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PROGRAMME ON  
**SUBSTANCE  
ABUSE**

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Project on  
identification and  
management of  
alcohol-related  
problems

Report on Phase II:  
A randomized  
clinical trial of brief  
interventions in primary  
health care



WORLD HEALTH ORGANIZATION

# TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	Acknowledgements . . . . .	v
1.	Summary and conclusions . . . . .	1
2.	Background to the study . . . . .	5
3.	Experimental design and project administration . . . . .	15
4.	Baseline comparisons: Demographic characteristics, alcohol consumption patterns and alcohol-related problems . . . . .	57
5.	Centre report: Sydney, Australia . . . . .	73
6.	Centre report: Pleven, Bulgaria . . . . .	91
7.	Centre report: San José, Costa Rica . . . . .	103
8.	Centre report: Nairobi, Kenya . . . . .	113
9.	Centre report: Mexico City, Mexico . . . . .	129
10.	Centre report: Bergen, Norway . . . . .	143
11.	Centre report: Moscow, USSR . . . . .	157
12.	Centre report: Cardiff, UK . . . . .	175
13.	Centre report: Farmington, USA . . . . .	191
14.	Centre report: Harare, Zimbabwe . . . . .	211
15.	How brief intervention works: Representative cases as viewed by the health advisers . . . . .	221
16.	Combined analyses of outcome data: The cross-national generalizability of brief interventions . . . . .	233
17.	Towards a public health approach to secondary prevention: Clinical and policy implications . . . . .	259

## MEXICO CITY, MEXICO

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### INTRODUCTION

The Republic of Mexico, situated at the southern part of the North American continent, was the site of advanced Indian civilizations before the Spanish conquest in the 16th century. In addition to agriculture and manufacturing, the Mexican economy has in recent years been driven by the exploitation of its vast oil reserves. Although Mexico's climate is hot and temperate, it is more moderate in the capital, Mexico City, which is 2,250 meters above sea level. During the period of the present study, Mexico was marked by economic austerity (due to fluctuations in oil prices) and a natural disaster (the 1985 earthquake in Mexico City).

### Drinking Patterns in Mexico

Alcohol use was an established part of the Aztec and Mayan cultures well before the arrival of the Spanish, but the native drinks of chicha and pulque had relatively low amounts of alcohol. In the 1600s and 1700s, however, the Spanish introduced wine and spirits, which altered the Indians' drinking pattern and lifestyle irrevocably. Today Mexico is a dynamic country of 88 million people, whose heritage is 60% Mestizo, 29% Indian and 9% Caucasian. The most popular alcoholic beverage is beer, although rum and pulque are also consumed by some segments of the population.

According to recent studies (1-3), there is a large number of abstainers, especially among women in rural environments. Among drinkers, one group consumes alcohol frequently and in high quantities, reporting symptoms related to dependence. These individuals often develop alcohol-related conditions, such as hepatic cirrhosis.

Another, much more numerous group of drinkers reports infrequent ingestion but in high quantities, which implies that each episode of consumption results practically in drunkenness. Many negative health and social events that occur under the effects of alcohol, such as accidents, crimes or suicide attempts, are observed in individuals who correspond to this drinking pattern.

### Epidemiology of Alcohol Problems

Data on hospitalizations from the Mexican Institute of Social Security shows that 3.4% of the total number of patients treated in 1983 had alcohol-related ailments, especially alcoholic cirrhosis (4). For that same year, the Institute of Social Services and Security for State Workers estimated that 2.4% of hospitalizations were related to alcohol-related ailments. In Health Ministry psychiatric hospitals, the percentage of alcohol-related cases is higher, representing 8.1% of all ailments in 1978. Notable among these are alcohol addiction, delirium tremens and alcoholic hallucinosis.

Among men who attended outpatient psychiatric consultations between 1978 and 1980, alcoholism represented 15.4% of the diagnoses between 35 to 44 years of age and 16.2% among those between 45 to 54 years of age (5). According to the same study, alcoholism accounted for 21% of hospitalizations for psychiatric problems in the 45 to 54 year age group, and 17.3% of the hospitalization among patients between 55 to 64 years of age.

In an internal medicine service for men in a general hospital in the provinces (6), 36% of the 500 recorded admissions were diagnosed as alcoholics, of which 80% were between the ages of 20 and 50 years. The main reasons for admission were digestive tube bleeding and liquid retention with significant ascites, both complications related to ethanol dependence. Clinical and laboratory data indicated hepatic insufficiency in 31.6% of these alcoholics. Alcoholism was frequent in the family background of these individuals.

