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THE EFFECT OF COERCION  
ON OUTCOME OF TREATMENT FOR ALCOHOL ABUSE

by

Grace Alison Woo

B.A., University of Western Ontario, 1985

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS OF THE DEGREE OF  
MASTER OF ARTS  
in the Faculty  
of  
Education

Grace Alison Woo 1991

SIMON FRASER UNIVERSITY

November, 1991

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ISBN 0-315-78285-4

APPROVAL

Name: Grace A. Woo  
Degree: Master of Arts  
Title of Thesis: The Effect of Coercion on Outcome of  
Treatment for Alcohol Abuse  
Examining Committee:  
Chair: Norman Robinson

Jack Martin  
Senior Supervisor

Mike Manley-Casimir  
Professor

Anne Corbishley  
Faculty Graduate Associate  
Faculty of Education  
Simon Fraser University  
External Examiner

Date Approved November 27, 1991

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## ABSTRACT

The major purpose of this study was to examine the effect of coercion on the outcome of treatment for alcohol abuse.

Three comparison groups of coercion were considered: (1) "personal," representing family coercion or physical health concerns; (2) "non-personal," representing coercion by legal systems or employers; and (3) "voluntary," representing individuals who identified no apparent coercion. Treatment outcome, in terms of drinking behaviour relative to pre-treatment level, was considered at each of treatment completion, and at 3, 6, and 12 months following treatment completion. Each of these time periods was considered as a separate database.

One hundred and seventy four former clients of a community based, outpatient treatment facility formed the subject pool. Client specific data were extracted from existing client files.

It was hypothesized that individuals attending treatment due to "personal" coercion would show more favourable treatment outcomes than those coerced by "non-personal" coercion and those who identified no

apparent coercion.

Preliminary chi-square statistics were calculated to ensure equality of frequencies for the three comparison groups on each of severity of problem, marital status, and employment status. Primary chi-square statistics examined differences in treatment outcome amongst the three comparison groups. Secondary chi-square statistics considered marital and employment status in order to examine possible confounding of coercion by these two variables.

The results of the primary hypothesis testing, contrary to the hypothesis, indicated no significant differences amongst the three groups. Secondary hypothesis testing indicated significant differences amongst the groups only for employed individuals at 3 and at 6 months followup.

The results of the study were interpreted in relation to previous research on the effectiveness of coercion on treatment outcome. Implications of the present findings, limitations of the study, and future research were outlined.

## ACKNOWLEDGEMENTS

Many people contributed their ideas and support during the time over which the present study was completed. First, I would like to thank my advisor, Jack Martin, whose guidance, encouragement and unending support were very much appreciated. As well, I would like to thank Lorna Chamberlain and Mr. Ernie Redden for the permission to access files at the Addiction Unit, Sarnia General Hospital, and Paul Stebbins for his support and his insightful and thought provoking suggestions.

Finally, I would like to thank my parents, Chuck and Shirley Woo, and my partner, Robert Plank, for their love and unfailing encouragement, patience, and support.

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## Chapter I

### Introduction

#### Background and Rationale for the Study

Many studies have examined the effects of non-treatment factors (e.g., marital status, employment status, age, gender) on the outcome of treatment for alcohol abuse. Both inpatient and outpatient programs have been studied. Referrals are made to these programs from a wide variety of sources. The nature of such referrals has been examined only recently. It is quite evident that very few persons attend treatment for alcohol abuse without even a small degree of coercion (Smart, 1974).

Some individuals are overtly coerced to attend treatment by being threatened by the loss of something deemed important (e.g., their job, family, freedom). Others may perceive the possible loss of something deemed important. Both overt (i.e., obvious) and covert (i.e., perceived) coercion may affect an individual's success in treatment for alcohol abuse.

Research has examined the possible effects of legal coercion (Dunham & Mauss, 1982; Fagan & Fagan, 1982; Gallant, 1971; Rosenberg & Liftik, 1976; Ward, 1979) and coercion by an employer (Freedberg &

Johnston, 1978; 1980; Heyman, 1976; Smart, 1974).

Also, some research into the possible effects of family coercion by spouses has been conducted (Freedberg & Johnston, 1978). However, there is conflicting evidence concerning the true effectiveness of such forms of coercion on outcome of treatment for alcohol abuse (Freedberg & Johnston, 1980; Ward, 1979).

Freedberg and Johnston (1978) also examined the effects of multiple sources of perceived coercion, and how they change over time. They suggested many interesting trends.

While more research is considering the effect of coercion on treatment for alcohol abuse, there is little information in the literature comparing the effects of different sources of coercion to attend treatment, in and of themselves, on the long term outcome of treatment for alcohol abuse. Some studies examine coercion and attrition or compliance in treatment (e.g., Rosenberg & Liftik, 1976; Schurr, Brown, & Zelhart, 1987), coercion and recurring legal problems (e.g., Hoffman et. al., 1987; Miller et. al., 1984), or coercion and work performance (e.g.,

Freedberg & Johnson, 1980; Heyman, 1976; Smart, 1974). This study will examine the static factor of initial coercion to attend treatment on the short and long-term outcome of treatment for alcohol abuse.

#### Purpose of the Study

This study explores the possibility that particular sources of coercion to attend treatment may be associated with more favourable alcohol abuse treatment outcomes than other sources of coercion, or than no apparent coercion. Such findings could fill some of the gaps in the literature and could provide implications for legal systems, the workplace, medical health providers, and treatment providers as to the viability of using coercion to initiate treatment for alcohol abusers. For example, identification of alcohol abuse at earlier, less detrimental stages, and subsequent earlier "coercion" to receive treatment, might be recommended if data and analyses support such a practice. Initial and long-term outcomes of clients who attended treatment based on various sources of coercion are compared in this study.

For the purpose of this study, coercion is defined

as the area of life in which clients identified the greatest risk of losing something deemed to be of importance. This would differ from motivation or persuasion, which do not necessarily identify clear risk of loss. The "sources of coercion" in this study are related to the reestablishment or maintenance of a desirable situation. For example, reestablishment or maintenance of the family unit, good physical health, employment status, and freedom (as opposed to incarceration) would be the desirable situations for individuals identifying family, physical health, employer, and legal coercion respectively.

This study will also examine the literature relevant to the influence of non-treatment factors, including coercion, on treatment for alcohol abuse. The findings from this study will address some of the gaps in the literature with regards to the effect of the source of coercion to attend treatment, as a non-treatment factor in and of itself, on the long-term outcome of alcohol abuse treatment. Such factors as self-esteem, perceived coercion, and locus of control will not be considered, as these other factors would

expand the scope of the study beyond a focus on the effect of initial coercion on treatment outcome.

### Research Hypothesis

The null hypothesis for this study is that initial treatment outcome and long-term outcome are independent of the existence of coercion on individuals seeking treatment for alcohol abuse in a community-based, outpatient, day-care program. The research hypothesis, therefore, is that there is a relationship between initial and long-term treatment outcomes and the existence of coercion to attend treatment.

It is expected that there will be no differences in treatment outcome initially. This expectation is consistent with much of the research on initial outcome of alcohol abuse treatment (Freedberg & Johnston, 1978; 1980; Smart, 1974; Vogler, Compton, & Weissbach, 1976). However, as it is inherent in this treatment program that individuals who do not maintain complete abstinence from alcohol while attending treatment would generally be discharged prematurely from treatment, this hypothesis will not formally be tested and discussed.

It is expected that as time elapsed since treatment completion increases, differences in long-term outcome will be evident. As obvious coercive pressures decrease, so may clients' motivation to maintain treatment changes. Such decrease in coercive pressure is most likely to occur for individuals coerced to attend treatment by non-personal pressures such as coercion from legal systems and employers, as well as those who identify no apparent coercion. For legally coerced individuals, pressures (e.g., pending court dates or probation periods) rarely continue as long as 12 months (i.e., the period for which follow-up data are tabulated) following treatment completion.

For those coerced to attend by employers, the pressure often decreases with initial improvement. Individuals attending treatment due to legal or employer coercion may be able to make changes which satisfy those who are coercing them. These changes, however, may not necessarily involve long-term changes, but only enough to "get the law/boss off the client's back."

While such a decrease in pressure may also be

evident for individuals who are suffering physical health problems due to drinking and for those coerced to attend treatment by families, these latter coercive elements are more personal. In order to achieve long-term improvements with family and with one's physical health, long-term changes may be more necessary than when the source of coercion is the legal system or employers. Family and physical health may be more greatly affected if individuals do not maintain long-term changes in their drinking behaviour. More specifically, it may be more difficult to hide a return to abusive drinking behaviour from family and from one's own body than it would be to hide it from employers and the legal system. Therefore, such personal coercion may tend to be a more effective coercive element with respect to treatment outcome and maintenance of treatment outcome.

