 1983). This is by no means limited to a therapeutic situation; it is a general psychological principle that individuals will defend themselves when they are negatively labelled (Miller & Rollnick, 1991).

According to proponents of motivational interviewing, labelling is seen as unnecessary and is de-emphasized (Miller & Rollnick, 1991). When the client expresses

ambivalence about accepting a label the therapist can reflect back to the client his or her concerns about labelling (Miller & Rollnick, 1991). The therapist can then reframe what is important--that the client recognize that he or she has a harmful problem behaviour and decide what to do about it (Miller & Rollnick, 1991). In sum, reflection and reframing are both useful techniques for avoiding argumentation.

Rolling With Resistance. Resistance is an observable behaviour and it can occur as a result of the therapist using strategies not suitable for the stage of change that the client is experiencing (Miller & Rollnick, 1991). If the therapist meets with client resistance, it should be regarded as a sign to use different strategies (Miller & Rollnick, 1991). Resistance is normal at the beginning of a therapeutic relationship and it is important for the therapist to respond by using reflection or reframing instead of argumentation or confrontation (Miller & Rollnick, 1991).

Supporting Self-Efficacy. It is important for the client to believe in the possibility for change in order for treatment to be effective (Miller & Rollnick, 1991). Self-efficacy is the belief one has in one's ability to accomplish a task or goal (Bandura, 1982). Motivational interviewing emphasizes that changing is the client's responsibility (Miller & Rollnick, 1991). The therapist

and client discuss what approaches to change are the most appropriate for him or her, but it is the client who makes the decision of what, if anything, is to be done. A client's appropriate behaviours or change efforts are rewarded with affirmation and validation from the therapist in hopes that self-efficacy will be enhanced.

Appendix B

Motivational Interviewing Strategies

The spirit of motivational interviewing gives rise to the use of various strategies for building motivation and for strengthening commitment to change.

1. Strategies for Building Motivation

The strategies for building motivation include the following: Asking open-ended questions, using reflective listening, eliciting self-motivational statements, using affirmation, giving personalized feedback, and providing summaries. Responding to resistance in an motivational fashion is also key to motivational interviewing.

Asking Open-Ended Questions. Asking open-ended questions will ensure that the client does the majority of the talking (Miller & Rollnick, 1991). Asking a question that can be answered with a yes or no will give little information compared to a question like the following: "I understand that you have some concerns about drinking. Tell me about them" (Miller & Rollnick, 1991, p. 72). With more ambivalent clients it is advisable to ask for both sides of the target behaviour: "Tell me about your use of cocaine. What do you like about it? And what's the other side? What are your worries about using it?" (Miller & Rollnick, 1991, p. 72). It is recommended to use a maximum of two questions in a row followed by reflection.

Using Reflective Listening. Reflective listening is the act of responding to a client by using a statement that sums up what the client has just said (Miller & Rollnick, 1991). The therapist can use the same wording as the client, substitute new words, or make a guess as to what the client meant (Miller & Rollnick, 1991).

Reflective listening is a method of verifying what the client has meant and of reinforcing key statements the client has made (Miller & Rollnick, 1991). The therapist selectively emphasizes certain points in reflective statements and de-emphasizes other points. Miller and Rollnick (1991) emphasize the use of the pronoun "you" in a reflective listening statement as well as the importance of turning the statement down at the end to avoid it sounding like a question: "You've been drinking quite a bit" (p. 75). It is important for self-motivational statements, in particular, to be reflected back to the client.

Eliciting Self-Motivational Statements. Self-motivational statements are declarations from clients that can be elicited by the therapist using a variety of techniques (Miller & Rollnick, 1991). "Clients have within themselves the motivation to change their behaviour. The task of the counselor is simply to elicit these motives in a respectful atmosphere" (Rollnick &

Morgan, 1995, p. 183). This is important because it is more likely that clients will accept things that they come up with themselves (Miller & Rollnick, 1991). This concurs with the attributional principle "I learn what I believe as I hear myself talk" (Miller, 1983). There are four types of self-motivational statements: problem recognition, expression of concern about perceived problems, direct or implicit intention to change, and optimism about change (Miller, 1983; Miller & Rollnick, 1991).

It is best if self-motivational statements are conceived by the client, but they can be evoked from the therapist by asking various carefully worded questions (Miller, 1983). The therapist should assume that the client is ambivalent and ask evocative open-ended questions like: "What things have you noticed about your drinking that concern you?" or "What makes you think that perhaps you should do something about your drinking?" (Miller, 1983, p. 160-161).

Self-motivational statements can be evoked by using a decisional balance sheet or a similar verbal exercise (Miller & Rollnick, 1991). This involves asking the client about the pros and cons of continuing the problem behaviour followed by inquiries about the pros and cons of changing that behaviour. Further self-motivational statements can be elicited by inquiring about a "typical

day in the life of" the client with regards to the target behaviour (Miller & Rollnick, 1991). When an issue is raised the therapist may be able to evoke more self-motivational statements by asking for examples and clarifications or by inquiring "What else?" (Miller & Rollnick, 1991). The therapist can also ask the client to examine his or her worst fears, to talk about his or her life before the problem behaviour, and to relay his or her future hopes without the problem behaviour (Miller & Rollnick, 1991). Additional statements can be evoked by establishing what is important to the client and then asking where the problem behaviour fits in.

Self-motivational statements can also be elicited by using paradoxical strategy. With this strategy, the therapist portrays the client's doubts without disclosing that this is occurring (Miller, 1983). The therapist takes the side of not changing in order to have the client subtly or overtly (i.e., using role-playing) defend the position to change (Miller & Rollnick, 1991). If this is effective, the client will actually try to prove that he or she has a problem or to argue that he or she has to change (Miller, 1983). The therapist then responds with reflection and eventually "succumbs" to persuasion. Paradoxical strategy is a powerful technique because the client is left to argue for change or treatment since the therapist refuses to verbalize the positive side of the

argument (Miller, 1983). Use of this technique requires much skill and experience with motivational interviewing.

Using Affirmation. It is important for the therapist to give nonverbal and verbal support for the voicing of self-motivational statements (e.g., use head nods, reflective listening, and statements like "I can see how that would concern you"; Miller, 1983, p. 160). Affirmation and support should also be given to the client throughout the session. The therapist can do this by using compliments: "that's a good suggestion" (Miller & Rollnick, 1991, p. 77). This can also be achieved by using assertions of appreciation and understanding: "that must have been very difficult for you" (Miller & Rollnick, 1991, p. 77).

Giving Personalized Feedback. Another motivational interviewing strategy involves the presentation of the client's assessment results in the form of feedback (Miller, 1983), although it is possible to offer motivational interviewing without any formal assessment (Rollnick & Miller, 1995). Miller and Rollnick (1991) emphasize that a "clear knowledge of the present situation is a crucial element of motivation for change" (p. 26). The therapist uses a nonjudgemental approach when introducing the results by saying: "I don't know whether this is of any concern to you or not..." or "...that may

or may not matter to you" (Miller, 1983, p. 162). The clients own scores are provided along with an explanation of complex results and normative information (Miller, 1983; Miller & Rollnick, 1991). The client should be invited to make his or her own conclusions regarding the findings and the therapist only offers advice when asked (Miller, 1983; Miller & Rollnick, 1991).

