

**LONG-TERM CANNABIS USERS
ON THE
NEW SOUTH WALES NORTH COAST**

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EXECUTIVE SUMMARY

Cannabis is the most widely used illicit drug in Australia but there is very little information on the characteristics of long-term regular cannabis users in Australia. We do not have information on: their patterns of cannabis use and the social contexts of cannabis use, the possible health consequences and perceived benefits of cannabis use, the lifestyle of long-term regular users, and the impact of cannabis on users, their families and the communities within which they live. The New South Wales North Coast was chosen as the site of the study of these issues because it is a region where there was a considerable concentration of long-term cannabis users.

The study had four major objectives. The first was to describe the characteristics of long-term cannabis users in a rural area. The second was to describe their patterns of cannabis and other drug use and the contexts of use. The third was to determine to the extent possible the prevalence and correlates of some of the harmful health, social and psychological effects that have been attributed to long-term cannabis use. The fourth objective was to investigate the attitudes and beliefs of cannabis users, their families and significant others, about the reasons for their use of cannabis, the health and psychological effects of the drug, whether there was a need for treatment, and the effects of law enforcement on their cannabis use.

Method

The study consisted of three main phases: preparation and exploratory field work; in-depth interviews with 268 long-term cannabis users; and interviews with 31 partners, family and friends, of long-term cannabis users.

Cannabis users were recruited through "snowball" sampling methods in three broad geographic areas: (1) Nimbin and Lismore, (2) Byron Bay and Mullumbimby, and (3) Coffs Harbour and Bellingen, during a one year period over 1994 and 1995. There were five interviewers who had extensive local knowledge and access to cannabis user networks. The main criteria for inclusion in the sample was weekly or more frequent cannabis use for ten years or more.

The interview covered demographic characteristics, patterns of cannabis and other drug use, contexts of use, dependence syndromes, health and well-being, health service use, social functioning and family circumstances, legal involvement, and social attitudes about drug use. It included questions on health status from the Australian National Health Survey, and items from the National Drug Strategy survey on public perceptions of cannabis legislation. Standardised questionnaires were used to assess cannabis dependence, psychological functioning, and alcohol consumption.

The interviews with 31 family members and friends of the long-term cannabis users interviewed in phase two explored the experience of being with an habitual cannabis user, the effect of cannabis on the relationship, perceived positive and negative aspects of cannabis use, the effects of periods of abstinence, and effects on family and children.

Results

User Characteristics

The sample comprised 268 persons (59% male and 41% female) with a mean age of 36 years. The sample was older and better educated than the Australian and North Coast populations, and differed from the Australian population in household composition.

Regular cannabis use began at age 17 years and had lasted for 19 years. Most (94%) used two or more times per week and 60% used daily. The typical quantity used was 2 joints per day of the flowering "heads" of female plants which have a high THC content.

Alcohol was used by 79% of the sample in the past month, and 41% of men and 30% of women consumed hazardous and harmful levels of alcohol. Most were either current (64%) or former tobacco smokers (22%). Nearly all (92%) reported the use of illicit drugs other than cannabis at some time in their lives but less than 10% had used these drugs in the past month.

Cannabis was mainly used in social settings with 67% usually sharing with a partner, or friends at home, or at a friend's place. Three-quarters were part of a family group in which one or more other members used cannabis. The majority (61%) performed their daily activities after using cannabis and 90% said that they at least occasionally drove a vehicle soon after using cannabis.

The most popular reasons for using cannabis were for relaxation and relief of stress (61%), and enjoyment or to feel good (27%). The most commonly reported negative effects were feelings of paranoia, anxiety, or depression (21%), tiredness, lack of motivation and low energy (21%), and effects of cannabis smoke on their respiratory system (18%).