According to archival data from three emergency hospitals in Mexico City (7), 10.7% of patients admitted between 1980 and 1984 were under the influence of alcohol. Among these, 4.7% had suffered intentional wounds in assaults and fights, 22% presented self-inflicted wounds resulting from suicide attempts, falls and other accidents, and 3.5% presented alcohol intoxication without wounds. The majority of these alcohol-related cases were men between the ages of 15 and 34.

In a study carried out by the Mexican Institute of Psychiatry in eight emergency services where the alcohol level is estimated through breath tests, positive concentrations were found in 25% of the cases (8).

Death rates due to hepatic cirrhosis are considered classic indicators of alcoholism. The rate of cirrhosis observed in Mexico is among the highest in the Americas. Based on mortality rates for hepatic cirrhosis, it is estimated that between 1956 and 1971, 5% to 7% of the population in Mexico over the age of 20 were alcoholics (9).

The number of cases of suicide in Mexico is low when compared with that of other countries, but there may be under-reporting of this phenomenon, mainly due to cultural reasons. "Alcohol intoxication" has been cited in approximately 5% of the cases of suicide (10). Nevertheless, the role played by alcohol seems to be more important than indicated by the records. In research carried out in the Forensic Medicine Service (11), levels of alcohol above 100 mg/% were found in blood samples in 17% of the autopsied suicides.

The role of alcohol consumption as a risk factor in accidents and violent acts has been extensively reported in the international literature. In Mexico, data on this is scarce, but in a study carried out in 1974 by the Forensic Medicine Service of Mexico City on cases of violent deaths, elevated alcohol concentrations were found in 57.6% of the 1600 blood samples analyzed. In these cases, 35% had died in traffic accidents, mainly by being run over by cars. Another study reports that of the traffic accidents that occurred in Mexico City in 1968, 8% involved someone in a state of inebriation, a proportion that rose to 15.85% in 1983 (12,13). According to the Attorney General's Office, in 1975 17.5% of the criminals sentenced in Mexico were found to be under the effects of alcohol. This proportion increased in subsequent years, reaching 24.7% in 1982.

Other social effects of alcohol consumption occur in the family and in the work place. It is estimated that 84% of family disagreements and 82% of separations are caused by alcohol (14). In cases studied in a child care institution as part of a prevention programme against child abuse, alcoholism occupied the second place as the cause of violence against children, being present in 19% of the cases (15).

Work accidents in Mexico are frequent, as well as absenteeism and job loss due to alcohol. According to the Mexican Social Security Institute (16), 18% of work accidents are related to alcohol intake, representing great material and human losses. It has also been reported that alcohol consumption

Mexican Social Security Institute (17). Another study (18) estimates that 12% of work absenteeism may be attributed to the effects of the "day after" drinking.

From the information presented here it can be inferred that excessive alcohol consumption has significant effects on society and constitutes important public health problem in Mexico. In addition, many of the health and social problems that occur under the influence of alcohol are manifested in drinkers with a pattern of occasional but excessive consumption.

### Management of Alcohol-related Problems

General policy governing management of alcohol-related health problems is guided by the General Health Law and also by the introduction of the National Health System. One of the intents of the new system is for each state to share the responsibility of arranging policies and administering funds.

The Health Ministry considers alcohol problems to be a priority. A National Antialcohol Council was installed in 1985 and is coordinated by the Health Ministry. It includes representatives of social, governmental, and private sectors. Its purpose is to develop legal, educational, and preventive activities. The National Antialcohol Council has elaborated a national programme that considers treatment measures as a priority issue. The changes that have occurred in the alcohol field in Mexico now permit coordination of different institutions, as well as the sharing of responsibilities at the federal, state, and district levels.

There are three basic systems of care for a population of about 88 million people. The first system assists individuals in the lower socioeconomic levels, offering virtually free services. The second system is a social security programme financed by employers and employees with regular jobs. The third system embraces private institutions and practitioners and covers the higher socioeconomic levels. It is also important to point out that, for various reasons, approximately 14 million Mexicans do not have access to health facilities.

The Mexican government provides most of the available medical assistance programmes. In general, they are crowded and insufficient to assist the whole population. As a result, there are few specialized treatment programmes for alcohol problems. Rather, such services are integrated with other treatment programmes, most often in the form of acute detoxification centres.

Despite the small number of programmes in this area, government health authorities and the professionals related to this field are conscious of the need for a better prevention and management policy because they recognize the magnitude of the problems created by high rates of alcohol consumption. Alcohol problems already represent a substantial burden for the country's health services. It is evident that, in the future, this burden will increase, mainly as a result of the pyramidal structure of the population, which is wider at the base. The group of greatest morbidity is between 35 to 50 years of age. In the near future the more numerous younger population will be in this age range. Consequently, there will be a larger number of drinkers who will require medical assistance.