As clients react to the data, the therapist can take this opportunity to try to elicit self-motivational statements: "What do you make of this?...Is this what you expected?" (Miller & Rollnick, 1991, p. 98). Reflective listening can also be very effective at this time; for example, "This really took you by surprise---it wasn't what you expected" (Miller & Rollnick, 1991, p. 98). Feedback should conclude with a summary of the findings and the client's reactions (especially self-motivational statements) as well as an invitation to the client to make any corrections or additions (Miller & Rollnick, 1991).

Providing Summaries. The use of summaries can be a very effective way to bring together information that has been discussed (Miller & Rollnick, 1991). Before presenting a summary of what has been discussed, the therapist introduces the concept to the client: "Let me see if I can put together everything that we have talked about so far" (Miller, 1983, p. 162-163). The therapist restates the client's self-motivational statements and

uses linking phrases (e.g., on the one hand...and on the other...) to express the client's ambivalence (Miller & Rollnick, 1991). It is important also for the therapist to include the client in this technique by asking him or her whether any information should be modified or added to the summary. Summarizing can help the client move on to the next topic or complete the session (Miller & Rollnick, 1991).

Responding to Resistance. According to Miller and Rollnick (1991) the motivational interviewing therapist can respond to resistance by utilizing a variety of strategies. The therapist can acknowledge the client's point by using reflective listening. Also effective is reflecting a more extreme statement back to the client. In addition, using double-sided reflection is useful, whereby the therapist uses reflective listening and also adds the other side to what the client has expressed. When resistance is impeding progress, shifting focus around the issue, rather than dealing with it directly can be effective. Agreement with a twist can also be used when clients respond with resistance. This is accomplished by the therapist initially agreeing with what the client said and then reshaping the response into a more desired direction. Reframing is another effective approach to give the client's observations new meaning. Therapeutic paradox

can also be used to counteract resistance in clients, but it should be used with caution and only if other approaches have been unsuccessful (Miller & Rollnick 1991).

2. Strategies for Strengthening Commitment to Change

After motivation has been raised sufficiently, the next step is for the client to make a commitment to change (Miller & Rollnick, 1991). If the above therapeutic strategies have been effective, the client will have become discrepant (Miller & Rollnick, 1991). It is the therapist's task at this point to begin helping the client strengthen this commitment during the appropriate window of opportunity. Miller and Rollnick (1991) note that this crucial time is somewhere in the late contemplation stage or early in the preparation stage. They identify several signs of readiness to change that can help the therapist determine that the time is ripe for commitment: less client resistance, fewer questions being asked about the target behaviour, more questions being asked about change, direct self-motivational statements made by the client, an appearance of a resolution to change, change is being envisioned by the client, and experimentation with change has begun (Miller & Rollnick, 1991).

It is important for therapists to note that ambivalence does not vanish once a commitment has been made to change (Miller & Rollnick, 1991). The therapist

must find a balance between providing too much and too little direction for the client. A good beginning for this second phase of therapy is to summarize the client/therapist interaction thus far, including: the client's self-motivational statements, the contrasting views of his or her ambivalence, assessment results, the client's intentions to change, and the therapist's views on the client's situation (Miller & Rollnick, 1991). The therapist then asks the client open-ended questions regarding what he or she wants to do for treatment (Miller & Rollnick, 1991).

Advice is only offered upon invitation and only after it has been discouraged: "I'll be happy to give you some ideas, but I don't want to get in the way of your own creative thinking, and you're the expert on you" (Miller & Rollnick, 1991, p. 118). Any advice that is given should be qualified by a statement, such as: "I don't know if this would work for you or not, but I can give you an idea of what has worked for some other people in your situation" (Miller & Rollnick, 1991, p. 118). In addition, instead of voicing only one solution, array of options should be given (Miller & Rollnick, 1991).

Negotiating a plan for change is the next step in strengthening commitment to change (Miller & Rollnick, 1991). This involves helping the client set goals, examine different options, and decide on a plan (Miller &

Rollnick, 1991). Setting clear goals is important because motivation is strengthened when there is a discrepancy between one's goals and one's behaviour (Miller & Rollnick, 1991). Therefore, in order to get the client talking about goals the therapist asks questions like: "What is it that you want to change?" or "How would you like for things to be different?" (Miller & Rollnick, 1991, p. 119). With drinking or even drug abuse, use in moderation may be seen by clients as an attractive goal rather than abstinence (Miller, 1983; Miller & Rollnick, 1991). In order to determine if goals are achievable, clients should be asked about possible consequences (Miller & Rollnick, 1991). At the appropriate time the therapist and client discuss the menu of treatment options available. These include different types of treatment as well as the option of doing nothing (Miller, 1983). It is the client's responsibility to choose his or her course of action or inaction (Miller, 1983; Miller & Rollnick, 1991). The therapist and client then devise a step by step plan. When the client approves of the plan and agrees to undertake it then there is commitment (Miller & Rollnick, 1991). Successfully changing a problem behaviour requires a solid, realistic commitment to change (DiClemente, 1991). After the change plan has been executed, it is the therapist's task to provide support, affirm client progress, and help the client avert relapse.

Appendix CDrug Abuse Screening Test (DAST)

Now, we have some more questions about your drug use and the sorts of things that happened in your life as a result of your drug use during the 6 MONTHS BEFORE YOU WERE ARRESTED.

1. Consider the 6 months before your arrest. Did you use drugs other than those required for medical reasons?

1. NO
2. YES

2. Consider the 6 months before your arrest. Did you use prescribed or over the counter drugs in excess of the directions?

1. NO
2. YES

3. Consider the 6 months before your arrest. Did you abuse more than one drug at a time?

1. NO
2. YES

4. Consider the 6 months before your arrest. Were you able to get through the week without using drugs?

1. NO
2. YES

5. Consider the 6 months before your arrest. Were you always able to stop using drugs when you wanted to?

1. NO
2. YES

6. Consider the 6 months before your arrest. Did you have "blackouts" or "flashbacks" as a result of drug use?

1. NO
2. YES

7. Consider the 6 months before your arrest. Did you ever feel bad or guilty about your drug use?

1. NO
2. YES

8. Consider the 6 months before your arrest. Did your wife (or parents) ever complain about your involvement with drugs?

1. NO
2. YES

9. Consider the 6 months before your arrest. Did your drug abuse create problems between you and your wife or your parents?

- 1. NO
- 2. YES

10. Consider the 6 months before your arrest. Did you lose friends because of your use of drugs?

- 1. NO
- 2. YES

11. Consider the 6 months before your arrest. Did you neglect your family because of your use of drugs?

- 1. NO
- 2. YES

12. Consider the 6 months before your arrest. Were you in trouble at work because of drug abuse?

- 1. NO
- 2. YES

13. Consider the 6 months before your arrest. Did you lose a job because of drug abuse?

- 1. NO
- 2. YES

14. Consider the 6 months before your arrest. Did you get in fights when under the influence of drugs?

1. NO
2. YES

15. Consider the 6 months before your arrest. Did you engage in illegal activities in order to obtain drugs?

1. NO
2. YES

16. Consider the 6 months before your arrest. Were you arrested for possession of illegal drugs?

1. NO
2. YES

17. Consider the 6 months before your arrest. Did you experience withdrawal symptoms (feel sick) when you stopped taking drugs?

1. NO
2. YES

18. Consider the 6 months before your arrest. Did you have medical problems as a result of your drug use (such as memory loss, hepatitis, convulsions, bleeding, and others)?