Cannabis dependence

One in four of the sample believed that their cannabis use was a problem. But just over half (57%) met criteria for cannabis dependence according to the ICD-10, with the most common symptoms being a strong urge to use cannabis (75%), tolerance (54%) and persistent unsuccessful attempts to cut down or stop (53%). The same proportion (57%) met criteria for dependence according to DSM-III-R, among which the most common were frequent intoxication or use during daily activities (73%), tolerance to effects (54%), and continued use despite problems (54%). According to the SDS score only 15% were classified as dependent.

There was strong agreement between the ICD-10 and DSM-III-R criteria for dependence and a large correlation between the number of each set of criteria that were met. There was only modest agreement between these two measures and the SDS.

The quantity of cannabis typically used was related to dependence as assessed by the ICD-10 ($r = 0.20$) and DSM-III-R ($r = 0.25$) criteria but not the SDS. The earlier a person had first used cannabis the more dependence criteria they met. Current cigarette smoking status and alcohol use were uncorrelated with cannabis dependence. The number of types of illicit drugs that a person had used was correlated with the number of cannabis dependence symptoms on the ICD-10 and DSM-III-R but not with SDS score. All three measures of dependence were strongly related to

the respondent believing that they had a problem with their cannabis use.

Health status

Almost all (97%) respondents believed that cannabis smoking had adverse effects on the respiratory system and nearly a third (29%) believed that cannabis could cause memory and cognitive impairment, negative emotional states, and lethargy. But 66% did not believe that cannabis had adversely affected *their* mental or physical health. Of the third (34%) who did the main problems were respiratory (84%), psychological or behavioural effects (30%) and loss of control over use (23%).

There were few differences between the sample and the Australian population in health status as assessed by items from the National Health Survey. More cannabis users (82%) had a long term medical condition than the North Coast population (64%) and Australian population (68%). But cannabis users (26%) were less likely to have long term respiratory problems (such as, asthma and emphysema) than the North Coast (36%) and Australian (36%) samples. More cannabis users had a long-term condition (33%) that was the result of an accident than the North Coast (24%) and Australian populations (21%). Chronically wheezy or whistly chests were reported by 52% of the cannabis users compared to 24% and 21% of the North Coast and Australian samples.

Health Service Utilisation

There were no major differences between the sample and the North Coast and Australian populations in hospitalisation rates, emergency department visits, consultations with medical practitioners. There was a higher proportion of cannabis users who consulted an alternative practitioner in the past year (63%) compared to the North Coast (19%) and Australian population (15%). The most common type of practitioner were herbalists (27%) and acupuncturists (21%).

One in five respondents (21%) had received some specialist treatment for drug dependence and drug-related problems in their lives. This was most often for tobacco (8%), alcohol (6%), marijuana (6%), and heroin (5%). Over half (60%) had spoken to a doctor or health professional about their cannabis use and 68% reported that the practitioner seemed unconcerned about their cannabis use. Very few health professionals provided advice on the health risks of cannabis.

Psychological functioning

There was little evidence of major psychological disturbance in the sample of cannabis users as measured by the GHQ-12 and the SCL-90 and the Coopersmith Inventory. Within the sample, however, the more symptoms of cannabis dependence that a person reported, the more symptoms of psychological distress they reported.

The evidence for the "amotivational" syndrome was mixed. Most (80%) had observed that heavy cannabis use could impair motivation in other users, but only 20% indicated that cannabis made them feel lethargic, and only 13% regarded their cannabis use as a problem for this reason. Most respondents' ability to engage in daily activities did not seem to be impaired. Over half had taken up a new interest or activity in the past three months, 20% were studying and two-thirds were

members of a club or organised group.

Involvement with the legal system

Half had come under police notice at some time in their lives for cannabis use, and 25% had been charged with possession, 11% with cultivation and 6% with supply but only 22% of cannabis offences had occurred in the past three years. Half of those who had dealings with the police said they were treated well and half reported they were treated very badly. Half also thought they were treated fairly by the courts and the other half felt they had not in that the offence did not merit the severity of penalty or they felt cannabis should not be illegal.