Freedberg and Johnston (1978) do suggest that coercion involving spouses, children, health and self-respect tended to show greater influence on subjects' alcohol consumption than did coercion involving the legal system. They do not compare these sources of

coercion with employer coercion.

In sum, it is expected that individuals attending treatment due to concern over physical health problems due to drinking and due to coercion from family will show more favourable long-term outcomes than individuals coerced by legal systems and employers, as well as those attending treatment due to no apparent coercion. That is, long-term treatment outcome and the existence of coercion to attend treatment will not be independent.

#### Scope of the Study

The present study follows individuals who were admitted to and completed the 4-week day care treatment program at the Lakeshore Health Clinic/Addiction Unit, Sarnia General Hospital, Sarnia, Ontario, Canada from 1 January 1985 to 31 December 1989, to 12 months post treatment. One hundred and seventy-four individuals participated in the study. Data about drinking behaviour at treatment completion and at 3, 6, and 12 months following completion were collected.

The discussion of relevant literature considers the existence and effects of coercion on treatment for

both alcohol and drug abuse. As well, the roles of other non-treatment factors on treatment outcome will be discussed.

#### Procedure of the Study

Referral data and data about drinking behaviour at treatment completion and at 3, 6, and 12 months following completion were collected from existing client files for the 174 participants (See Appendix A).

The independent variable was the existence of identifiable coercion as the motivation for clients' attendance at, and compliance with treatment regulations. Five categories of the independent variable were considered: (1) no apparent coercion, (2) family, (3) legal, (4) employer, and (5) health. Clients were assigned to one of the five coercion groups based on referral and assessment data.

The "family" group consisted of individuals whose files indicated the existence of or threat of family breakdown due to drinking behaviour. The "employer" group consisted of individuals who were at risk of losing their source of income if they did not attend treatment and maintain treatment outcomes. The

"legal" group consisted of individuals facing legal consequences because of their drinking behaviour. The "health" group consisted of individuals who feared the deterioration of their physical health due to their drinking behaviour. The "no apparent coercion" group consisted of those clients whose files showed no apparent coercion as described above. For these clients, it cannot be assumed that no coercion existed, only that it was not apparent.

#### Design and Statistical Analyses

The data from the "family" and the "health" groups were combined, representing coercion due to personal concerns. The data from the "legal" and the "employer" groups were combined, representing coercion due to less personal concerns. Thus, there were three comparison groups representing coercion: (1) voluntary (i.e., no apparent coercion), (2) personal (i.e., family and health coercion), and (3) non-personal (i.e., legal and employer coercion). This procedure also increased group sizes so as to add to the statistical power of the tests conducted.

From referral data, frequencies were computed for

participants' marital status, employment status, and severity of drinking problem. Previous research (Armor, Polich, & Stambul, 1978; Fagan & Fagan, 1982; Kern, Schmelter & Fannelli, 1978; Weins & Menustik, 1983) has indicated that these factors may affect treatment outcome (see Chapter II). Chi-square tests of equivalency were used to compare the frequencies of these variables across the various coercion groups to ensure that they would not confound the effects of coercion on treatment outcome. Once preliminary analyses were completed, each of the four time periods at which drinking behaviour was examined was analyzed as a separate database. Within each database, there were 5 categories of drinking behaviours examined: abstinent, drinking decreased, drinking unchanged, drinking increased, and drinking unknown. The drinking behaviour categories which indicate change (i.e., decreased, unchanged, and increased) indicate subjects' drinking behaviour relative to pre-treatment drinking behaviour. Due to small numbers in some of the drinking behaviour categories, the five categories were collapsed to 3 categories: (1) totally abstinent, (2)

not abstinent, and (3) drinking unknown. Frequencies in the "drinking unknown" category were not entered into the analyses, and were treated as missing data.

The chi-square test of equivalency was then utilized to compare drinking behaviours across each of the three comparison groups of coercion for each of the four databases. Secondary chi-square tests of equivalency compared drinking behaviours across each of the three comparison groups of coercion for each of the four databases, this time considering each of marital and employment status, so as to examine the possible confounding effects of these variables. Statistical significance was examined at an  $\alpha=.02$  level in order to provide some protection against inflation of experiment-wise error given that multiple comparisons were made at each time period.

#### Definition of Terms Used in the Study

Key terms used in this study require explicit definition.

"Coercion category" was used to indicate the area of life in which participants risked loss of something deemed to be of importance.

"Outcome category" was used to indicate drinking behaviour relative to pre-treatment drinking behaviour at each of treatment completion, and at 3, 6, and 12 months following completion of treatment. Drinking behaviour at each specific time period was considered, as opposed to change in drinking behaviour from completion of treatment to subsequent time periods.

"Success" of treatment was defined as total abstinence from alcohol during treatment and at each of the follow-up time periods considered.

"Day care treatment" was defined as outpatient day treatment, occurring from 9 a.m. to 5 p.m., 5 days per week.

#### Justification for the Study

Referrals to day care treatment programs are made from a wide variety of sources. Should it be found that certain types of coercion affect treatment outcome more than others, such findings could provide useful information to assist referral sources when making treatment referrals. In other words, findings from this study could provide useful information to referral sources concerning more effective ways to utilize

coercion and coercion information in making referrals. In addition, attempts at prevention of substance abuse are becoming more widespread. If evidence can be found to support referrals involving coercion of specific types, perhaps more substance abuse problems can be identified at earlier, less detrimental stages.

## Chapter II

## Review of Related Literature

Many factors have been examined in research on effectiveness of treatments for alcohol abuse. Factors examined have been both treatment factors and non-treatment factors. Treatment factors include length and type of treatment (i.e., inpatient, outpatient, self help, no treatment), as well treatment components (i.e., group therapy, stress management, etc.). Non-treatment factors include such client characteristics as age, gender, marital status, employment status, legal status, and living arrangements, as well as alcohol specific factors, such as duration of and severity of problems associated with alcohol abuse.

Treatment Related Factors and Treatment Outcome

Armor, Polich, and Stambul (1978), Emrick (1975), Emrick and Hansen (1983), and Kern, Schmelter, and Fanelli (1978) have examined the effects of treatment specific factors. Emrick (1975) found that, in general, individuals receiving treatment in an inpatient program were no more successful (i.e.,

achieved abstinence) than individuals receiving treatment in an outpatient program, those attending self help (i.e., AA) only, and individuals receiving no treatment at all. In each case, it is important to recognize that no specific client matching was performed in order to provide the most appropriate treatment setting. Therefore, it is difficult to judge the effectiveness of each type of treatment for different types of clients. Emrick (1975) also stated that type of treatment is not as important as is the amount of treatment in determining success.

#### Non-treatment Related Factors and Treatment Outcome

Non-treatment factors, such as age, gender, marital status, employment status, legal status, education, and living arrangements have been examined for use as predictive factors in alcohol abuse treatment outcome (Armor, Polich, & Stambul, 1978; Kern, Schmelter, & Fannelli, 1978; Weins & Menustik, 1983). Westermeyer (1989) indicated that such non-treatment factors often predict treatment outcome more effectively than treatment specific factors. He cited numerous studies on the effects of non-treatment

factors on treatment outcome for both alcohol and other drug abuse. He cited many studies which suggest that clients who identify more stability in their lives, specifically with regards to marital and employment status (i.e., married, employed), are more likely to show favourable short and long-term changes as a result of treatment, and to maintain these changes in follow-up. Emrick and Hansen (1983), Moos and Finney (1983), and Weins and Menustik (1983) indicate that not only are marital and employment stability important, but also that by examining these and other non-treatment factors, much more variance in treatment outcome is explained. However, no specific factors, in and of themselves, have been found reliably to affect treatment outcome in the same direction and on a consistent basis (Emrick & Hansen, 1983).

Alcohol related factors such as duration and severity of problems related to drinking also have been found to affect treatment outcome for alcohol abuse. Armor, Polich, and Stambul (1978) and Fagan and Fagan (1982) concluded that the longer the history of drinking problems, the less likely that clients would

have favourable short and long-term treatment outcomes. As well, Armor, Polich, and Stambul (1978) and Smart (1974) determined that the more severe the level of problems associated with drinking (i.e., the higher the MAST score) (see Appendix D), the less likely that clients will have favourable short and long-term treatment outcomes.

#### Effect of Coercion on Treatment Outcome

Another non-treatment factor that has been considered is the existence of and source of coercion for individuals to attend treatment for alcohol abuse. Specifically, coercive pressures from legal systems (Fagan & Fagan, 1982; Rosenberg & Liftik, 1976; Ward, 1979) and employers (Freedberg & Johnston, 1978; 1980; Heyman, 1976; Smart, 1974) have been examined.