1. NO
2. YES

19. Consider the 6 months before your arrest. Did you go to anyone for help for a drug problem?

1. NO
2. YES

20. Consider the 6 months before your arrest. Were you involved in a treatment program specifically related to drug use?

1. NO
2. YES

Appendix DSOCRATES

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel *about your drug use*. For each statement, circle a number from 1 to 5, to indicate how much you agree or disagree with it *right now*. Please circle one and only one number for every statement.

NO!		?		YES!	
Strongly	No	Undecided	Yes	Strongly	
Disagree	Disagree	or Unsure	Agree	Agree	
1	2	3	4	5	

1. I really want to make 1 2 3 4 5
changes in my use of drugs.

2. Sometimes I wonder if I 1 2 3 4 5
am an addict.

3. If I don't change my drug 1 2 3 4 5
use soon, my problems are
going to get worse.

4. I have already started 1 2 3 4 5
making some changes in my
use of drugs.

5. I was using drugs too 1 2 3 4 5
much at one time, but I've
managed to change that.

6. Sometimes I wonder if my 1 2 3 4 5
drug use is hurting other
people.

7. I have a drug problem. 1 2 3 4 5

8. I'm not just thinking 1 2 3 4 5
about changing my drug use,
I'm already doing something
about it.

9. I have already changed 1 2 3 4 5
my drug use and I am looking
for ways to keep from slipping
back to my old pattern.

10. I have serious problems 1 2 3 4 5
with drugs.

11. Sometimes I wonder if I am in control of my drug use.

1	2	3	4	5
---	---	---	---	---

12. My drug use is causing a lot of harm.

1	2	3	4	5
---	---	---	---	---

13. I am actively doing things now to cut down or stop my use of drugs.

1	2	3	4	5
---	---	---	---	---

14. I want help to keep from going back to the drug problems that I had before.

1	2	3	4	5
---	---	---	---	---

15. I know that I have a drug problem.

1	2	3	4	5
---	---	---	---	---

16. There are times when I wonder if I use drugs too much.

1	2	3	4	5
---	---	---	---	---

17. I am a drug addict.

1	2	3	4	5
---	---	---	---	---

18. I am working hard to change my drug use.

1	2	3	4	5
---	---	---	---	---

19. I have made some 1 2 3 4 5
changes in my drug use, and
I want some help to keep from
going back to the way I used
before.

Appendix ERCQ-TV

The following questionnaire is designed to identify how you personally feel about your drug use right now. Please read each question below carefully, and then decide whether you agree or disagree with the statements. Please circle the answer of your choice to each question.

Key:

SD=Strongly Disagree **D**=Disagree **U**=Unsure **A**=Agree **SA**=Strongly Agree

1. It's a waste of time thinking about my drug use because I do not have a problem. SD D U A SA

2. I enjoy my drug use but sometimes I use too much. SD D U A SA

3. I am trying to stop using drugs or use less than I used to. SD D U A SA

4. There is nothing seriously wrong with my drug use. SD D U A SA

5. Sometimes I think that I should quit or cut down on my drug use. SD D U A SA

6. Anyone can talk about wanting to do something about their drug use, but I am actually doing something about it. SD D U A SA

7. It's normal to use drugs the way I do. SD D U A SA

8. My drug use is a problem sometimes. SD D U A SA

9. I am actually changing my drug using habits right now (either cutting down or quitting). SD D U A SA

10. Giving up or using less drugs would be pointless for me. SD D U A SA

11. I am weighing up the advantages and disadvantages of my present drug using habits. SD D U A SA

12. I have started to carry out a plan to cut down or quit using drugs. SD D U A SA

13. There is nothing I really need to change about my drug use. SD D U A SA

14. Sometimes I wonder if my drug use SD D U A SA
is out of control.

15. I am actively working on my drug SD D U A SA
using problem.

16. I don't need to change my drug use. SD D U A SA

Appendix FURICA

Each statement in this questionnaire describes how a person might feel when starting treatment or approaching problems in their lives. Please choose your response to each statement by circling the number that represents how much you agree or disagree with the statement. In each case, make your choice in terms of how you feel right now, not what you have felt in the past or would like to feel.

For all statements that refer to your "problem", please answer in terms your drug use. And "here" refers to the place of treatment or the program.

There are FIVE possible responses to each of the items in the questionnaire:

1 = Strongly Disagree

2 = Disagree

3 = Undecided

4 = Agree

5 = Strongly Agree

PROBLEM = DRUG USE

1. As far as I'm concerned, 1 2 3 4 5
 I don't have any problems
 that need changing.

2. I think I might be ready 1 2 3 4 5
for some self-improvement.

3. I am doing something about 1 2 3 4 5
the problems that had been
bothering me.

4. It might be worthwhile to 1 2 3 4 5
work on my problem.

5. I'm not the problem one. 1 2 3 4 5
It doesn't make much sense
for me to be here.

6. It worries me that I might 1 2 3 4 5
slip back on a problem I have
already changed, so I am here
to seek help.

7. I am finally doing some 1 2 3 4 5
work on my problem.

8. I've been thinking that I 1 2 3 4 5
might want to change something
about myself.

9. I have been successful in 1 2 3 4 5
working on my problem but
I'm not sure I can keep up the
effort on my own.

10. At times my problem is 1 2 3 4 5
difficult, but I'm working
on it.

11. Being here is pretty much 1 2 3 4 5
a waste of time for me because
the problem doesn't have to do
with me.

12. I'm hoping this place 1 2 3 4 5
will help me to better
understand myself.

13. I guess I have faults, 1 2 3 4 5
but there's nothing that
I really need to change.

14. I am really working hard 1 2 3 4 5
to change.

15. I have a problem and I 1 2 3 4 5
really think I should work
at it.

16. I'm not following through 1 2 3 4 5
with what I had already changed
as well as I had hoped, and I'm
here to prevent a relapse of
the problem.

17. Even though I'm not always 1 2 3 4 5
successful in changing, I am at
least working on my problem.

18. I thought once I had 1 2 3 4 5
resolved my problem I would be
free of it, but sometimes I still
find myself struggling with it.

19. I wish I had more ideas on 1 2 3 4 5
how to solve the problem.

20. I have started working on my 1 2 3 4 5
problems but I would like help.

21. Maybe this place will be 1 2 3 4 5
able to help me.

22. I may need a boost right 1 2 3 4 5
now to help me maintain the
changes I've already made.

23. I may be part of the 1 2 3 4 5
problem, but I don't really
think that I am.

24. I hope that someone here 1 2 3 4 5
will have some good advice
for me.

25. Anyone can talk about 1 2 3 4 5
changing; I'm actually doing
something about it.

26. All this talk about 1 2 3 4 5
psychology is boring. Why
can't people just forget about
their problems?

27. I'm here to prevent 1 2 3 4 5
myself from having a relapse
of my problem.

28. It is frustrating, but 1 2 3 4 5
I feel I might be having a
recurrence of a problem I
thought I had resolved.

29. I have worries but so 1 2 3 4 5
does the next guy. Why spend
time thinking about them?

30. I am actively working on 1 2 3 4 5
my problem.

31. I would rather cope with my 1 2 3 4 5
faults than try to change them.

32. After all I had done to 1 2 3 4 5
try to change my problem,
every now and then it comes
back to haunt me.

Appendix GPOC-SU

Each statement describes a situation or thought that you might use at the present time to help you not use drugs.