Two-thirds of the sample grew cannabis for their own use, and nearly half grew all or most of the cannabis they used. One in five derived part of their income from selling cannabis they grew, although for half of these it yielded minimal income.

Almost all (98%) said that the law in NSW prohibiting the personal use of cannabis should be changed. The majority supported factual education about cannabis in schools (92%) and the availability of counselling (91%) for those who needed it but many were sceptical that the counselling and education programs would provide unbiased information. Over half (56%) disagreed with the view that there should be cannabis testing of drivers like random breath testing for alcohol (compared with 12% of the Australian public).

Interviews with Family and Friends

Thirty-one family members and friends of cannabis users were interviewed (27 females and 4 males of whom 28 were partners of cannabis users). Fourteen were negative in their overall assessment of cannabis use, 8 were positive and 6 were neutral.

Negative comments included concerns about their memory and concentration, lack of energy and motivation, and use of cannabis to avoid dealing with emotional issues. Respondents who were positive about their partner's use reported that it relaxed the user, calmed them down and made them feel good.

Some family members and friends believed that cannabis contributed to difficulties in their relationship while others found their friend or partner to be more pleasant or enjoyable to be with after using cannabis. Those who thought their friend's or partner's cannabis use was a problem tried to persuade them to limit their use or they negotiated places and times when they could use.

Some family and friends reported agitation, irritability, disturbed sleep, and general malaise when the cannabis user stopped. Others noted that they had more energy, vitality, enthusiasm and alertness and some reported that the user experienced painful and disturbing emotions after stopping use. Others noted no difference when the user stopped.

Twenty-two of the family and friends of cannabis users had children living with them. The main issues relating to children were using cannabis around children and how to explain their use, how parental use affected the way they related to their children and how they responded to their children's cannabis use.

Discussion

It is difficult to say whether the current sample was representative of cannabis users so caution needs to be exercised in generalising the study findings. It would be useful to conduct more studies among similarly recruited samples of long-term users in major cities.

There were a number of features of the study that ensure that the self-reported data are as good as that in similar studies. First, there were strong guarantees of confidentiality and anonymity, and the interviewers were perceived as credible and trustworthy by the participants. Secondly, the validity of our self-report data was supported by a substantial number of consistencies between our data and other studies on cannabis users and general population health surveys. Nonetheless, the fact that the data are cross-sectional means that it is not permissible to draw causal inferences from correlations observed between self-reported cannabis use and health problems.

The data confirm that there is a subculture on the north coast of NSW in which cannabis use is an integral part of everyday life and social relationships. Cultivation of cannabis for personal use was common and for a minority it was a source of income. The typical long-term user was a male or female, aged in their mid-thirties to early forties, who was living in a rural setting, and who was better educated, and more likely to be self-employed or working part-time than their age peers.

The sample had a 19 year history of regular cannabis use, and, consistent with other epidemiological data, they were more likely to have begun their use in their mid to late teens, and to smoke tobacco. A substantial minority used alcohol at hazardous or harmful levels, and most had tried a variety of other illicit drugs at some time in their lives.

Over half of the sample met ICD-10 and DSM-III-R criteria for cannabis dependence. Those who regarded their cannabis use as a problem met more of these criteria than those who did not but most of those who met dependence criteria did not believe they had a problem with cannabis. Further research is required to assess the validity of these diagnoses and to develop more sensitive assessments of cannabis dependence and related problems.

The rate of respiratory symptoms and accidental injury among participants was higher than in the Australian population but the specific contribution of cannabis use to these effects was uncertain because of concurrent tobacco and alcohol use. Longitudinal and case-control studies are necessary to investigate the contribution of cannabis use to accidents and respiratory problems.

The data were more equivocal on whether long term cannabis use caused a decrease in motivation. If motivational effects exist, they are probably relatively rare.