It is generally accepted in Mexico that alcohol-related problems should be treated by medical personnel, even though drinkers are reluctant to recognize the problem and ask for help. Catholic priests are trusted by drinkers and are often sought out for help. The personnel who work in agencies that handle alcohol-related problems (policemen, doctors, nurses) consider themselves untrained in handling alcohol problems and lack the time to deal with them. None the less, they report that they would like to have more knowledge of this topic and would be willing to undertake special training.



## **Rationale for Study**

Given the growing concern in Mexico about the public health consequences of hazardous alcohol consumption, and the need for more effective measures in primary health care, the present project was initiated in order to evaluate brief intervention procedures directed at heavy drinkers who are not seriously dependent on alcohol. A major purpose of the study was to determine whether simple advice and brief counselling, delivered in the context of a single consultation in a medical setting, would result in a significant reduction in the patient's drinking over a six month period. To the extent that the quantity and frequency of drinking can be reduced in hazardous drinkers, it was expected that this would also reduce the likelihood of alcohol-related problems occurring during this time.

## **METHODS AND PROCEDURES**

This section describes the experimental design and procedures employed by the Mexico City collaborating centre. Additional information about the assessment procedures, eligibility criteria, intervention techniques and training of the health advisers is provided in greater detail in Chapter 3 of this report. Information about the definition of primary and secondary outcome variables is provided in Chapter 4.

### **Study Site, Screening and Recruitment**

The study was carried out by the Mexican Institute of Psychiatry. The study took place in Mexico City at Clinic #10 belonging to the Mexican Institute of Social Security and in the General Hospital Dr Manuel Gea Gonzalez.

Clinic #10 is located in the southern part of the city. It has 32 family medical offices, 4 dental offices, 5 emergency rooms, 6 preventive medicine offices, 2 social work offices, and one emergency ward with 7 beds. There are 277 technical personnel, including 71 physicians, 97 nurses, and 11 social workers.

Patients were recruited from the outpatient ward of the Clinic, either from the clinical record files or from the patients' waiting room. Recruitment was conducted in two steps. First, the Health and Lifestyle (Screening) Questionnaire was given. If the individual was eligible then the WHO Composite Interview was given.

Because we were not able to recruit the number of patients that had been planned for the project, it was necessary to find another place for recruitment. After a careful investigation a general hospital was chosen because the Mexican Institute of Psychiatry had finished an epidemiological study showing that the frequency of alcohol abuse was high in the patient population.

The hospital serves a large population that comes from all over the city and even from different parts of the country because it is prestigious and well known. But most of the patients come from the proximate areas. It is supported directly by the Ministry of Health. It deals mainly with patients of low socioeconomic class.

Screening took place in the outpatient clinic and in the hospital wards. The emergency room was not used because of the difficulties anticipated with the follow-up, since not all emergency patients are registered in the hospital.

At the hospital site social workers helped with the recruitment of patients. In order to improve the process, a training course was given to familiarize them with the research project, and to use the screening interview. The course was quite successful. It was attended also by the head of the department of social work. She was so enthusiastic that after the course she became a health adviser.

In this way, an average of 15 screenings were performed daily between April 1987 and January 1988. Once a probable candidate was detected, a health adviser conducted the Composite Interview to confirm his eligibility for the study. Hospitalized patients were interviewed in the general surgery and orthopaedic wards.

A total of 2,319 patients were screened, 1,748 at the clinic and 571 at the hospital. A total of 244 patients were considered eligible, 84% from the clinic and 16% from the hospital. Only seven women were eligible according to the local selection criteria. After applying the Coordinating Centre's universal selection criteria, 196 male patients were included in the final study sample, the others being excluded either because they drank too much or too little.

### Research Design

At the time they were recruited into the study, patients were told that they were participating in a general health survey being conducted by the World Health Organization. It was explained that the information would be used to plan better health services in different countries and that all information would be kept strictly confidential. Patients were then interviewed for 20 minutes using the WHO Composite Interview Schedule, which asked about various health risk factors (including nutritional habits, smoking, exercise, sleep, and drinking behaviour). Following the interview patients were randomly assigned to one of six conditions: 1) a control group that received no therapeutic intervention after the Composite Interview; 2) a control group that received 20 minutes of general health counselling after the Composite Interview; 3) a group that received five minutes of advice about hazardous drinking (Simple Advice condition); 4) a group that received Simple Advice plus 15 minutes of additional health counselling; 5) a group receiving five minutes of advice as well as 15 additional minutes of counselling about their drinking (Brief Counselling condition); and 6) a group that received the same intervention as the Brief Counselling condition in addition to three follow-up consultations (Extended Counselling condition). Thus, in addition to the four basic conditions, Mexico City included two additional groups to test the effect of general health counselling. Groups 2 and 4 were added to determine whether attention from the health adviser could exert an influence on the patient's drinking regardless of the specific content of the intervention. Thus, the two control groups (1 and 2) differed only in the amount of time the health adviser spent with the patient. Neither group received specific alcohol-related information. Similarly, groups 3 and 4 differed only in the additional health counselling given to Group 4. By comparing these four groups, it becomes possible to evaluate the additional effect of general health counselling on the patient's drinking behaviour.