THERE ARE FIVE POSSIBLE RESPONSES TO EACH OF THE ITEMS IN THE QUESTIONNAIRE:

- 1 - Never
- 2 - Seldom
- 3 - Occasionally
- 4 - Frequently
- 5 - Repeatedly

Please read each statement and circle the number on the right that best describes how often you make use of the particular situation or thought to help you not use drugs. Remember these statements refer to situations or thoughts you might use at the present time.

1. I do something nice 1 2 3 4 5
for myself for making
efforts to change

2. I have someone to 1 2 3 4 5
talk with who understands
my problems with drugs.

3. I get upset when I 1 2 3 4 5
think about illnesses
caused by drug use.

4. I am considering the 1 2 3 4 5
idea that people around me
would be better off without
my problem drug use.

5. I seek out groups of 1 2 3 4 5
people who can increase my
awareness about the problems
of drug use.

6. I try to think about 1 2 3 4 5
other things when I begin
to think about using drugs.

7. I find society changing 1 2 3 4 5
in ways that make it easier
for me to overcome my drug
problem.

8. I consider that feeling 1 2 3 4 5
good about myself includes
changing my drug use behavior.

9. I look for information
related to problem drug use.	1	2	3	4	5
10. I use reminders to help
me not to use drugs.	1	2	3	4	5
11. I have someone whom I
can count on to help me
when I'm having problems
with drug use.	1	2	3	4	5
12. Stories about drugs
and their effects upset me.	1	2	3	4	5
13. I tell myself that if
I try hard enough I can keep
from using drugs.	1	2	3	4	5
14. I stop and think that
my drug use is causing
problems for other people.	1	2	3	4	5
15. I think about the type
of person I will be if I
control my drug use.	1	2	3	4	5

16. I stay away from places 1 2 3 4 5
generally associated with
my drug use.

17. I calm myself when I 1 2 3 4 5
get the urge to use drugs.

18. I spend time with 1 2 3 4 5
people who reward me for
not using drugs.

19. I make commitments to 1 2 3 4 5
myself not to use drugs.

20. I see advertisements 1 2 3 4 5
on television about how
society is trying to help
people not to use drugs.

Appendix HBIDR Version 6--Form 40

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7

NOT

SOMEWHAT

VERY

TRUE

TRUE

TRUE

- _____ 1. My first impressions of people usually turn out to be right.
- _____ 2. It would be hard for me to break any of my bad habits.
- _____ 3. I don't care to know what other people really think of me.
- _____ 4. I have not always been honest with myself.
- _____ 5. I always know why I like things.
- _____ 6. When my emotions are aroused, it biases my thinking.
- _____ 7. Once I've made up my mind, other people can seldom change my opinion.
- _____ 8. I am not a safe driver when I exceed the speed limit.
- _____ 9. I am fully in control of my own fate.

- _____ 27. I have said something bad about a friend
behind his or her back.
- _____ 28. When I hear people talking privately, I avoid
listening.
- _____ 29. I have received too much change from a
salesperson without telling him or her.
- _____ 30. I always declare everything at customs.
- _____ 31. When I was young I sometimes stole things.
- _____ 32. I have never dropped litter on the street.
- _____ 33. I sometimes drive faster than the speed limit.
- _____ 34. I never read sexy books or magazines.
- _____ 35. I have done things that I don't tell other
people about.
- _____ 36. I never take things that don't belong to me.
- _____ 37. I have taken sick-leave from work or school
even though I wasn't really sick.
- _____ 38. I have never damaged a library book or store
merchandise without reporting it.
- _____ 39. I have some pretty awful habits.
- _____ 40. I don't gossip about other people's business.

Appendix IDecisional Balance SheetInstructions:

(A) Please fill in the following chart. What are the benefits and costs of continuing your drug use as before? What are the benefits and costs of making a change in your drug use?

Continuing to use drugs as before		Making a change in my drug use	
Benefits	Costs	Benefits	Costs

(B) Please go back to your completed chart. Beside each of your reasons please rate how much you value that reason, in other words, how important it is to you by writing a number from 1 to 10. Use the following as a guide to help you rate your reasons:

Not	Important						Extremely		
Important							Important		
1	2	3	4	5	6	7	8	9	10

Appendix JAdditional Information

Your Date of Birth: ____/____/____

(Day/Month/Year)

Your Marital Status. Please circle only one of the following:

- 1.Married or Common-law 2.Separated 3.Divorced
4.Widowed 5.Single

Your Highest Level of Education. Please circle only one of the following:

- 1.Grade 1 2.Grade 2 3.Grade 3 4.Grade 4
5.Grade 5 6.Grade 6 7.Grade 7 8.Grade 8
9.Grade 9 10.Grade 10 11.Grade 11 12.Grade 12
13.Grade 13
14.Some Community College Courses
15.Graduated From Community College
16.Some University Courses
17.Graduated From University
18.Other Post-Secondary Education

Have you regularly used more than one type of drug (do not include alcohol)? 1. Yes 2.No

Which drugs have you used regularly? Please circle all that apply:

1. Marijuana or Hashish ("Grass", "Pot", "Hash")
2. Cocaine ("Coke")
3. Crack
4. Amphetamines ("Uppers")
5. Heroin ("H", "Horse", "Junk", "Smack")
6. Methadone ("Meth", "Dollies")
7. Barbituates ("Downers", "Barbs")
8. Quaaludes ("Ludes")
9. Valium or other tranquilizers ("Tranks")
10. Glue or Gas ("Sniff")
11. PCP ("Angel Dust")
12. LSD ("Acid")
13. MDA ("Love Drug")
14. Other type of drug

How long have you been using? _____ year(s)

How many times have you been in treatment for drug use?

(Please don't include treatment which was only for alcohol problems) _____

Appendix KOffender Self-Ratings (I and II)

1. Drugs are a major problem in my life.

1	2	3	4	5
---	---	---	---	---

Not true

True

Very True

2. I need help for my drug abuse problems.

1	2	3	4	5
---	---	---	---	---

Not true

True

Very true

3. I am willing to participate in treatment for drug abuse.

1	2	3	4	5
---	---	---	---	---

Not true

True

Very true

Appendix LOffender Program Ratings

1. In your opinion, how much did you participate in the program compared to the other program participants?

1	2	3	4	5
---	---	---	---	---

Not at all

To some
extent

To a great
extent

2. To what extent did you find the program helpful?

1	2	3	4	5
---	---	---	---	---

Not at all

To some
extent

To a great
extent

Appendix MFacilitator Overall Program Ratings

1. Please rate the offender's degree of problem recognition (drug use only) at the end of the program.

1	2	3	4	5
---	---	---	---	---

Refused to
acknowledge
drug use as
being a major
problem in
his life

Was willing to
admit to some
problems but was
not convinced of
the full extent
of the problem

Was very
willing to
admit to
the problem

2. Overall, to what extent did the offender participate in the program?

1	2	3	4	5
---	---	---	---	---

Not at all

To some
extent

To a great
extent

3. To what extent has this offender improved his knowledge of drugs and substance abuse issues?

1	2	3	4	5
---	---	---	---	---

Not at all

To some
extent

To a great
extent

4. To what extent has this offender developed skills from the program (e.g., problem solving skills, strategies for avoiding lapses/relapses)?