Half the participants had experienced legal problems mainly related to cannabis. Involvement with the legal system or the deterrence effect of the law did not have a great effect on most participants. Nearly all supported decriminalisation or legalisation of cannabis, and hence any encounter with the police or legal system was regarded as an unjustified intrusion into their lives. For those people who had been arrested, half reported that they were treated badly, while the remainder said the police were courteous. Involvement with the criminal justice system for those who had come to police attention had minimal effect on their cannabis use, and few other effects apart from engendering disrespect for the law and police officers.



INTRODUCTION

Why Study Long-term Cannabis Users?

Cannabis is the most widely used illicit drug in Australia. In the 1995 household survey one in three adults had used cannabis at some time and the majority of young adults had done so (National Drug Strategy, 1996). The most common pattern of cannabis use has been experimentation in late adolescence, with most people discontinuing their use or using intermittently (Donnelly & Hall, 1994). Approximately 10% of persons who ever use cannabis continue to use it regularly for some years but the majority of these discontinue their use in their mid to late twenties (Kandel *et al*, 1986).

Cannabis use is controversial because a substantial minority of the adult population has broken the criminal law that prohibits its use. Some proponents of repealing the prohibition against cannabis use argue that the health effects of cannabis are similar to those of alcohol which is legally available to all adults. They advocate repeal of prohibition, or the removal of criminal penalties against personal use of cannabis and the cultivation of the plant for personal use (e.g. Advisory Committee on Illicit Drugs, 1993; Criminal Justice Commission, 1994). Some have argued that the prohibition on cannabis also prevents the use of cannabis for therapeutic purposes as an appetite stimulant, analgesic and anti-emetic (e.g. Grinspoon and Bakalar, 1993).

One of the major controversies about cannabis use concerns the seriousness of its effects upon the health and psychological well-being of those who use it. The alleged adverse health effects of cannabis use have been one of the principal justifications for its continued prohibition so this issue has become the focus of the debate between proponents and opponents of cannabis prohibition. There is uncertainty about the extent and severity of the adverse health effects of long term cannabis use because they have not been as extensively studied as those of alcohol and tobacco. In the absence of good epidemiological evidence, the public have been presented with polarised views on the health and psychological consequences of cannabis use which is variously described as "harmless" (Lancet, 1995) or "safer than aspirin" (Ellard, 1992) by those who advocate reform of existing laws, and as a dangerous drug by those who favour the retention of cannabis prohibition (e.g. Nahas & Latour, 1992).

A recent review for the Australian National Task Force on Cannabis summarised the most probable of the adverse health effects of cannabis (Hall, Solowij & Lemon, 1994). The most serious of the adverse acute effects of cannabis was a probable increase in the risk of accidents if a person drove a motor vehicle or operated equipment or machinery after using cannabis, especially when used in combination with alcohol (Hall *et al*, 1994). Additional acute effects included: symptoms of anxiety, dysphoria, panic and paranoia which are common among naive users; cognitive impairment, especially of attention and memory; an increased risk of experiencing psychotic symptoms, especially among those who are vulnerable because of personal or family history; and an increased risk of low birth weight babies if cannabis was used during pregnancy (Hall *et al*, 1994).

The most probable adverse health and psychological effects of long-term cannabis use were: the development of a cannabis dependence syndrome, characterised by an inability to abstain from or to control cannabis use; an increased risk of respiratory diseases associated with smoking as the

method of administration, such as chronic bronchitis, and the occurrence of histopathological changes that are believed to be precursors to malignancy; subtle forms of cognitive impairment, most particularly of attention and memory, which persist while the user remains chronically intoxicated, and may or may not be reversible after prolonged abstinence (Hall *et al.*, 1994).

There were in addition a number of major possible adverse effects of chronic, heavy cannabis use that remain to be confirmed by controlled research. These include: an increased risk of developing cancers of the aerodigestive tract, i.e. oral cavity, pharynx, and oesophagus; birth defects occurring among women who used cannabis during their pregnancies; an increased risk of leukemia among offspring exposed *in utero*; a decline in occupational performance marked by under-achievement in adults in occupations requiring high level cognitive skills, and impaired educational attainment in adolescents; and a risk of precipitating or exacerbating schizophrenia in vulnerable individuals (Hall *et al.*, 1994).