Legal coercion. The effect of legal coercion has been most widely examined. The results of such studies as Dunham and Mauss (1982), Fagan and Fagan (1982), Gallant, Bishop, Faulkner, Simpson, Cooper, and Lathrop (1968a), Gallant, Faulkner, Stop, Bishop, and Landgon (1968b), Hoffmann, Ninonuevo, Mozey, and Luxenberg (1987), Rosenberg and Liftik (1976), and Ward (1979)

have presented conflicting evidence of the effectiveness of mandating alcohol abuse treatment as a condition of an individual's sentence through the courts.

Dunham and Mauss (1982) and Gallant et. al. (1968a, 1968b) reported that legal coercion to attend treatment is definitely more effective than voluntary attendance in treatment. In Dunham and Mauss' (1982) study, self referrals, agency referral, DWI (Driving While Intoxicated) arrestees, and other legal referrals were considered. Those referred by the legal systems, including DWI arrestees, succeeded at a much greater rate in treatment than did the others. No long-term data were considered in this study.

Gallant et. al. (1968a, 1968b) examined only legal referrals to treatment. They considered those who would not suffer negative consequences if they did not attend treatment as "voluntary" legal referrals. Again, they found that mandatory referrals were much more successful in treatment than were voluntary referrals. These differences were maintained to 6 months following treatment completion.

Contrary to the above findings, Hoffman et. al. (1987) found that, while mandatory attendance in treatment for DWI arrestees might be viable, no significant differences exist in their drinking behaviour up to 6 months following treatment completion.

Rosenberg and Liftik (1972) expanded on the findings of these other studies, stating that coercion, while it may be useful, is likely to be more effective when individuals have a clear risk of loss if they do not comply with treatment recommendations.

Ward (1979) and Fagan and Fagan (1982) cited many methodological problems in some of the above-mentioned studies which may have affected the research findings. Such problems include a lack of appropriate control groups, as in the cases of Gallant et. al. (1968a, 1968b), who considered only legal referrals, mandatory or not, and a lack of long-term data (i.e., 12 months or more). Dunham and Mauss (1982) observed only treatment completion data. Gallant et. al. (1968a, 1968b) and Hoffman et. al. (1987) considered only 6 months following treatment completion. Pickens, Hatsukami, Spicer, and Svikis (1985) found that

abstinence rates often decrease to 6 months following treatment completion, then many individuals return to total abstinence by 12 months following treatment completion. Therefore, follow-up data for less than 12 months are not necessarily indicative of long-term treatment outcome.

While such studies as those cited above examine the effect of direct coercion by the courts, there have been no studies examining the effect of indirect coercion. Such hidden coercion exists when clients, faced with legal charges in which alcohol played a part, present "voluntarily" for treatment on the recommendation of their lawyer. The motivation for such individuals may be to "look good in court" and perhaps decrease the severity of any sentence they might receive. Such indirect coercion may also play a role in the outcome and maintenance of treatment outcomes.

Employer coercion. Coercion to attend treatment by employers has been studied by Freedberg and Johnston (1978, 1980), Heyman (1976), and Smart (1974). There is supporting evidence in all these studies that the

use of "constructive confrontation" or "constructive coercion" of the employee with regards to a decline in work performance (i.e., productivity, absenteeism) is effective in bringing a client to treatment. Another form of coercive pressure from employers is the risk of job loss if individuals do not attend treatment. Once in treatment, there is no substantial evidence that the treatment outcome of clients faced with the possibility of losing jobs is any different than that of clients attending treatment for other reasons (Freedberg & Johnston, 1980).

Smart (1974) considered 75 voluntary and 125 employer mandated referrals to two inpatient treatment programs in Ontario. Referrals were considered "voluntary" if there was no clearly defined risk of job loss. He reported that voluntary clients and mandatory clients improved equally in terms of drinking behaviour, but that voluntary clients improved more in terms of behaviour in other life areas.

Heyman (1976) considered a random sample of 180 clients from four "industrial" alcoholism programs in the New York City area. These program catered

specifically to employed individuals referred either by their employers or by themselves. In their study, treatment outcome was not examined in terms of drinking behaviour. Instead, they examined work performance, which they found to improve to a much greater degree for highly coerced individuals than for those attending treatment for any other reasons.

Freedberg and Johnston (1978, 1980) found that while coercion to attend treatment may bring more individuals to treatment than would attend otherwise, such coerced individuals are not necessarily more successful.

Other sources of non-legal coercion. While they have not been widely examined, many other forms of coercion are also utilized to engage individuals in treatment for alcohol abuse. Such factors as deterioration of one's physical health or the threat of losing one's family also play an important role in motivating individuals to seek treatment. Those who face the loss of family (i.e., spouse or children) or fear further deterioration of their physical health may indeed seek treatment "voluntarily," but there may be

underlying coercion in the form of family or health concerns.

While no studies consider any one particular source of coercion that is not legal or employer based, Freedberg and Johnston (1978, 1980) and Lemere, O'Hollaren, and Maxwell (1958) examined multiple sources of coercive pressure that clients admitted to treatment for alcohol abuse were able to identify. Freedberg and Johnston (1978) examined perceived coercive pressures as they changed over time. In their study, coercion is defined as the existence of "an incentive to seek treatment." They do not identify coercion as involving clear risk of losing something deemed to be of importance. Nine sources of coercion were identified: employer, spouse, friends, relatives, children, health, finances, legal, and self-respect concerns. Clients rated their perceptions of the existence and degree of coercion from each of the nine sources at treatment admission, treatment completion, and at each of the follow-up periods of 3, 6, and 12 months following treatment completion.

They found that individuals perceived the greatest

decrease in coercive pressures from employers (25%), spouses (21%), children (19%), and health (11%), from treatment admission to 12 months following treatment completion. In addition to self-respect, participants in their study perceived these four sources of coercion to have the greatest coercive pressure at treatment admission. Legal coercion was rated the lowest in terms of perceived coercion, and did not change significantly from treatment admission to 12 months following treatment completion.

The results of Freedberg and Johnston (1978, 1980) indicate that coercion does not necessarily lead to better treatment outcome in terms of long-term drinking behaviour. However, they do state that employer coercion is viable, as many individuals would not have entered treatment without such coercion, despite the fact that pre-treatment drinking behaviour affected their work performance.

The extant research presents conflicting information about the effect of coercion from any source, on treatment outcome. In examining the element of coercion, however, such factors as ongoing and

changing perception of the source of coercion and multiple sources of coercion could be examined. As well, examining treatment outcome in terms of other life functioning areas could be considered in addition to drinking behaviour. The current study is designed to examine solely the effect of the most prevalent source of coercion to attend treatment, or the area of life in which clients feel at greatest risk of losing something deemed important, on treatment outcome, in terms of drinking behaviour, for alcohol abuse.

#### Statement of Aim

The major purpose of the current study was to examine how different sources of coercion affect treatment outcome after a 4 week, outpatient, day treatment program for alcohol abuse.

#### Hypothesis

Based on the research presented it was expected that individuals attending treatment due to concern over physical health problems due to drinking and due to family coercion would show more favourable long-term outcomes than individuals coerced by legal systems and employers, and those attending treatment due to no

apparent coercion.

## Chapter III

## Research Design and Methodology

Participants and Setting

The participants in this study were 174 clients admitted to a community-based, outpatient addictions treatment program in Southwestern Ontario, Canada, for treatment of alcohol abuse. The catchment area for this program includes both rural and urban sites. It includes Native-Canadians, French-Canadians, and other minority groups. The program draws from all socio-economic groups, including individuals with no permanent address (i.e., those who live on the street and need to find temporary accommodation while attending the program). Individuals functioning on a day to day basis in the general public, as well as those disabled physically or psychiatrically are included. Given that this sample includes all the afore-mentioned groups of individuals, it can be considered to be reasonably representative of the general population of Canada.

All participants were assessed between 1 January 1985 and 13 December 1989. All participants accepted

the treatment recommendation of a 4-week day care treatment program, as outlined below (also see Appendix B). All participants attended and completed the 4-week day care treatment program, and completed self-evaluations of drinking behaviour at treatment completion and at 3, 6, and 12 months following completion of treatment (see Appendix C). Clients recommended for treatment of other chemical dependencies or for cross addictions were not included in this study.

The day care program consisted of an intensive 4-week program run from 9 a.m. to 5 p.m., Monday through Friday. This treatment program involved group classes in communication skills, goal attainment, leisure goal attainment, relapse prevention, problem solving, budget, relaxation, stress management, fitness, nutrition, and transactional analysis. Lectures and audio-visual material were used to present treatment content. Daily group therapy and weekly individual counselling were integral elements of the program.

The participants were both men (77%) and women (23%). The ages ranged from 21 to 70 years of age,

with a mean age of 40 and a median age of 37. Ninety-three (53%) of the participants were married or living in a common-law relationship and 81 (47%) were not married or living in a common-law relationship. Ninety-nine (57%) were employed and 75 (43%) were not employed.