1	2	3	4	5
---	---	---	---	---

Not at all

To some
extent

To a great
extent

5. Out of the total _____ OSAP sessions, how many sessions did the offender not attend? _____ sessions not attended

6. Did this offender complete the OSAP program? YES or NO

Appendix NFacilitator Initial Ratings

1. Please rate the offender's degree of problem recognition (drug use only).

1	2	3	4	5
---	---	---	---	---

Refused to
acknowledge
drug use as
being a major
problem in
his life

Was willing to
admit to some
problems but was
not convinced of
the full extent
of the problem

Was very
willing to
admit to
the problem

2. How motivated is this offender to participate in the program?

1	2	3	4	5
---	---	---	---	---

Not at all
motivated

Moderately
motivated

Very
motivated

Appendix OMotivational Interviewing Protocol

Introduce client to reason for this interview and obtain informed consent.

--We have about an hour together. We'll be having a chat about some of your experiences with drugs before you were incarcerated. I'm a university student and this interview is a part of my thesis research.

--Everything that you say here is confidential, it's between us, with some exceptions. These exceptions are unlikely to come up in our discussion, but let's review just to make sure. If you tell me about a life being in danger (including your own), if you tell me about child is being abused or neglected, if you tell me about things happening in this institution that are against the law or that make this a more dangerous place to be, or if you tell me specific details (like names or addresses of victims) of crimes that the police don't know about or that haven't happened yet, I might have to share that information with other people. Everything else that you discuss with me is between us.

--The information that you give me will be used for research purposes only.

--I also need your consent to audiotape your interview for the purpose of rating the interviewer. You will remain

anonymous.

--I'll need you to sign this consent form before we get started.

PRE-INTERVIEW QUESTIONS

(A)-"Tell me about your use of drugs before you were incarcerated."

- "So you used _____. What kinds of effects did it have on you?"

-*Use simple reflection...*- "What else?"...-
Summarize...

(B)-"What about a typical day or session of using? Tell me what that was like for you."

-*Use reflection.*

-*Verify the target drug of use and mode of use.*

(C)-"So, now where are you at with your drug use?"

GENERAL RESPONSE TO RESISTANCE

(When the client is arguing, interrupting, denying, or ignoring)

(A)-*Use simple reflection.*

(B)-*Use meta-reflection:* "I noticed that you changed the subject. I wonder if you are uncomfortable because of what I just said."

(C)-*Use double-sided reflection:* "You say that you're here because you have to be here, not because you

want to be here. On the one hand, I'm hearing that you do not really want to be here, while on the other hand I'm seeing that you are still here, you haven't left."

(D)-*Stress personal choice*: "I am really interested in how you feel."

(E)-*Shift focus*.

(F)-*Agreement with a twist*: "You're right, it can be very annoying if other people are telling you what to do with your life. But, I'm also hearing that these people genuinely care about you and may actually share some of your concerns about you using."

(G)-*Reframe (e.g., When a client says that the therapist would not understand because the therapist has probably never used drugs)*: "It sounds like it is important for you to know that others have been where you've been."

(H)-*Affirm/validate*: "I get the feeling that talking about this is very difficult for you. I admire your courage for being here and talking about it."

I. PRECONTEMPLATION STAGE

(-Focus on consciousness raising-increasing awareness of his problem.)

(-Reinforce process use..-Emotional arousal, connecting, go to next stage.)

1. Survey the offender's personal life priorities.

-“So, what kind of things are important to you? You know, meaningful.”...-“Tell me more about that.”...-*Use simple reflection.*

-“How do drugs fit into your life?”...-*Use reflection.*

-“What does using drugs mean to you?”...-*Use reflection.*

2. Reflect how priorities and situational demands link with drug use.

-“...using drugs is an important part of (priority/demand).”

-“...you're using most when you feel...”

-“...people you care about respond to your using...”

3. Summarize and affirm offender's primary goals.

-*Summarize first:* “So what I hear you saying is...”

-*Affirm:* -“The fact that you are sitting here talking about your drug use is a big step. And I really respect you for that.”

-“I just want to say that I really admire you for being so candid about this when it has been so difficult for you.”

-“So drug use is a way of coping. It's really good that you found a way to cope. Yet, it's not an ideal way to cope. It's affected you adversely and that's why you're here.”

II. CONTEMPLATION STAGE

(Focus on connecting, emotional arousal, drug's impact on other people)

(Reward process use...Problem conflicts with his values, move to prep).

1. Clarify the good things and the not so good things about drug use.

(A)-"So, tell me what do you like about using drugs?"

- "So you like _____" ... - "Tell me more about that." ... *Use reflection.*

- "What other positives can you think of?"

- "So you're saying that..." ... - "What else?" ... - *Use reflection.*

- "Then it sounds like the good things for you are _____, _____, and _____. Is there anything else?"

(B)-"On the other side, what are the not so good things about using?"

- *Use reflection.* ... - "Tell me a bit more about that." ... - "What else?" ...

- "So it sounds like you're worried about _____, can you give me a recent, specific example of that?" ... - *Use reflection.* ...

- "...and to you that felt...What I hear you saying..."

-*Summarize*: "So you are saying that _____, _____, and _____ are the not so good things of using."

-*Affirm*: "It takes a lot of courage to share this kind of personal stuff"

-*Summarize A & B*:

"So, it seems like you feel two ways about using d drugs. On the one hand you've found.....while on the other hand....Other concerns you've expressed are _____ and _____. Is there anything that I've missed?"

2. Evoke discrepancy between the pro's for changing and the status quo.

(A) -*Provide personalized feedback: Explain DAST results compared to normative data.*

-*"Well, I don't know if this will make a difference for you or not, but it appears that your scores on the computerized assessment that you completed indicate that you scored in the _____ range with regards to drug use. Compared to other people, you....*

What do you make of this? Is it what you expected?"

-*"You seem...about this information."*

-*Use reflective listening and/or a statement like one of the following, where appropriate:*

"And that worries you."

"I can see how that might concern you"

"I can see how you might feel"

- "What you do with these results is completely up to you. If you decide that you don't want to change, then that's your decision to make. If you want to change, then you can change. It's up to you".

- *Reflect back any self-motivational statements.*

(B) - "So, tell me how you would describe yourself, you know, your good qualities, what you like about yourself."...- *Summarize & reflect.*

- "And what about you when you are using drugs. What words come to mind then to describe yourself?"...- *Summarize & reflect.*

- "So how do these things fit together, you know, you as a list good versus you as list 'bad' qualities of drug user?"...- *Reflect.*

(C) - "In what ways do you think that others you care about have been harmed by your drug use?"...- "Tell me more about that."

- "You didn't like that very much"...- *Reflect self-motivational statements*...- "That must have been very difficult for you".

(D) - "What do you suppose are the worst things that might happen if you keep on the way you've been going?"... *Use reflection.*

- "And that worries you." ... "I can see how you might feel."

(E) - "If you decide to make a change, what kinds of things do you see improving for you?" ... *Use reflection....* "What else?" ... "Such as..."

(F) - *Summarize:* "So what I hear you saying is that if you continue on this road you are worried that _____ might happen. A bit earlier, you also said that you were list bad things about using drugs when you used drugs. On the other hand, what I hear you saying now is that if you changed your life could improve by _____."

(G) - "What's the best way things could turn out?" ... *Reflect.*

(H) - *Validate and affirm client:*

- "I get the feeling that your plans are realistic and attainable."

- "It's great that you want to do something about your drug use."

- "The fact that you are sitting here talking about your drug use is a big step. And I really respect you for that."

- "I just want to say that I really admire you for being so candid about this when it has been so difficult for you."