At the completion of the Composite Interview, patients assigned to the two control groups (N=47) were thanked for their participation in the study and were asked to return for a follow-up interview in approximately six months. No information was provided about the specific purpose of the study, nor were they given any feedback about the potential hazards associated with their drinking.

Patients assigned to the Simple Advice conditions (N=57) were told at the end of the interview that, on the basis of the information provided, their drinking might place them at risk for a variety of alcohol-related problems. They were then given brochure ("A Guide to Sensible Drinking") that showed the proportions of alcoholics and heavy drinkers in the general population; illustrated the amounts of

alcohol contained in standard drinks of beer, wine and liquor; suggested what a sensible drinking limit was for men and women (no more than four standard drinks, five times per week for men; no more than three standard drinks four times a week for women); encouraged the patient to consider abstaining completely from alcohol under certain circumstances; and pointed out the health risks associated with heavy drinking.

Patients assigned to the Brief Counselling condition (N=22) were first given the Guide to Sensible Drinking and exposed to the same five minute intervention as the Simple Advice group. They were then given a 26-page "problem solving" manual ("How to Prevent Alcohol-Related Problems") that described a self-management procedure to reduce alcohol-consumption and avoid alcohol-related problems. The health adviser explained that the manual could be used to develop a "habit breaking plan" that would assist the patient to achieve the sensible drinking goals described in the sensible drinking leaflet. The health adviser introduced the manual by reviewing sections that required the patient to choose a drinking goal (i.e. stop drinking or drink sensibly), identify reasons for cutting down, describe high risk drinking situations, develop procedures for coping with these situations, and identify other activities that could substitute for drinking. At the end of the counselling session the patient was encouraged to record the habit breaking plan in the back of the manual and to identify a helper, such as a spouse or friend, who could assist the patient to adhere to the plan. An additional 19 patients were assigned to the Extended Counselling group that was asked to return for three counselling sessions in the six months following the initial intervention.

Patients assigned to each of the conditions concluded the session by completing a brief self-report inventory (the Health and Daily Living Questionnaire) that was designed to measure self-confidence, global depression, typical coping responses to problems, and the patient's perception of the health adviser.

At the end of the session all patients were asked to return in six months for a follow-up interview. At that time a revised version of the WHO Composite interview was administered in addition to several self-report questionnaires. During the interview the alcohol dipstick was employed to test for recent alcohol consumption and to emphasize to the patient the importance of providing accurate information about their drinking behaviour.

### **Follow-up Procedures**

Of the 196 patients meeting the study's eligibility and inclusion criteria, 145 (74%) were interviewed at follow-up. The average time to follow-up interviews was 7.4 months. Twenty-five interviews were conducted by telephone. Forty-six patients were lost, and four died.

### **Problems Encountered**

Two strategies were used for the screening of patients: a waiting room survey and routine screening. In spite of having sensitized the medical staff of the clinic about the referral of eligible patients, we did not get a positive response from them. In addition, some patients were reluctant to participate in the screening. We also tried to recruit inpatients in the medical and surgery wards of the General Hospital. However, this was not feasible because of the severity of their illness.

Although we screened 594 female patients, it was only possible to recruit seven women. The rest did not satisfy the inclusion criteria and two eligible women did not want to participate. The same



Possible explanations for the difficulties in the recruitment of Mexican women are: a) only a small proportion of them drink alcohol; b) drinking behaviour is not socially acceptable, c) the women who drink tend to deny it; and d) the screening procedures applied in this study may not be suitable for Mexican women.

Although we tried to recruit patients of all ages, most patients were in the younger age group. This situation may be explained by the population pyramid of Mexico, where more than the 50% of the population is under 25 years of age.

With other patients the problem was illiteracy. They were unable to read the screening questionnaire. Other important groups were not eligible because of their drinking problems. We found a large proportion of drinkers with dependence. Other patients were initially included but were subsequently excluded by the Coordinating Centre because they were found to be drinking extremely high or very low amounts (see Chapter 3).