The Michigan Alcoholism Screening Test (Selzer, 1971) (see Appendix D) was administered to participants to assess levels of problems associated with alcohol use. According to the classifications associated with this instrument (see Appendix D), four subjects (2%) showed *some* evidence of problems related to alcohol abuse, eighty-three (48%) showed *clear* evidence of problems, seventy-two (41%) showed evidence of *substantial* problems, and fifteen (9%) showed evidence of *severe* problems. Forty-three (25%) of the subjects reported previous treatment for alcohol abuse.

Of the 174 participants, one was deceased at the 3 months follow-up and one more was deceased at the 12 months follow-up. These participants were included in data summaries up to the times of their deaths.

The foregoing data were extracted from existing

files, with client identification numbers serving as participant identifiers (see Appendix A). There was no personal contact with participants.

### Procedures and Measures

Dependent variable. The dependent variable in this study was drinking behaviour. While information about participants' drinking behaviour was obtained for some individuals in the way of progress notes by counsellors, participants' self-reports on follow-up evaluation questionnaires provided most of the information about the dependent variable. Each individual reported one of five categories of drinking behaviour: (1) totally abstinent, (2) drinking decreased, (3) drinking unchanged, (4) drinking increased, (5) drinking unknown. The categories of change in drinking behaviour (i.e., drinking decreased, unchanged, and increased) refer to drinking behaviour at each of the four time periods described below, relative to pre-treatment drinking behaviour.

The dependent variable was determined at each of four time periods: (1) treatment completion, (2) 3 months following treatment completion, (3) 6 months

following treatment completion, and (4) 12 months following treatment completion.

Independent variable. The independent variable was the existence of identifiable coercion as the motivation for clients' attendance at, and compliance with treatment regulations. Five categories of the independent variable were considered: (1) no apparent coercion, (2) family, (3) legal, (4) employer, and (5) health. Clients were assigned to one of the five coercion groups based on referral and assessment data.

The "family" group consisted of individuals whose files indicated that the threat of relationship breakup by spouse/significant other (i.e., indirect coercion) was a major factor in seeking treatment. Clients who were mandated to attend treatment by the Children's Aid Society as a condition of maintaining custody of their children were included. Also included were individuals who were referred by employers, medical services, or the by legal systems, but whose files clearly indicated that they asked for help due to risk of family breakdown, as opposed to risk of losing their source of income, physical health concerns, or the risk of legal

consequences.

The "employer" group consisted of individuals who were at risk of losing their source of income if they did not attend treatment and maintain treatment outcome. This group included those who risked the loss of social assistance (i.e., welfare) as well as those mandated to attend by their employers.

The "legal" group consisted of individuals mandated to attend as a condition of their sentence by the courts, as well as those whose motivation was to "look good in court" when faced with charges involving alcohol.

The "health" group consisted of individuals who feared the deterioration of their physical health. Cirrhosis of the liver, heart problems, and severe withdrawal symptoms (e.g., delirium tremens, hallucinations, and fits or convulsions) were common health problems. Included in this category were individuals who were referred by employers or by the legal systems, but whose files clearly indicated that they asked for help due to risk of further deteriorating health, and did not necessarily risk

losing their source of income or face legal consequences.

The "no apparent coercion" group consisted of those clients whose files showed no apparent coercion as described above. Included in this category were individuals who were referred by employers, medical services or by the legal systems, but whose files clearly indicated that they asked for help and that there was no other apparent coercion. For these clients, it cannot be assumed that no coercion existed, only that it is not apparent.

The data from the "family" and the "health" groups were combined to represent coercion due to personal concerns. The data from the "legal" and the "employer" groups were combined to represent coercion due to less personal concerns. This served to increase group sizes so as to add to the statistical power of the results. Thus, there were three levels of coercion for comparison: (1) no apparent coercion, (2) coercion due to family and health concerns, and (3) coercion by legal systems and employers. For ease of discussing these groups, they will be referred to herein as the

(1) voluntary, (2) personal, and (3) non-personal groups.

Subject identification information. Information was extracted from existing client files and coded according to Appendix A. Subject identification information thought to affect treatment outcome, as supported by the review of the literature in Chapter II, was computed for each of the three comparison groups representing the five levels of the independent variable. This information included marital status, employment status, and severity of problems related to drinking. Because of small numbers within some categories, marital status and employment status were each dichotomized (i.e., married/common-law vs. not married/common-law; employed vs. not employed).

Preliminary chi-square tests of equivalency. The Chi-square test of equivalency was completed for each of marital status, employment status, and severity of problem to ensure that the three comparison groups of coercion did not differ significantly on any of these variables. Variance amongst the three comparison groups on any of these variables would indicate a

possible confounding of the independent variable (i.e., type of coercion) with these other variables thought to affect treatment outcome. Such confounding would make results impossible to attribute to type of coercion alone, unless possible uneven effects of these other variables across coercion groups could be separated statistically from the effects of coercion per se.

Primary chi-square tests of equivalency. Drinking behaviour at each of the four time periods for each of the three comparison groups was then determined and entered into chi-square analyses to test for the independence of coercion and treatment outcome. Because of small numbers in some of the drinking behaviour categories, the 5 categories were collapsed to 3 categories: (1) totally abstinent, (2) not abstinent, (3) drinking unknown. As it cannot be assumed that unknown drinking behaviour represents either abstinence or non-abstinence, frequencies for the "drinking unknown" category were not entered into the analyses, but were treated as missing data.

Secondary chi-square tests of equivalency. Secondary chi-square tests of equivalency considered

marital status and employment status. These secondary analyses utilized the same comparison groups and the same drinking behaviour categories as described above for the primary analyses.

## Chapter IV

## Results of the Study

Prior to the main analyses, preliminary analyses were conducted to ensure that the different groups of coercion did not differ significantly on other variables known to affect treatment outcome. These preliminary analyses will be reported first, followed by a presentation of the findings relevant to the main hypothesis tested.

Preliminary Analysis

As discussed in the review of the literature (see Chapter II), marital stability, employment status, and severity of problems related to drinking have been shown to affect treatment outcome. In order to test validly the effect of coercion group membership on treatment outcome, it is important that the three comparison groups of coercion do not differ significantly on these other variables. In order to assess the equality of these variables across the three comparison groups of coercion, the Chi-square test of equivalency was conducted for each of these three variables.

Chi-square tests of equivalency. The chi-square statistics for the comparisons of the three comparison groups of coercion on severity of problem, marital status, and employment status are shown in Tables 1, 2, and 3. As expected, Table 1 revealed no significant differences amongst coercion groups on severity of problem,  $\chi^2=5.27$ ,  $df=5$ ,  $p<.50$ . However, Table 2 reveals significant differences amongst coercion groups on marital status,  $\chi^2=8.90$ ,  $df=2$ ,  $p<.02$ . A greater ratio of married to not married participants existed in the "personal" group, while the reverse was true for the "voluntary" group. There were about equal married as unmarried individuals in the "non-personal" group. Table 3 also reveals significant differences amongst coercion groups, this time on employment status,  $\chi^2=7.74$ ,  $df=2$ ,  $p<.05$ . It was expected that the coercion groups would differ on employment status by virtue of the source of coercion. Most of the "personal" group participants were employed. There was also a greater ratio of employed to not employed individuals in the "non-personal group", while the reverse was true for individuals in the "voluntary

Table 1  
Chi-square Summary  
Coercion by Severity of Problem

Source of Coercion	Severity of Problem				Total
	Some	Clear	Substantial	Severe	
Voluntary	2	20	20	2	43
Personal	0	29	34	6	69
Non-Personal	3	34	29	7	73
Total	4	83	72	15	174

$$\chi^2=5.27, df=5, p<.50$$

Table 2  
Chi-Square Summary  
Coercion by Marital Status

Source of Coercion	Marital Status		Total
	Married	Not Married	
Voluntary	18	25	43
Personal	40	18	58
Non-Personal	35	38	73
Total	93	81	174

$$\chi^2=8.90, df=2, p=.02$$

Table 3

Chi-Square SummaryCoercion by Employment Status

Source of Coercion	Employment Status		Total
	Employed	Not Employed	
Voluntary	19	24	43
Personal	34	14	48
Non-Personal	46	27	73
Total	99	75	174

$$\chi^2=7.74, df=2, p<.05$$

group." The preliminary analyses, therefore, indicate that the coercion groups employed in the study were not equivalent with respect to the marital and employment status of the members. These findings were significant at an  $\alpha < .05$  level, and must be kept in mind when interpreting any statistically reliable effects that might result from the hypothesis-testing analyses reported below.