- "So drug use is a way of coping. It's really good

that you found a way to cope. Yet, it's not an ideal way to cope. It's affected you adversely and that's why you're here."

3. Elicit self-motivational statements in order to resolve ambivalence.

(A) - "So what makes you think you should do something about your drug use?"

(B) - "So what bothers you most about your drug use?"...-
"That worries you."

(C) - "What other things have you noticed about your drug use that concern you or others you care about?"

- "I can see how that might concern you/them."...-What else?"

- "So, you're saying that what bothers you most about your drug use is _____ and you're also worried about _____, _____, etc...Anything else?"

(D) - "So what do you hope to gain by changing? What's in it for you?"...

(E) - "What will help you feel confident that you can change?"...Reflect.

4. Summarize and affirm offender's primary goals.

-Summarize first: Reflect back what was said in the interview, including a summary of the positive things contrasted with the negative. Review client's personal priorities, primary goals, major concerns, and causes of discrepancy. Reflect self-motivational statements.

Review client's change plan. Restate therapist's affirmations.

- "Our hour is coming to a close. Let's see if I can pull together everything that we discussed. You said..."

- Verify that all information is correct.

- "...Is all that right? Is there anything I've missed or gotten wrong?"

Thank offender for his participation.

III. PREPARATION STAGE

(-Focus on seeing how problem conflicts with values and increasing) (commitment & planning...Reinforce process use)

(i) *- Provide personalized feedback: Explain DAST results compared to normative data.*

- "Well, I don't know if this will make a difference for you or not, but it appears that your scores on the computerized assessment that you completed indicate that you scored in the _____ range with regards to drug use. Compared to other people, you....

What do you make of this? Is it what you expected?"

- "You seem...about this information."

- "What you do with these results is completely up to you.

If you decide that you don't want to change, then that's your decision to make. If you want to change, then you can

change. It's up to you".

-Reflect back any self-motivational statements.

(ii) - "So what bothers you most about your drug use?"...-

"That worries you."

(iii) - "What things have you noticed about your drug use that concern you or others you care about?"

- "I can see how that might concern you/them."...- "What else?"

(iv) - "So what do you hope to gain by changing? What's in it for you?"...

1. Summary of client/therapist interaction once client is committed.

-Review and affirm client's progress thus far.

- "So lets just bring together what you have told me thus far. So you were saying that..."

-Include the client's interpretation of the problem, the contrasting views of the client's ambivalence, assessment results, learning experiences from the client's past attempts to change, the client's intentions to change, the client's self-motivational statements, and appropriate affirmations that reflect the therapist's views on the client's situation.

2. Validate current motivation and previous change attempts

- "On your past attempts to change your drug use, what

worked before?"

-*Affirm past attempts*: "It sounds like you have really put a lot of time and effort into changing. With that kind of dedication and the right change plan, you're good to go."

- "So what were triggers for you before?...Good. Knowledge is power."

3. Evoke further self-motivational statements to strengthen commitment.

- "So where do you go from here? What's next?"

- "What will you do now? What are your options?"

- "What plan will help you feel confident about changing your drug use?"

4. Provide advice (only when invited to do so) and other information.

- "I have a lot of ideas. I'd like to hear yours first. It is important that what we come up with is right for you."

- "I don't know if this would work for you or not, but I can give you an idea of what has worked for some other people in your situation...Some people reward themselves for not using drugs, do other things they have to or like to do instead of doing drugs, and avoid their triggers--people or places associated with using. What do you think would work for you?"

(a) *Change reinforcers and contingencies--reward yourself for not using (self-praise, a present, praise from others).*

(b) *Change one's reactions to stimuli--substitute healthy responses for unhealthy ones; counter urges by doing something else.*

(c) *Stimulus control--change environment to control triggers (avoid certain places or people).*

5. Negotiate a change plan.

-Make plan: Develop clear, behavioural goals and timeframes.

(a) *-"In your past attempts to quit have you rewarded yourself for not using drugs?"*

(b) *-"So what kinds of things could you do instead of doing drugs?"*

(c) *-"How do you feel about avoiding your triggers, you know, certain people or places?"*

(d) *-"When do you think you want to start your plan?"*

(e) *-"How, specifically, do you want to see these hours, days, weeks, months...unfolding with regards to rewarding yourself, doing other things, and avoiding triggers?"*

(f) *-"How confident are you that you can achieve these goals?"*

-If client's confidence is not optimal ask what needs to be added or changed in order to make it better.

-Attempt to prevent relapse by addressing barriers to change before the plan is finalized: "Do you foresee other problematic triggers?"

-Summarize plan: "So, what I hear you saying is that you want to..."

6. Solidify client's commitment to change.

-Set up and rehearse behavioural change strategies in examples and role-plays.

-Provide constructive performance-based feedback in order to enhance client's self-efficacy. If a client is disappointed in his or her performance, stress that it was only an experiment and that practice will improve performance.

-Discuss potential helping relationships: "What family or friends do you think might be able to help you in your change process?"

-Reflect how change is connected to new personal priorities: "How does this change plan fit in to what you want, what is important?"

-Reflect self-motivational statements.

-Validate and affirm client goals.

-"The fact that you are sitting here talking about your drug use is a big step. And I respect you for that."

-"I just want to say that I really admire you for being so candid about this when it has been so

difficult for you."

-*"So drug use is a way of coping. It's really good that you found a way to cope. Yet, it's not an ideal way to cope. It's affected you adversely and that's why you're here."*

7. Summarize and affirm client's primary goals.

-Summarize first: Reflect back what was said in the interview, including a summary of the positive things contrasted with the negative. Review client's personal priorities, primary goals, major concerns, and causes of discrepancy. Reflect self-motivational statements. Review client's change plan. Restate therapist's affirmations.

-"Our hour is coming to a close. Let's see if I can pull together everything that we discussed. You said..."**

-Verify that all information is correct.

-"...Is all that right? Is there anything I've missed or gotten wrong?"**

Thank offender for his participation.

IV. ACTION STAGE & MAINTENANCE STAGE

(Focus on rewards, substituting, helping relationships, changing environment to control triggers)

(i) *-Provide personalized feedback: DAST results compared to normative data.*

- "Well, I don't know if this will make a difference for you or not, but it appears that your scores on the computerized assessment that you completed indicate that you scored in the _____ range with regards to drug use. Compared to other people, you.....

What do you make of this? Is it what you expected?"

- "You seem...about this information. I can see how you might feel"

-Reflect back any self-motivational statements.

(ii)-Review and affirm client's progress thus far.

-Review: "So lets just bring together what you have told me thus far. So you were saying that..."

-Affirm: "I just want to say that I really admire you for being so candid about this when it has been so difficult for you."

1. Elicit further self-motivational statements.

- "So what do you hope to gain by continuing to not use drugs? What's in it for you?"...-Reflect back self-motivational statements.

2. Discuss successful and unsuccessful behavioural change strategies.

-Action stage: "What skills are sustaining your confidence about changing your drug use?"

-Maintenance stage: "What lifestyle habits are helping you to prevent a slip back to drug use?"

3. Provide constructive performance-based feedback and support.

-Affirm positive changes: "It sounds like you are really putting a lot of time and effort into changing."

-Reinforce self-efficacy by having the client take responsibility for the changes he or she has made.

-Discuss changes that can be made to improve performance.

(a) Change reinforcers and contingencies--reward yourself for not using (self-praise, a present, praise from others).