After a year and a half of recruiting patients at Clinic 10, it was necessary to find another study site. Therefore, we initiated the research in the general hospital.

It was not feasible to conduct extended counselling sessions because most of the patients were reluctant to be re-interviewed several times. We made a lot of effort to overcome this situation but it was impossible to resolve it. So we abandoned the booster groups.

## RESULTS

Before conducting the analyses, patients assigned to the six study conditions were compared on demographic characteristics and drinking behaviour at intake. No differences were found between groups in age, socioeconomic status, average daily consumption, intensity of drinking, and days abstinent. However, there were significant differences on measures of recent problems and concern expressed by others. In both cases patients assigned to the Brief Counselling condition tended to score higher than the other groups. These differences should be taken into account when interpreting the findings.

The initial data analysis compared the two control groups (one with and one without general health counselling) with the two simple advice groups (one with and one without general health counselling) in a 2 x 2 factorial design. Repeated measures ANOVA on six outcome measures failed to show any differences between groups attributable to the additional general health counselling. In subsequent analyses the health counselling control group has been combined with the standard control group, and the health counselling Simple Advice group has been combined with the regular simple advice group.

Table 9.1 presents group means for the two primary and four secondary outcome measures assessed before and after the intervention. The table indicates that there were significant changes over time reported for all outcome measures. As illustrated in Figures 9.1 and 9.2, the reductions in average consumption and intensity of drinking were somewhat greater in the intervention groups but the interaction effect did not achieve statistical significance (Table 9.1). Because the control group changed almost as much as the intervention groups, we cannot attribute the changes in average consumption and intensity of drinking solely to the effect of the interventions. Nevertheless, there was a significant interaction effect for days drinking ( $F = 3.93$ ,  $p < .05$ ), which declined approximately two days in the control group and approximately four days a month in the intervention groups.

Changes were also observed over time in measures of alcohol-related problems, concern expressed by others, and dependence symptoms. Because there was no time by condition interaction effect, these changes cannot be attributed to the effects of the intervention.

## DISCUSSION

The results of the Mexico City centre's participation in the WHO collaborative study should be interpreted in light of the drinking patterns in Mexico, the results of the other centres, and the importance of integrating secondary prevention into the primary care setting.

First, the results indicate that there was a significant reduction in average alcohol consumption, intensity of drinking, days drinking, concern expressed by others, alcohol-related problems, and dependence symptoms in both the intervention groups and the control groups. Although there was some evidence that the number of drinking days changed more in the intervention groups than the controls, in general there was no clear indication that the intervention *per se* was responsible for the change in alcohol consumption or alcohol-related consequences. Several factors, discussed in greater detail in Chapter 16, may account for these findings.

It is conceivable that patients at follow-up gave reports of reduced drinking to please the investigators. This is possible but unlikely because of the use of the alcohol dipstick and other validity enhancement techniques that should have motivated patients to answer accurately. Another explanation is regression to the mean. Because these patients were selected on the basis of recent heavy drinking, it is possible that they were merely returning to their average consumption six months later. Yet another explanation is the possible influence of participation in a WHO study on these patients. The attention the control group received from the research team may have been as powerful as the simple advice and brief counselling in motivating patients to reduce their drinking. Another factor common to patients in all conditions was their use of medical services at the time of the intervention. Conceivably, their recent illness, which in many cases may have been alcohol-related, could have led to a reduction in drinking regardless of the intervention.

Despite the possibility that the results could have been caused by chance fluctuations in drinking or by factors not related to the intervention, the overall study findings, reported in Chapter 16, indicate that the study interventions produced a significant reduction in alcohol consumption and alcohol-related problems. This implies that the lack of differences between the control and intervention groups may have been the result of inadequate statistical power. If this is true, then the reduction in drinking observed in the Mexico City sample is impressive, given the hazardous levels being consumed and the problems associated with drinking.

As discussed at the beginning of this report, a large number of medical and social problems are typically present in heavy drinkers. Many drinkers, without being alcoholics, have important health and social problems related to their drinking. In Mexico these problems are often related to acute episodes of intoxication, such as accidents and acts of violence. It is essential to take these different types of drinkers and the different medical and social problems into account, both to obtain a proper diagnosis of the alcohol problem, and to make appropriate clinical decisions.

Heavy drinkers in Mexico appear to be responsive to environmental factors that can affect their drinking, including brief interventions at the primary care level. The results of this project suggest that the integration of brief intervention measures into routine practice at the primary care level should have a beneficial impact on health in Mexico.

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