#### Testing of the Research Hypothesis

Primary chi-square tests of equivalency. Chi-square tests of equivalency compared the treatment outcome for the "personal" group, representing the combined treatment outcome for the "health" and "family" groups, with the treatment outcome of the "non-personal" group, representing the combined treatment outcomes of the "legal" and "employer" groups, and the treatment outcome of the "voluntary" group, representing individuals attending treatment due to no apparent coercion. Missing data were excluded from calculations, and only abstinent and non-abstinent statuses were examined. At treatment completion,  $\chi^2 = .19$ ,  $df = 1$ ,  $p < .70$  (see Table 4). At 3 months

Table 4

Chi-Square SummaryCoercion by Treatment Outcome at Treatment Completion

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	42	1	43
Personal	55	3	58
Non-Personal	66	7	73
Total	163	11	174

$$\chi^2=0.19, df=1, p<.70$$

Table 5

Chi-Square SummaryCoercion by Treatment Outcome at 3 Months Followup

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	31	9	40
Personal	39	15	54
Non-Personal	41	26	67
Total	111	50	161

$$\chi^2=3.51, df=2, p<.20$$

Note. Missing data=12.

Table 6

Chi-Square SummaryCoercion by Treatment Outcome at 6 Months Followup

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	19	16	35
Personal	35	14	49
Non-Personal	31	35	66
Total	85	65	150

$$\chi^2=6.97, df=2, p<.05$$

Note. Missing data=23.

Table 7

Chi-Square SummaryCoercion by Treatment Outcome at 12 Months Followup

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	19	14	33
Personal	29	14	43
Non-Personal	29	28	57
Total	77	56	133

$$\chi^2=2.76, df=2, p<.30$$

Note. Missing data=39.

following treatment completion,  $\chi^2=3.51$ ,  $df=2$ ,  $p<.20$  (see Table 5). The missing data included 3 (7%) from the "voluntary" group, 3 (5.2%) from the "personal" group, and 6 (8.2%) from the "non-personal" group, totalling 12. At 6 months following treatment completion,  $\chi^2=6.97$ ,  $df=2$ ,  $p<.05$  (see Table 6). The missing data included 8 (18.6%) from the "voluntary" group, 8 (14%) from the "personal" group, and 7 (9.6%) from the "non-personal" group, totalling 23. At 12 months following treatment completion,  $\chi^2=2.76$ ,  $df=2$ ,  $p<.30$  (see Table 7). The missing data included 10 (23.3%) from the "voluntary" group, 13 (23.2%) from the "personal" group, and 16 (21.9%) from the "non-personal" group, totalling 39.

It should be noted that the percentages of missing data are distributed approximately equally at 3 and 12 months followup, but not at 6 months followup. At 6 months followup, there is a much lower rate of missing data for the "non-personal" group.

In interpreting these tables and those that follow, it should be recalled that a Bonferonni-type adjustment was made to the alpha level to be accepted

as an indicator of significant differences across groups so as to offer some protection against inflation of experiment-wise error. Consequently, in consideration of the number of comparisons made at each database, alpha levels of .02 or less are required to support an interpretation of reliable differences across groups. While the chi-square statistic obtained at 6 months following treatment completion approaches significance ( $\chi^2=6.97$ ,  $df=2$ ,  $p<.05$ ), none of the primary chi-square tests of equivalency was significant at the .02 level. That is, no significant differences were found in treatment outcome for any of the comparison groups.

Secondary chi-square tests of equivalency.

Secondary Chi-Square tests of equivalency were conducted to compare drinking behaviours across each of the three comparison groups of coercion for each of the four databases, this time considering marital and employment status of participants, as these factors were found to be significantly different across the three comparison groups of coercion. The results are reported in Tables 8 and 9 with the Chi-Square

summaries presented in Appendix E.

Significant differences were found between comparison groups for employed individuals at 3 and 6 months following treatment completion. At 3 months followup,  $\chi^2=8.08$ ,  $df=2$ ,  $p<.02$ . The "voluntary" group had the greatest ratio of abstinent vs. non abstinent (95%), while the "personal" group also maintained a high ratio of abstinence (84%). The "non-personal" group had a much lower abstinence rate (64%). Missing data included 3 (8.8%) from the "personal" group and 4 (8.7%) from the "non-personal" group.

At 6 months followup,  $\chi^2=13.06$ ,  $df=2$ ,  $p<.01$ . At this time period, the "personal" group reported a much higher rate of abstinence (79%) than did the "non-personal" group (37%) and slightly higher than the "voluntary" group (63%). Missing data included 5 (4.7%) from the "personal" group and 5 (10.9%) from the "non-personal" group.

The chi-square statistic approached significance for married individuals at 6 months followup ( $\chi^2=6.32$ ,  $df=2$ ,  $p<.05$ ). The "personal" group reported a much higher rate of abstinence (73%) than did the

Table 8

Secondary Chi-Square StatisticsCoercion by Treatment Outcome,  
Considering Marital Status

	Time Period			
	Treatment Completion	3 Months Followup	6 Months Followup	12 Months Followup
<b>Married</b>				
$\chi^2$	1.73	3.64	6.32	3.12
df	2	2	2	2
p	<.50	<.20	<.05	<.30
Missing data	0	7	8	20
<b>Not Married</b>				
$\chi^2$	1.05	0.70	1.54	4.80
df	2	2	2	2
p	<.70	<.70	<.50	<.10
Missing data	0	7	17	19

Table 9  
Secondary Chi-Square Statistics  
 Coercion by Treatment Outcome,  
 Considering for Employment Status

	Time Period			
	Treatment Completion	3 Months Followup	6 Months Followup	12 Months Followup
Employed				
$\chi^2$	1.05	8.08	13.06	5.06
df	2	2	2	2
p	<.70	<.02	<.01	<.10
Missing data	0	7	10	19
Not Employed				
$\chi^2$	1.75	0.20	1.72	0.27
df	2	2	2	2
p	<.50	<.90	<.50	<.90
Missing data	0	6	14	21

"voluntary" group and the "non-personal" group (47% and 45% respectively). Missing data included 1 (5.6%) from the "voluntary" group, 3 (7.5%) from the "personal" group, and 4 (19%) from the "non-personal" group.

There were no significant differences found amongst comparison groups at any other time period for any of the married, not married, employed, and not employed comparisons.

Chapter V  
Discussion

This study attempted to examine the relationship between initial and long-term outcome of alcohol abuse treatment and the existence of identifiable coercion to attend treatment. Data about initial treatment outcome and outcome status at 3, 6, and 12 months following treatment completion were tabulated from existing client files, as were corresponding sources of coercion.

Treatment outcome was based on abstinence as opposed to non-abstinence. Sources of coercion to attend treatment were broken down into five categories: "no apparent coercion," "family," "legal," "employer," and "health." These five categories were further combined to leave three comparison groups: (1) voluntary (i.e., no apparent coercion), (2) personal (i.e., health and family coercion), and (3) non-personal (i.e., legal and employer coercion).

These three comparison groups were compared with regards to factors deemed to affect treatment outcome. All three comparison groups of coercion were equivalent

with respect to severity of problems related to drinking. However, they were not equivalent with respect to marital status and employment status. These factors were not considered in the primary analyses, as both marital and employment status differences were somewhat inherent in the coercion groups as defined, by virtue of the categorical criteria employed. Specific inherent group differences were that employer coerced individuals were most likely employed; family coerced individuals were most likely married; legally coerced individuals included many who were incarcerated and were, therefore, most likely to be unemployed. However, by combining some of these coercion groups together in the analyses, some of the inherent differences have been eliminated. They were considered in secondary analyses to examine if, in fact, there was any confounding of the effects of coercion on treatment outcome by marital status and/or employment status.

It was predicted that individuals attending treatment due to personal concerns, that is, the "health" and "family" groups, would show more favourable long term outcome than would less personally

coerced individuals, such as the "legal" and "employer" groups, and than those who attended treatment due to no apparent coercion. This pattern of results would suggest that long-term treatment outcomes and coercion to attend treatment are not independent.

#### Review of the Findings

Statistical support was not demonstrated for the research hypothesis. A discussion of these results will focus on an interpretation of these findings in relation to alcohol abuse treatment and previous research. In addition, implications of the present findings, limitations of the study, and future research will be discussed.

Primary hypothesis testing. The research hypothesis was not supported by primary chi-square tests of equivalency. At treatment completion and at 3, 6, and 12 months following treatment completion, no significant differences were found amongst the three comparison groups of coercion.

This hypothesis was influenced by the research of Freedberg and Johnston (1978) who suggested that individuals who felt the strongest degree of coercion

from such concerns as physical health problems, lowered self respect, and coercion from children and spouses, were more greatly influenced by the coercion to improve drinking behaviour and to maintain improvements throughout the follow-up period, as opposed to those who felt the strongest degree of coercion from such concerns as legal problems.