-"So how have you rewarded yourself for not using?"

(b) Change one's reactions to stimuli--substitute healthy responses for unhealthy ones; counter urges by doing something else.

-"So what kinds of things do you do instead of doing drugs?"

(c) Stimulus control--change environment to control triggers (avoid certain places or people).

-"So how have you avoided your triggers?"

(d) Helping relationships--"How have others you care about been supportive of your changing?"

4. Affirm client's progress.

-When the client discusses self-doubts, remind the client of how he or she coped with similarly difficult

situations in the past...

-Remind the client of his or her overall progress when the client focuses on future hurdles.

-When clients report recent lapses or relapse, affirm the client for the previous quit attempt, examine together the strengths and weaknesses of the previous change plan, summarize the positives and what can be learned from the negatives, re-assess readiness for change, and continue intervention at the appropriate stage level.

5. Summarize and affirm client's primary goals.

-Summarize first: Reflect back what was said in the interview, including a summary of the positive things contrasted with the negative. Review client's personal priorities, primary goals, major concerns, and causes of discrepancy. Reflect self-motivational statements. Review client's change plan. Restate therapist's affirmations.

-"Our hour is coming to a close. Let's see if I can pull together everything that we discussed. You said..."

-Verify that all information is correct.

-"...Is all that right? Is there anything I've missed or gotten wrong?"

Thank offender for his participation.

Appendix PInterview Control Protocol

Introduce client to reason for this interview and obtain informed consent.

--We have about an hour together. We'll be having a chat about a variety of your experiences before you were incarcerated and how those may have changed since you've been on the inside. I'm a university student and this interview is a part of my thesis research.

--Everything that you say here is confidential, it's between us, with some exceptions. These exceptions are unlikely to come up in our discussion, but let's review just to make sure. If you tell me about a life being in danger (including your own), if you tell me about child is being abused or neglected, if you tell me about things happening in this institution that are against the law or that make this a more dangerous place to be, or if you tell me specific details (like names or addresses of victims) of crimes that the police don't know about or that haven't happened yet, I might have to share that information with other people. Everything else that you discuss with me is between us.

--The information that you give me will be used for research purposes only. I also need your consent to audiotape your interview for the purpose of rating the

interviewer. You will remain anonymous.

--I'll need you to sign this consent form before we get started.

Begin interview...

-“I'd like us to talk about some issues related to your current health, education, and employment. I'm also interested in how these have changed for you since you have been in the institution.” *Ask offender to elaborate throughout the interview depending on his responses.*

I.GENERAL HEALTH (nutrition, tobacco use, exercise, sleep patterns, stress)

a) Nutrition

Are you having more or less servings of milk products since you have been incarcerated?

Bread products?

Vegetables?

Fruits?

Meat products?

Did you used to limit your use of fats like (fatty meat, butter, lard)? How about now?

Did you add salt to your food? Now?

Did you try to limit your use of sugar, candy or sweet desserts? And now?

Did you try to eat high fibre foods? How about now?

Did you have any health concerns regarding your eating habits before arrest? And what about now?

b) Caffeine use

How many cups of caffeinated coffee do you drink in a usual week? Is this more or less than what you used to drink?

How many colas did you used to drink? How about now?

Have you ever been concerned with the amount of caffeine you drink?

c) Tobacco use

Are you a smoker?

How many years have you smoked?

How much did you smoke per day before being arrested? How much do you smoke now?

Do you feel that you smoke too many cigarettes?

Are you concerned about the effects of smoking on your health?

d) Exercise

Before arrest, how many days in a usual week did you participate in sports or engage in vigorous physical activity for at least 15 minutes?

How has that changed since being incarcerated?

Do you think you get enough exercise?

How would you rate your overall physical health in the months before your arrest? Now?

e) Sleep patterns

Do you get more or less sleep now than before you were incarcerated?

Do you worry about your sleeping habits now?

Did you ever worry about your sleeping habits before you were incarcerated?

f) Stress

Do you feel under stress? Are you feeling more stress now or were you feeling more stressed on the outside?

Have you ever felt depressed in the past? Have you been feeling depressed or unhappy lately?

Do you sometimes feel low in energy?

II. EDUCATION (educational achievement and plans to further education)

How far had you gone in school before arrest? Has this changed?

What courses or trades have you taken since being inside?

Do you think you need more education?

What do you plan to take?

III.EMPLOYMENT (past employment and employment plans following release)

What is your usual job?

Did you work full-time or part-time?

Do you think you need more job skills?

What job do you intend to hold following release?

IV.OTHER

Have there been changes in other aspects of your life since you have been incarcerated that you want to talk about (e.g., changes in relationships)?

Thank offender for his participation.

Appendix Q
Informed Consent Form (MI)

The purpose of an informed consent form is to make sure you understand the purpose of the study and how you will be involved. The informed consent provides enough information for you to decide if you want to participate in the study.

Research personnel: The following people are involved in this study and may be contacted at any time: Susan Vanderburg (Main Researcher, 613-520-2644 to leave a message) and Dr. J. Weekes (Faculty Sponsor, 613-947-0587). If you have any ethical questions or concerns regarding this study, please contact either Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 613-520-2600, ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 613-520-2600, ext. 2648).

Purpose and requirements: The purpose of this study is to examine attitudes toward changing drug use. If you participate, you will complete a set of questionnaires today, an interview in the next couple of days on your attitudes toward changing drug use, another set of questionnaires after about a week, and a final set after you complete the Offender Substance Abuse Pre-Release

(OSAP) program. On each of these occasions you will be needed for about one hour. Another part of the study involves the researcher obtaining information on drug use from your intake file.

Right to withdraw: Your participation is completely voluntary. There is no reward for participating, and no penalty for not participating in this study. Your choice to participate or not to participate in no way affects your eligibility for current or future treatment services at this institution. At any point during the study you have the right to not answer any questions or to withdraw from the study. Separate consent will be obtained later for participating in the interview and for audiotaping the interview. Audiotapes would be used only to rate the interviewer and you would remain anonymous. Your right to refuse audiotaping in no way affects the interview or your participation in the study.

Anonymity/Confidentiality: Information gathered in the study will be kept confidential. All information will be coded so that your name is not associated with the data. In addition, the coded data will be made available only to the main researcher involved in the study. Individual offenders will not be identified in any of the study's reports.

Signatures: I have read the above description of research and understand the conditions of my participation. I give my permission to the researcher to make use of the information gathered in the study. I also give permission to the researcher to review my file for information on drug use and to obtain follow-up information for research purposes only.

Full Name (Print): _____

Participant Signature: _____

Date: _____

Witness Signature: _____

Researcher: _____ Susan Vanderburg

Researcher Signature: _____

Appendix R
Informed Consent Form (IC)

The purpose of an informed consent form is to make sure you understand the purpose of the study and how you will be involved. The informed consent provides enough information for you to decide if you want to participate in the study.

Research personnel: The following people are involved in this study and may be contacted at any time: Susan Vanderburg (Main Researcher, 613-520-2644 to leave a message) and Dr. J. Weekes (Faculty Sponsor, 613-947-0587). If you have any ethical questions or concerns regarding this study, please contact either Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 613-520-2600, ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 613-520-2600, ext. 2648).