There have been very few studies of the health and psychological status of long-term cannabis users in naturalistic settings, particularly in Western societies. This is surprising considering that cannabis use increased rapidly from the late 1960s to become the most widely used illicit recreational drug in the United States, and more recently, in Australia. Field studies of small samples of chronic heavy cannabis users were conducted in Jamaica (Rubin & Comitas, 1975), Greece (Stefanis, Dornbush & Fink, 1977) and Costa Rica (Carter, Cogging & Doughty, 1980; Page, Fletcher & True, 1988) in the 1970s. Since then only a small number of small sample studies have been conducted in the United States (Haas & Hendin, 1987; Hendin *et al.*, 1987; Rainone *et al.*, 1987).

There is very little information on long-term cannabis users in Australia. We know very little about the characteristics of these users, and there is no information that would permit an assessment of the impact of cannabis use on their lives, their families or the communities in which they live. The present study aimed to describe a sample of Australians who had used cannabis regularly for ten or more years, and to provide data on their patterns of cannabis and other drug use, the circumstances in which they use the drug, and to the limited extent possible, the health and psychological consequences of their long-term cannabis use.

Negrete (1988) has observed that scientific research on cannabis is usually prompted by social concerns about increasing prevalence of cannabis use among young adults. This was true in the present case. Concern about increasing cannabis use among young Australians led to the establishment of a National Cannabis Task Force in 1992 to review what was known about cannabis use in Australia and to make some suggestions about developing a national policy approach to cannabis. The Task Force commissioned: a review of *Patterns of cannabis use in Australia* (Donnelly & Hall, 1994); a review of *The health and psychological consequences of cannabis use* (Hall, Solowij & Lemon, 1994); a survey of *Public perceptions of cannabis legislation* (Bowman & Sanson-Fisher, 1994); and a review of *Legislative options for cannabis in Australia* (McDonald *et al.*, 1994). The Task Force reported in 1994 (Ali & Christie, 1994). Subsequently, a survey was undertaken of *Public perceptions of health and psychological consequences of cannabis use* (Hall & Nelson, 1995), and a review was undertaken of the *Social impacts of the legislative options for cannabis in Australia* (McDonald & Atkinson, 1995)

One of the recommendations of the Cannabis Task Force was that there should be research on

patterns of cannabis use and its possible health consequences. The Task Force specifically recommended funding special purpose surveys of regular cannabis users to "seek information on sources of cannabis supply, amounts purchased by users and prices, extent of "home grown" cannabis production, typical preparations and amounts used, perceived availability of cannabis and the contexts in which it is used" (Ali & Christie, 1994, p xiii). The present study was designed in part to provide some of this information.

Why Study Cannabis Users on the North Coast of NSW?

The NSW North Coast was chosen as the site for study because it is widely reputed to be a region where there is a concentration of long-term cannabis users. The North Coast's reputation as a centre for cannabis cultivation and use is supported by historical evidence, media reports, and statistics on cannabis seizures and charges for cannabis offences in the region.

The North Coast region covers 32,000 square kilometres along the coastal strip east of the Great Dividing Range, extending from the Queensland border to south of Port Macquarie. It consists of 17 local government areas. The major industries in the region are agriculture, tourism, light industry, building and construction. There is a substantial transient population and some areas have a high proportion of persons who pursue "alternative lifestyles" (North Coast Region, 1990).

The North Coast is one of the fastest growing areas in Australia. The estimated resident population in 1991 was 390,102 and its projected population for 1995 was 429,274. The three main local government areas from which the majority of subjects were recruited (Lismore/Nimbin, Byron/Mullumbimby, and Bellingen) had an estimated population in 1991 of 76,633 with a projected population for 1995 of 85,799 (Department of Urban Affairs and Planning, 1995).