While Freedberg and Johnston's (1978) research is referred to a great deal in this study, many differences between this study and theirs should be noted. First, the participants in Freedberg and Johnston (1978) cannot be considered a random sample of the treatment population, as they are mostly men (97%), all employed, and mostly at risk of losing their job (94%). Second, the study was conducted in a 3 week, inpatient setting, as opposed to a 4 week, outpatient setting. Freedberg and Johnston (1978) did not utilize any form of control group, while this study did utilize a "no apparent coercion" control. All individuals considered in their study were coerced by their employers to attend treatment, and while eight other sources of coercion were examined, no distinction was

made as to the most prevalent source of coercion.

Freedberg and Johnston (1978) then considered the effect that multiple sources of coercion might have on treatment outcome. In examining client's perception of nine sources of coercion at treatment admission, treatment completion, and at 3, 6, and 12 months following treatment completion, Freedberg and Johnston (1978) added a different dimension to their study which is not examined here. It is evident from their study that multiple sources of coercion, as well as client perceptions of existing coercion are important factors to consider. The current study focuses only on the effect of the most prevalent source of coercion to attend treatment on the outcome of alcohol abuse treatment.

While no significant differences were found, the chi-square statistic at 6 months following treatment completion approached significance ( $\chi^2=6.97$ ,  $df=2$ ,  $p<.05$ ). At this time period, the "personal" group reported a much higher, but not significant ratio of abstinence to non-abstinence than did either the "voluntary" or "non-personal" groups. This observation

does suggest some support for the hypothesis, as does the observation that the "personal" group reported a higher ratio of abstinence at 12 months followup.

Secondary hypothesis testing. Secondary chi-square analyses suggested some interesting trends. Significant chi-square statistics were calculated for employed individuals at 3 and at 6 months followup ( $\chi^2=8.08$ ,  $df=2$ ,  $p<.02$ , and  $\chi^2=13.06$ ,  $df=2$ ,  $p<.01$  respectively). The chi-square statistic for married individuals at 6 months followup approached significance ( $\chi^2=6.32$ ,  $df=2$ ,  $p<.05$ ).

There were no other significant chi-square statistics, or any which approached significance, for married individuals or for employed individuals. There were no significant chi-square statistics, or any which approached significance, for not married individuals, nor for not employed individuals.

These findings, while not conclusive, do suggest that marital status and employment status do account for some of the variance in the findings of the sample population. However, the exact nature of the variance accounted for by these factors is not being examined in

this study. Therefore, it shall be reported only that there are differences in treatment outcome when considering marital status and employment status, in comparing the three comparison groups of coercion.

These findings also suggest that at 6 months following treatment completion, some differences do exist in drinking behaviour of individuals who have attended treatment for alcohol abuse, and that, by 12 months following treatment completion, these differences no longer exist. The secondary hypothesis tests suggest that this trend is most prevalent for married individuals and for employed individuals, although not necessarily for individuals who are both married and employed. Specifically, the greatest differences in treatment outcome exist between the "personal" group and the "non-personal" group in the primary chi-square test at 6 months followup, in the secondary chi-square tests for married individuals at 6 months followup, and for employed individuals at 3 and at 6 months followup.

While large, but not significant differences also exist between the "personal" and "voluntary" groups in

each of these four chi-square tests, these differences are not consistently as great as those between the "personal" and "non-personal" groups.

The trends identified for the sample population in general, and for married individuals and for employed individuals specifically, partially support the findings of Pickens et. al. (1985), who reported that relapse rates were highest at 6 months following treatment completion, and that many individuals then returned to, and maintained abstinence. In the four chi-square comparisons reported above, large decreases in abstinence rates occurred by 6 months followup for the "voluntary" and the "non-personal" groups, and then increased again by 12 months followup, eliminating any significant differences between the "voluntary" and "non-personal" groups, and the "personal" group. The findings of this study suggest that the abstinence rates of participants in the "personal" group do not follow this trend, but instead decrease steadily to a small degree from treatment completion through 3, 6, and 12 months followup.

By the end of the followup period, 12 months

following treatment completion, no significant differences exist in treatment outcome amongst the three comparison groups of coercion for any of the comparisons (i.e., sample population, married individuals, employed individuals). This finding is consistent with previous research which states that while coercion by employers is effective in bringing clients to treatment (Freedberg & Johnston, 1978; 1980; Heyman, 1976; Smart, 1974), the treatment outcome for such coerced individuals is not necessarily more favourable (Freedberg & Johnston, 1978).

#### Implications

The findings of the present study have implications for treatment providers as well as for those who might utilize coercion to bring individuals to treatment for alcohol abuse.

Regardless of individuals' reasons for attending treatment, the findings of this study suggest that both short and long-term outcomes may be equal across clients with differing motivations for seeking treatment. As indicated in the review of the literature, treatment outcome is most favourable for

individuals for whom there is a lower level of severity of problems related to drinking (i.e., MAST score) (Armor, Polich, & Stambul, 1978; Fagan & Fagan, 1982) and a shorter history of drinking problems (Vogler, Weissbach, & Compton, 1977). Such lower level of severity and shorter history of drinking problems are most likely with early identification and intervention. While the existence and source of coercion may not affect outcome, the existence of coercion may definitely bring individuals to treatment at an earlier, less detrimental level of problem drinking when the prognosis is most favourable.

#### Limitations

An obvious limitation of this study is a possible lack of reliability and validity in the assignment of participants to coercion groups, as not all client files indicated a clear category of coercion as defined herein (i.e., evidence of risk of loss of something deemed to be of importance). While I attempted to control for possible inconsistency in assigning clients to coercion groups by reading carefully through files for indication of such risks, it is possible that some

participants may still have been assigned inappropriately to a category of coercion. Future research might more clearly identify the coercive pressures which prompted clients to seek treatment, as did Lemere, O'Hollaren, and Maxwell (1958) and Freedberg and Johnston (1978).

Another limitation is found in the use of "treatment outcome" in this study. Data were analyzed by combining the non-abstinent categories originally identified in data collection (see Appendix A). Data analysis was based solely on abstinence or non-abstinence. However, decreased, unchanged, and increased drinking, which were all considered "non-abstinent" outcomes, do not all indicate poor treatment outcome. In fact, decreased drinking would be a positive outcome, especially for individuals whose alcohol use did not create severe or substantial problems. In the future, a larger client population could be examined in hopes of having larger numbers for each category of drinking behaviour. As well, if research is examining specific improvements since admission to treatment, drinking behaviour might also

be categorized as simply improved or not improved. This simple, but different, categorization would be appropriate in the event that research addressed the issue of improvements to other life functioning areas. Then, improvements as a result of treatment would include more than abstinence or non-abstinence, per se. This study did not consider the categories of improved or not improved drinking behaviour as there would have been a large majority of expected cell frequencies of less than 10 for the "not improved" category in the primary chi square tests of equivalency. Such a majority of low expected cell frequencies would detract from the statistical power of the results. Also, it would result in even lower cell frequencies in the secondary analyses than already exist, as added factors are considered (i.e., marital and employment status).

Still another limitation of the present study is the exclusion of such information as was obtained on the second page of the evaluation form (see Appendix C), which examines functioning in other life areas, when examining treatment outcome. Some of the research examining treatment effectiveness includes an

examination of improvements in general life functioning (Emrick, 1975; Emrick and Hansen, 1983; Heyman, 1976; Moos & Finney, 1983). Moos and Finney (1983) clearly state that "inclusion of extratreatment factors in the model more than doubled the explained variance in treatment outcome," and that treatment outcome analysis "may be more effective when oriented towards patients' on-going life circumstances" (p. 1041). While significant differences in drinking behaviour were not found across the three comparison groups of coercion, it is possible that individuals in different groups might differ in improvements in other life functioning areas. Smart (1974) found that, while coerced clients and those attending due to no apparent coercion improved equally in terms of drinking, "voluntary" clients improved more in other life functioning areas. Future research should consider these other life functioning areas, as well as drinking behaviour, in assessing treatment outcomes.

In the present study, self-reports were the main source of data. While there was some information obtained through progress notes, the majority of the

drinking behaviour data relied on self reports. Therefore, the data on outcome of treatment are only as accurate as the self-reports. Also, because the data were gathered from existing files, and personal contact with participants did not occur, the accuracy of some data depended upon the interpretation of information by each staff member from the Lakeshore Health Clinic/ Addiction Unit who entered information into the file. It is likely that not all information was interpreted consistently across staff members. The possibility of such inconsistency creates another limitation for the study. Future research could be conducted in a more structured manner. A longitudinal study would allow more opportunity for clarification and corroboration of information. Staff members could be trained to assess treatment outcome consistently upon completion of treatment and at each of the three follow-up periods. They could interview clients and utilize alternate sources of information to obtain more accurate information about both drinking behaviour and other life functioning areas.