Purpose and requirements: The purpose of this study is to examine attitudes toward changing drug use and how your general health, education, and employment have changed since you have been incarcerated. If you participate, you will complete a set of questionnaires today, an interview in the next couple of days on how your life has changed since you have been on the inside, another set of questionnaires after about a week, and a final set after you

complete the Offender Substance Abuse Pre-Release (OSAP) program. On each of these occasions you will be needed for about one hour. Another part of the study involves the researcher obtaining information on drug use, general health, education, and employment from your intake file.

Right to withdraw: Your participation is completely voluntary. There is no reward for participating, and no penalty for not participating in this study. Your choice to participate or not to participate in no way affects your eligibility for current or future treatment services at this institution. At any point during the study you have the right to not answer any questions or to withdraw from the study. Separate consent will be obtained later for participating in the interview and for audiotaping the interview. Audiotapes would be used only to rate the interviewer and you would remain anonymous. Your right to refuse audiotaping in no way affects the interview or your participation in the study.

Anonymity/Confidentiality: Information gathered in the study will be kept confidential. All information will be coded so that your name is not associated with the data. In addition, the coded data will be made available only to the main researcher involved in the study. Individual

offenders will not be identified in any of the study's reports.

Signatures: I have read the above description of research and understand the conditions of my participation. I give my permission to the researcher to make use of the information gathered in the study. I also give permission to the researcher to review my file for information on drug use and to obtain follow-up information for research purposes only.

Full Name (Print):	_____
Participant Signature:	_____
Date:	_____
Witness Signature:	_____
Researcher:	_____ Susan Vanderburg _____
Researcher Signature:	_____

Appendix S
Informed Consent Form (NC)

The purpose of an informed consent form is to make sure you understand the purpose of the study and how you will be involved. The informed consent provides enough information for you to decide if you want to participate in the study.

Research personnel: The following people are involved in this study and may be contacted at any time: Susan Vanderburg (Main Researcher, 613-520-2644 to leave a message) and Dr. J. Weekes (Faculty Sponsor, 613-947-0587). If you have any ethical questions or concerns regarding this study, please contact either Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 613-520-2600, ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 613-520-2600, ext. 2648).

Purpose and requirements: The purpose of this study is to examine attitudes toward changing drug use. If you participate, you will complete a set of questionnaires today, another set of questionnaires after about a week, and a final set after you complete the Offender Substance Abuse Pre-Release (OSAP) program. On each of these occasions you will be needed for about one hour. Another

part of the study involves the researcher obtaining information on drug use from your intake file.

Right to withdraw: Your participation is completely voluntary. There is no reward for participating, and no penalty for not participating in this study. Your choice to participate or not to participate in no way affects your eligibility for current or future treatment services at this institution. At any point during the study you have the right to not answer any questions or to withdraw from the study.

Anonymity/Confidentiality: Information gathered in the study will be kept confidential. All information will be coded so that your name is not associated with the data. In addition, the coded data will be made available only to the main researcher involved in the study. Individual offenders will not be identified in any of the study's reports.

Signatures: I have read the above description of research and understand the conditions of my participation. I give my permission to the researcher to make use of the information gathered in the study. I also give permission to the researcher to review my file for information on

drug use and to obtain follow-up information for research purposes only.

Full Name (Print):

Participant Signature:

Date:

Witness Signature:

Researcher:

Susan Vanderburg

Researcher Signature:

Appendix T
Interview Consent Form (MI)

Full Name(Print): _____ Researcher: Susan Vanderburg

I understand that I will be participating in an interview today which will last for approximately one hour. I also understand that in the interview we will be discussing my drug use before incarceration and my current feelings about changing drug use.

I understand that at any point during the interview I have the right to not answer questions or to withdraw from the study.

I understand that the information that I give in this interview will be used for research purposes only. I understand that anything that I say in the interview will be held confidential with some exceptions. I understand that confidentiality will not be maintained if I give information about:

- a life being in danger (including my own),
- a child being abused or neglected,
- things happening in this institution that are against the law or that make this a more dangerous place to be, or

- specific details (like names or addresses of victims) of crimes that the police do not know about or that have not happened yet.

I agree to participate in the thesis research conducted by Susan Vanderburg.

Participant Signature: _____

Date: _____

Researcher Signature: _____

I agree to have this interview audiotaped. I understand that the tape will be used only to rate the interviewer and that I will remain anonymous.

Participant Signature: _____

Date: _____

Researcher Signature: _____

I refuse to have this interview audiotaped. I understand that my right to refuse this taping in no way affects the following interview or my participation in the study.

Participant Signature: _____

Date: _____

Researcher Signature: _____

Appendix U
Interview Consent Form (IC)

Full Name(Print): _____ Researcher: Susan Vanderburg

I understand that I will be participating in an interview today which will last for approximately one hour. I also understand that in the interview we will be discussing how my life has changed since I have been incarcerated. Specifically, we will be discussing changes in my general health, education, and employment.

I understand that at any point during the interview I have the right to not answer questions or to withdraw from the study.

I understand that the information that I give in this interview will be used for research purposes only. I understand that anything that I say in the interview will be held confidential with some exceptions. I understand that confidentiality will not be maintained if I give information about:

- a life being in danger (including my own),
- a child being abused or neglected,
- things happening in this institution that are against the law or that make this a more dangerous place to be, or

- specific details (like names or addresses of victims) of crimes that the police do not know about or that have not happened yet.

I agree to participate in the thesis research conducted by Susan Vanderburg.

Participant Signature: _____

Date: _____

Researcher Signature: _____

I agree to have this interview audiotaped. I understand that the tape will be used only to rate the interviewer and that I will remain anonymous.

Participant Signature: _____

Date: _____

Researcher Signature: _____

I refuse to have this interview audiotaped. I understand that my right to refuse this taping in no way affects the following interview or my participation in the study.

Participant Signature: _____

Date: _____

Researcher Signature: _____

Appendix V
Debriefing Sheet

Thank you for participating in this study. The purpose of the study was to gain an understanding of how an intervention called motivational interviewing can increase offender motivation for changing drug use and participation in drug treatment (the Offender Substance Abuse Pre-Release--OSAP--program). Motivational interviewing is a directive, client-centered style of counselling which is used to increase motivation and strengthen commitment for changing almost any behaviour. According to this approach, therapists direct clients through the change process in an atmosphere of respect, non-confrontation, and empathy, all with the understanding that it is the client who will make the final decision on whether or not to make any changes.

Some of you received motivational interviewing, while others received a control interview, and others did not receive any interview. The three sets of tests that you completed measured your readiness to change drug use. The purpose of completing these tests was to find out if those of you in the motivational interviewing group increased your motivation for changing drug use compared to those of you in the control groups. Your answers were also examined to find out if those of you in the motivational

interviewing group increased your motivation and participation in the OSAP program compared with controls. If results show that offenders who received motivational interviewing have more motivation to change drug use and also that they get more out of the OSAP program, then motivational interviewing may become a part of the standard institutional treatment schedule.

This study was carried out by Susan Vanderburg as part of a requirement for her Doctoral thesis at Carleton University.

If you have any questions or comments about this study, you can contact Susan Vanderburg (Main Researcher, 613-520-2644 to leave a message) or Dr. J. Weekes (Faculty Sponsor, 613-947-0587). If you have any ethical concerns regarding this study, please contact Dr. M. Gick (Chair, Department of Psychology Ethics Committee, 613-520-2600, ext. 2664) or Dr. K. Matheson (Chair, Department of Psychology, 613-520-2600, ext. 2648).

Thank you for the time and effort you took to participate in this research.