The population of the North Coast has higher proportions of older people and children than the rest of NSW. Approximately two percent of the population are Aboriginal and Torres Strait Islander. There is a high level of socioeconomic disadvantage reflected in the large number of single parent families, higher rates of social service benefits, lower average incomes, and an unemployment rate almost double that of NSW (North Coast Region, 1990).

The communities of Nimbin, Mullumbimby, Byron Bay and Bellingen on the North Coast of New South Wales have been centres of cannabis use since the early 1970s. The Aquarius Festival that was held in Nimbin in 1973 symbolised the beginning of the "counter-culture" in Australia; it was also the harbinger of the subsequent development of the North Coast of New South Wales as a centre for an alternative lifestyle movement. The area is a place of great natural beauty, and the climate has proved to be very suitable for the cultivation of *cannabis sativa*. Cannabis cultivation and use have been an important part of the Nimbin community (Helliwell, Reilly & Rippingale, 1992; Major, 1994a) and the Mullumbimby and Byron Bay districts have long been known as a cannabis cultivation area; the reputed potency of the local cannabis having earned the description "Mullumbimby madness" as early as 1981 (Brouwer, 1981).

Recently, two cannabis lobby groups have been established in Nimbin. One group called Help End Marijuana Prohibition (HEMP) organises a festival each year called the "Mardi Grass". The other, the Beyond Prohibition Research Council, organised an inaugural Beyond Prohibition Research Council Conference in 1994 which was attended by well-known Australian and overseas

experts (Major, 1994b). These groups attempt to reduce what they believe to be the greatest risks associated with cannabis use, namely, the laws prohibiting its use, and what they regard as their overzealous enforcement by police.

The NSW North Coast has received considerable media attention related to cannabis cultivation and use in recent years. In 1991, for example, the main regional newspaper ran a series of articles on "Marijuana: the great debate (Metcalf, 1991) and in 1990 a local weekly newspaper devoted an entire edition to "The great marijuana issue" (*Brunswick Byron Echo*, 31 October, 1990). There have also been numerous articles on cannabis on the North Coast in the national media (e.g. Lloyd, 1993; McRoach, 1994; Robson, 1993). The announcement that the present study had been funded was the subject of a story in the *Sunday Telegraph Mirror* (20 March, 1994). The rock magazine *Rolling Stone* described cannabis cultivation in the area (Nicholls, 1994), and cannabis growing in the Nimbin area has been extensively covered by *The Bulletin* (Kennedy, 1988), *The Weekend Australian* (8-9 May, 1993), and *Sixty Minutes*. In 1996 there was a SBS television documentary "Nearly Normal Nimbin" which gave considerable attention to cannabis use.

The size and frequency of cannabis seizures in the North Coast has been consistently high. The NSW Police Service's Plantation Squad and Cannabis Eradication Unit conduct annual operations to detect cannabis cultivation on the North Coast. Four operations in early 1993, for example, resulted in the seizure of 12,000 plants valued at \$24.5 million (*The Northern Star*, 13 February, 1993). Two years later, the Northern Star reported that "Nimbin residents are growing tired of annual raids by the NSW Police Plantation Squad because of the illegal state of cannabis" (*The Northern Star*, 20 January, 1996). The editorial of another local newspaper commented, "Part of the impetus for founding *The Echo* came out of community outrage over breaches of civil liberties during police drug raids in the early eighties" (*The Byron Echo*, 6 March, 1996).

Rates of offences for cannabis use and cultivation are considerably higher on the North Coast than in the rest of NSW. In 1995, the rates per 100,000 of population for offences such as possession and/or use of cannabis in the Richmond/Tweed (427) and Mid North Coast (318) divisions are more than twice the rate for NSW as a whole (147). The 1995 rates for the offence of cultivating cannabis in the Richmond/Tweed (162 per 100,000) and the Mid North Coast (137 per 100,000) are at least three times that of the NSW rate (45 per 100,000) (NSW Bureau of Crime Statistics and Research, 1996).