Another limitation of this study is the exclusion

of data from individuals who do not complete treatment. Accurate assumptions cannot be made about the effect of coercion on treatment outcome if we do not also examine the effect of coercion on abstinence in individuals who do not attend treatment. More meaningful data could be obtained by examining not only treatment outcomes of individuals who complete treatment, but also drinking behaviours of those who do not complete treatment. Rosenberg and Liftik (1976) clearly indicated that the attendance rates of overtly coerced clients tend to be higher than for "voluntary" clients. This trend may also affect treatment outcome analysis if "drop outs" are not included in the data analyses. Future research needs to take into account those clients who do not complete treatment in order to evaluate findings more appropriately.

As discussed earlier, this does not consider clients' perception of ongoing coercion or multiple sources of coercion. Examining these other factors could offer valuable information about sources of coercion which affect clients on an ongoing, long-term basis. Future research could expand upon the research

of Freedberg and Johnston (1978, 1980) by examining patterns of changes in clients' perceptions of coercion and how they might be related to treatment outcome, not only in terms of drinking behaviour, but also in terms of other life functioning areas.

Finally, the study examined only alcohol dependent individuals during a 4 week day care treatment program, thus limiting the generalizability of the findings to 4 week, day care treatment programs and alcohol abuse clients.

#### Summary

While the present study has some possibly interesting implications for the use of coercion in bringing alcohol abusers to treatment, it is quite clear that more extensive research is required in order to examine how to best utilize coercion and coercive pressures. It is also quite evident that in assessing outcome, it is important to assess more than just drinking behaviour per se.

In conclusion, coercive pressures from different sources have been shown to be effective in so far as they lead to early intervention for alcohol abuse. As

well, coercive pressures from different sources appear to be equally effective in the long-term. Once treatment outcome has been evaluated in terms of life functioning improvements as well as on improved drinking behaviour, it is hoped that greater implications will be found for treatment providers and referral sources.

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**APPENDICES**

APPENDIX A

Subject Information Record

SUBJECT INFORMATION RECORD

GROUP NUMBER \_\_\_\_\_ (1) Voluntary  
Attendance  
(2) Family Coercion  
(3) Legal Coercion  
(4) Employer Coercion  
(5) Physical Health Coercion

REFERRAL DATA

FILE NUMBER \_\_\_\_\_

1. GENDER \_\_\_\_\_ (1) Male  
(2) Female

2. AGE AT ASSESSMENT \_\_\_\_\_

3. MARITAL STATUS \_\_\_\_\_ (1) Married/  
Common-law  
(2) Not Married/  
Common-law

4. EMPLOYMENT STATUS \_\_\_\_\_ (1) Employed  
(2) Not Employed

5. LEVEL PROBLEMS  
ASSOCIATED WITH USE \_\_\_\_\_ (1) Low  
(2) Some  
(3) Clear  
(4) Substantial  
(5) Severe

6. PREVIOUS TREATMENT \_\_\_\_\_ (1) No  
(2) Yes

SUBJECT INFORMATION RECORD (CONT'D)

DEPENDENT VARIABLES

CLIENT DRINKING BEHAVIOUR AT:

- |    |                      |       |                        |
|----|----------------------|-------|------------------------|
| 1. | TREATMENT COMPLETION | _____ | (1) Abstinent          |
|    |                      |       | (2) Drinking decreased |
| 2. | 3 MONTHS             | _____ | (3) Drinking unchanged |
|    |                      |       | (4) Drinking increased |
| 3. | 6 MONTHS             | _____ | (5) Drinking unknown   |
| 4. | 12 MONTHS            | _____ |                        |

APPENDIX B

4 Week Day Care Treatment Program Schedule

SARINIA GENERAL HOSPITAL  
 ADDICTION UNIT  
 Day Care Program  
 Four Week Schedule

Week 1

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7:00					
9:30	A.A. Closed Meeting	Fitness	Individual Sessions	Fitness	Fitness
10:00					
10:30					
11:00	Group Therapy	Group Therapy	Transactional Analysis	Problem Solving Skills	Group Therapy
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00	Goal Attainment	Video: Uppers, Downers, All Arounders, Pt II	Film: Alcohol, Pills & Recovery	Group Therapy	Transactional Analysis
2:00	Video: Uppers, Downers, All Arounders, Pt I	Nutrition		Film: Make Sure It Isn't You	Video: Marijuana & Human Physiology
3:00	Relaxation Therapy	Communication Skills	Communication Skills	Relapse Prevention	Relaxation Therapy
4:00	Individual Sessions	Relaxation Therapy	Relaxation Therapy	Relaxation Therapy	Individual Sessions

SARITA GENERAL HOSPITAL  
 ADDICTION UNIT  
 Day Care Program  
 Four Week Schedule

Week 2

Effect of Coercion

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	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00					
9:30	A.A. Closed Meeting				
10:00			Individual Sessions	Fitness	Fitness
10:30			Transitional Analysis	Problem Solving Skills	
11:00	Group Therapy	Group Therapy	Film: What You Should Know About Aids	Group Therapy	Group Therapy
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00	Goal Attainment	Communication Skills		Communication Skills	Film: The Alcoholism Film
2:00	Video: Crack Attack	Nutrition	Group Therapy	Film: The Agony of Jimmy Quinlan	Leisure Goal Attainment
3:00	Relaxation Therapy	Video: Friday Night Five	Video: From Candy to Cocaine	Relapse Prevention	Relaxation Therapy
4:00	Individual Sessions	Relaxation Therapy	Relaxation Therapy	Relaxation Therapy	Individual Sessions

SARNIA GENERAL HOSPITAL  
 ADDICTION UNIT  
 Day Care Program  
 Four Week Schedule

Week 3

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00		Fitness	Individual Sessions	Fitness	Fitness
9:30	A.A. Closed Meeting		Transactional Analysis	Video: Unresolved Anger	
10:00		Group Therapy	Video: Secondary Physical Damage	Group Therapy	Group Therapy
10:30					
11:00	Group Therapy				
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00	Goal Attainment	Relapse Prevention	Group Therapy	Video: Sounds of Silence	Impulse Control
2:00	Film: Everything Looks So Normal	Nutrition		Nutrition	Film: Soft is the Heart of the Child
3:00	Relaxation Therapy	Leisure Goal Attainment	Communication Skills	Relapse Prevention	Relaxation Therapy
4:00	Individual Sessions	Relaxation Therapy	Relaxation Therapy	Relaxation Therapy	Individual Sessions

SARNIA GENERAL HOSPITAL  
 ADDICTION UNIT  
 Day Care Program  
 Four Week Schedule

Week 4

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00					
9:30					
10:00	A.A. Closed Meeting		Individual Sessions	Fitness	Fitness
10:30			Impulse Control	Budget Planning	
11:00	Group Therapy	Group Therapy	Film: Life, Death & Recovery of an Alcoholic	Group Therapy	Group Therapy
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00	Communication Skills	Video: Haight Ashbury Cocaine		Film: A Slight Drinking Problem	Film: The Spectal, Special
2:00	Film: The Secret Love of Sandra Blain	Nutrition	Group Therapy	Communication Skills	Leisure Goal Attainment
3:00	Relaxation Therapy	Film: The New Life of Sandra Blain	Goal Attainment	Relapse Prevention	Relaxation Therapy
4:00	Individual Sessions	Relaxation Therapy	Relaxation Therapy	Relaxation Therapy	Individual Sessions

APPENDIX C

After Care Progress Report

AFTER CARE PROGRESS REPORT

Date of evaluation:

Treatment completion/ 3 months/ 6 months/ 12 months

If report not completed (i.e. alcohol and drug use unknown):

- Unable to reach
- Unwilling to cooperate
- Clinic involvement terminated
- Deceased
- Response by alternate contact

1. Alcohol Use:

Which statement below best categorizes your drinking?

- Total abstinence
- Still drinking, but less than before treatment
- Drinking habits unchanged
- Drinking more than before treatment

2. Use of Other Mood-Altering Drugs:

Which statement below best categorizes your use of other mood-altering drugs?

- Total abstinence
- Still drinking, but less than before treatment
- Drinking habits unchanged
- Drinking more than before treatment

3. AFTER CARE INVOLVEMENT

- | <u>ADDICTION UNIT</u>                           | <u>AA/NA</u>                                    |
|-------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Once a week            | <input type="checkbox"/> Once a week            |
| <input type="checkbox"/> 2 or 3 times a month   | <input type="checkbox"/> 2 or 3 times a month   |
| <input type="checkbox"/> Once a month           | <input type="checkbox"/> Once a month           |
| <input type="checkbox"/> Less than once a month | <input type="checkbox"/> Less than once a month |
| <input type="checkbox"/> Do not attend          | <input type="checkbox"/> Do not attend          |

## AFTER CARE PROGRESS REPORT (CONT'D)

## 4. MATURATION AND GROWTH

The following is a list of possible growth areas. Think about how you dealt with each of these areas before your treatment, and how you have been dealing with each of them since you left treatment. Select the response that best describes your development in each of these areas.

	Imp- roved	Un- chan- ged	Worse	Does Not Apply
1. Relationship with spouse	_____	_____	_____	_____
2. Relationship with children	_____	_____	_____	_____
3. Relationship with parents	_____	_____	_____	_____
4. Relationship with other relatives	_____	_____	_____	_____
5. Relationship with friends	_____	_____	_____	_____
6. Your own job performance	_____	_____	_____	_____
7. Social or leisure activity	_____	_____	_____	_____
8. General physical health	_____	_____	_____	_____
9. Self-image	_____	_____	_____	_____
10. General enjoyment of life	_____	_____	_____	_____
11. Ability to handle problems	_____	_____	_____	_____
12. Ability to reduce tension or anxiety	_____	_____	_____	_____
13. Ability to manage finances	_____	_____	_____	_____
14. Level of assertiveness	_____	_____	_____	_____
15. Acceptance of need for abstinence	_____	_____	_____	_____

APPENDIX D

Michigan Alcoholism Screening Test (MAST)

MICHIGAN ALCOHOLISM SCREENING TEST (MAST)

	Yes	No
1. Do you feel you are a normal drinker?	_____	_____
2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before?	_____	_____
3. Does your spouse (or parents) ever worry of complain about your drinking?	_____	_____
4. Can you stop drinking without a struggle after one or two drinks?	_____	_____
5. Do you ever feel bad about your drinking?	_____	_____
6. Do friends or relatives think you are a normal drinker?	_____	_____
7. Are you always able to stop drinking when you want to?	_____	_____
8. Have you ever attended a meeting of Alcoholics Anonymous (AA) because of your drinking?	_____	_____
9. Have you gotten into fights when drinking?	_____	_____
10. Has drinking ever created problems with you and your spouse?	_____	_____
11. Has your spouse (or other family member) ever gone to anyone for help about your drinking?	_____	_____
12. Have you ever lost friends or girl/boyfriends because of drinking?	_____	_____
13. Have you ever gotten into trouble at work because of drinking?	_____	_____

## MICHIGAN ALCOHOLISM SCREENING TEST (CONT'D)

14. Have you ever lost a job because of drinking? \_\_\_\_\_
15. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking? \_\_\_\_\_
16. Do you ever drink before noon? \_\_\_\_\_
17. Have you ever been told you have liver trouble? \_\_\_\_\_
18. Have you ever had delirium tremens (DTs), severe shaking, heard voices, or seen things that weren't there after heavy drinking? \_\_\_\_\_
19. Have you ever gone to anyone for help about your drinking? \_\_\_\_\_
20. Have you ever been in a hospital because of drinking? \_\_\_\_\_
21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem? \_\_\_\_\_
22. Have you ever been seen at a psychiatric or mental health clinic, or gone to a doctor, social worker, or clergyman for help with an emotional problem in which drinking had played a part? \_\_\_\_\_
23. Have you ever been arrested, even for a few hours, because of drunken behaviour? \_\_\_\_\_
24. Have you ever been arrested for drunk driving or driving after drinking? \_\_\_\_\_

MICHIGAN ALCOHOLISM SCREENING TEST (CONT'D)

SCORING KEY

Score 1 point each if you answer **NO** to the following questions:

1,4,6,7

Score 1 point each if you answer **YES** to any of the remaining questions.

FACTOR I - Recognition of Problem  
- Total score (0 -7) for #1, 3, 4, 5, 6, 7, and 15

FACTOR II - Legal, Work, Social Problems  
- Total score (0 - 7) for #9, 12, 13, 14, 18, 23, and 24

FACTOR III - Help Seeking in Past  
- Total score (0 - 5) for #8, 19, 20, 21, and 22

FACTOR IV - Marital/Family Problems  
- Total score (0 - 3) for #3, 10, and 11

FACTOR V - Liver Pathology - Score #17

**TOTAL SCORE ON ALL FACTORS:**

- 0 - No evidence of problems related to drinking
- 1 - 2 - Low level of problems related to drinking
- 3 - 5 - Some evidence of problems related to drinking
- 6 - 13 - Clear evidence of problems related to drinking
- 14 - 20 - Substantial evidence of problems related to drinking
- 21 - 24 - Severe level of problems related to drinking

APPENDIX E

Chi-Square Summaries

Coercion by Treatment Outcome,  
Considering Marital and Employment Status

Table E-1

## Chi-Square Summary

Coercion by Treatment Outcome at Treatment Completion

Considering Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	18	0	18
Personal	38	2	40
Non-Personal	32	3	35
Total	88	5	93

$$\chi^2=1.73, df=2, p<.50$$

Table E-2

## Chi-Square Summary

Coercion by Treatment Outcome at 3 Months Followup

## Considering Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	15	3	18
Personal	29	19	38
Non-Personal	18	12	30
Total	62	24	86

$$\chi^2=3.64, df=2, p<.20$$

Note. Missing data =7

Table E-3

## Chi-Square Summary

Coercion by Treatment Outcome at 6 Months Followup  
 Considering Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	8	9	17
Personal	27	10	37
Non-Personal	14	17	31
Total	49	36	85

$$\chi^2=6.32, df=2, p<.05$$

Note. Missing data=8.

Table E-4

## Chi-Square Summary

Coercion by Treatment Outcome at 12 Months Followup  
 Considering Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	6	10	16
Personal	20	11	31
Non-Personal	14	12	26
Total	40	33	73

$$\chi^2=3.12, df=2, p<.30$$

Note. Missing data=20.

Table E-5

## Chi-Square Summary

Coercion by Treatment Outcome at Treatment Completion

Considering Not Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	24	1	25
Personal	17	12	18
Non-Personal	34	4	38
Total	75	6	81

$$\chi^2=1.05, df=2, p<.70$$

Table E-6

## Chi-Square Summary

Coercion by Treatment Outcome at 3 Months Followup  
 Considering Not Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	16	6	22
Personal	10	6	16
Non-Personal	23	14	37
Total	49	26	75

$$\chi^2=0.70, df=2, p<.70$$

Note. Missing data=6.

Table E-7

## Chi-Square Summary

Coercion by Treatment Outcome at 6 Months Followup  
 Considering Not Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	11	7	18
Personal	8	4	12
Non-Personal	17	18	35
Total	36	29	65

$$\chi^2=1.54, df=2, p<.50$$

Note. Missing data=16.

Table E-8

## Chi-Square Summary

Coercion by Treatment Outcome at 12 Months Followup  
 Considering Not Married Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	13	4	17
Personal	9	3	12
Non-Personal	15	16	31
Total	37	23	60

$$\chi^2=4.80, df=2, p<.10$$

Note. Missing data=21

Table E-9

## Chi-Square Summary

Coercion by Treatment Outcome at Treatment Completion

## Considering Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	19	0	19
Personal	33	14	34
Non-Personal	43	3	46
Total	95	4	99

$$\chi^2=1.05, df=2, p<.70$$

Table E-10

## Chi-Square Summary

Coercion by Treatment Outcome at 3 Months Followup

Considering Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	18	1	19
Personal	26	5	31
Non-Personal	27	15	42
Total	71	21	92

$$\chi^2=8.08, df=2, p<.02$$

Table E-11

## Chi-Square Summary

Coercion by Treatment Outcome at 6 Months Followup

Considering Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	12	7	19
Personal	23	64	29
Non-Personal	15	26	41
Total	50	39	89

$$\chi^2=13.06, df=2, p<.01$$

Note. Missing data=10

Table E-12

## Chi-Square Summary

Coercion by Treatment Outcome at 12 Months Followup

## Considering Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	11	7	18
Personal	20	7	27
Non-Personal	15	18	33
Total	46	32	78

$$\chi^2=5.06, df=2, p<.10$$

Note. Missing data=21.

Table E-13

## Chi-Square Summary

Coercion by Treatment Outcome at Treatment Completion

Considering Not Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	23	1	24
Personal	22	2	24
Non-Personal	23	4	27
Total	68	7	75

$$\chi^2=1.75, df=2, p<.50$$

Table E-14

## Chi-Square Summary

Coercion by Treatment Outcome at 3 Months Followup  
 Considering Not Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	13	8	21
Personal	13	10	23
Non-Personal	14	11	25
Total	40	29	69

$$\chi^2=0.20, df=2, p<.90$$

Note. Missing data=6.

Table E-15

## Chi-Square Summary

Coercion by Treatment Outcome at 6 Months Followup

Considering Not Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	7	9	16
Personal	12	8	20
Non-Personal	16	9	25
Total	35	26	61

$$\chi^2=1.72, df=2, p<.50$$

Note. Missing data=14.

Table E-16

## Chi-Square Summary

Coercion by Treatment Outcome at 12 Months Followup

Considering Not Employed Participants

Source Coercion	Treatment Outcome		Total
	Abstinent	Not Abstinent	
Voluntary	8	7	15
Personal	9	7	16
Non-Personal	14	9	23
Total	31	23	54

$$\chi^2=0.27, df=2, p<.90$$

Note. Missing data=21