Study Objectives

The present study had four major objectives. The first was to describe the characteristics of long-term cannabis users who live in a rural area with a high prevalence of cannabis use. The second was to describe their patterns of cannabis use and the contexts within which cannabis was used. The third was to assess the extent to which cannabis use presented a problem for some long-term users. This objective was met by assessing the prevalence of cannabis dependence, and to the limited extent possible, some of the harmful health, social and psychological effects that have been attributed to long-term cannabis use. It also included an examination of the users' experiences of law enforcement activities directed at cannabis use and cultivation. The fourth objective was to investigate the attitudes and beliefs of cannabis users, their families and significant others, about the reasons for their use of cannabis, the health and psychological effects of the drug, whether there was a need for treatment for some cannabis users, and the effects of law enforcement on

cannabis use.

User characteristics

There is very little information on the characteristics of Australians who have used cannabis regularly for most of their adult lives. We know little about their social background, their living arrangements, family circumstances, or their patterns of employment and their economic circumstances.

Surveys of the general population have provided limited information on this population. Such surveys have found that daily cannabis users are more likely to be males of lower socioeconomic status who regularly use alcohol and have tried other illicit drugs (Hall *et al.*, 1994). Generally, however, household surveys capture too few long-term cannabis users to provide very detailed data on them.

A limited number of primarily American studies have described the characteristics of opportunistic samples of regular cannabis users. These have generally found long-term cannabis users to be from more middle class backgrounds, but this may reflect methods of recruitment. For example, Rainone *et al.* (1987) recruited their heavy marijuana subjects through advertisements in the *Village Voice* newspaper that caters to a college-educated readership in the New York area. Miller and Gold (1989) found that social class, ethnicity, occupation, and financial status did not provide barriers to marijuana dependence, since heavy users may come from all walks of life.

The present study aimed to provide a profile of the characteristics of long-term cannabis users and their social milieu in one region of Australia. It also aimed to collect demographic and social data that permitted the characteristics of the sample to be compared with those of residents of North Coast NSW and the Australian population more generally by using census and other population-based data.

Patterns of cannabis use

The two main approaches to the study of patterns of cannabis use in Australia have been general population surveys and surveys of high school students. Household surveys provide reasonable indications of trends in cannabis use reflected in the proportion of adults who have ever used cannabis, used it in the last year, or used in the past month. Such surveys, however, typically capture too few long-term cannabis users to provide useful information on their patterns of use. School surveys monitor trends in recruitment to cannabis use among adolescents but this population is too young to contain many long-term cannabis users.

The pattern of cannabis use that is of most interest from a public health perspective is the daily or near daily use of cannabis over decades which maximises the potential harm to health and psychological well-being from cannabis use. The population of such cannabis users can most easily be studied by recruiting a substantial group of long-term cannabis users from a variety of sources. This method was chosen to study long-term cannabis users on the New South Wales North Coast, with "long-term use" defined as ten or more years of using at least three times a week.

Type, potency and availability of cannabis

There is an absence of information on the potency of cannabis preparations that are used by long-term regular cannabis users. We do not know what forms of cannabis and what potency of cannabis are being used, what the typical methods of administration are (e.g. swallowing or smoking joints, bongos, or pipes), and how frequently the heaviest cannabis users are using the drug (Donnelly & Hall, 1994). The sample of long-term users on the North Coast will provide data on the types and potency of cannabis that are typically used, the most common routes of administration, and the relationship between cannabis potency and patterns of use.

For legal reasons it was not possible to obtain analyses of the THC content of cannabis used by the sample (see Appendix A). Consequently information on the THC content of cannabis products had to be limited to self-reports of the type of cannabis preparation that was typically used (e.g. "heads", leaf, hashish).

Natural history of cannabis use

The majority of longitudinal studies of the "natural history" of cannabis use have been conducted in the United States in cohorts that initiated their use in the 1970s and 1980s. It is uncertain whether these results are applicable to Australia. Australian cohort studies of adolescents (Levy & Pierce, 1990; Oldenburg & Lemon, 1992) have provided some information on the initiation of cannabis use but they have provided limited data on factors that predict continued use because rates of continuation into adult life were low. We consequently know nothing about the patterns and consequences of cannabis use in that small minority of Australian cannabis users who continue to use regularly into their thirties and forties (Donnelly & Hall, 1994).

The present study provides limited data on this issue. The criteria for recruiting subjects ensured that there was a representation of middle-aged adults who have used cannabis for a decade or more. The data may provide some indications of the factors that predicted the continued use of cannabis into the third and fourth decades of life. These will be limited because the sample is small, data on patterns of initiation of use will be retrospective, and the sample will be biased because, unlike studies of patterns of cannabis and other drug use in an age cohort, the sample only consists of person who continued their cannabis use into adult life.

Other drug use history

Longitudinal studies of drug use have consistently shown strong associations between the regular use of cannabis and the likelihood of using other drugs, both licit and illicit. People who regularly use cannabis are more likely to have been regular users of alcohol and tobacco before initiating cannabis use, and they are much more likely than their peers to have tried other illicit drugs (Kandel & Logan, 1984). It was accordingly decided to investigate the use of other drugs, including alcohol and tobacco, and various illicit drugs.

Cannabis dependence

One of the most common adverse consequences of cannabis use that this study assessed was the prevalence of symptoms of the cannabis dependence syndrome (Anthony & Helzer, 1991), as

defined in DSM-III-R and ICD-10. Although cannabis does not have a reputation as a drug of dependence, there is now reasonable evidence that regular users can become dependent on it (Hall *et al.*, 1994). The cannabis withdrawal syndrome is not as marked as that for alcohol and opiates but cannabis users can meet criteria for the more behaviourally defined concept of dependence incorporated in ICD-10 and DSM-III-R. This definition of dependence places more emphasis on users' loss of control over their use, their finding it difficult to stop using it when they wish, and their continuing to use it in the face of health and personal problems they know or believe are caused or exacerbated by their cannabis use (Hall *et al.*, 1994).

The best estimate from epidemiological studies is that around one in ten persons who ever use cannabis will become dependent on it (Hall *et al.*, 1994). Cannabis dependence is most likely to develop in persons who have a history of daily cannabis use, about half of whom may be expected to become dependent on the drug (Hall *et al.*, 1994).

The present study aimed to investigate the prevalence of dependence symptoms among long-term cannabis users, who were not requesting treatment, using three different methods of measuring these symptoms. These included the use of questions to assess the criteria for cannabis dependence as defined in DSM-III-R (American Psychiatric Association, 1987), a set of questions that Adlaf and colleagues have used to assess symptoms of dependence as defined in ICD-10 in community samples in Ontario (Adlaf, Ivis & Smart, 1994), and the Severity of Dependence Scale which was originally developed to assess opioid dependence but has been adapted for use with cannabis users (Gossop *et al.*, 1992, 1995).

Health and psychological status

The present study examined some of the most probable health consequences of cannabis use, within the constraints of its relatively small sample size. Although the sample size is large by the standards of the previous literature (e.g. Rainone *et al.*, 1987; Rubin & Comitas, 1975; Stefanis *et al.*, 1977), it is still only large enough to estimate the prevalence of the most common health consequences of cannabis, among which are respiratory symptoms, cannabis dependence, and perhaps, rates of accidents. It is too small, for example, to detect any increase in rates of psychoses and respiratory cancer among cannabis users, or decreased birth weight, and an increased rate of birth defects among their children (see Appendix B).

The ability of the study to detect health effects of cannabis is also limited by reliance upon self-reported health and psychological status. Extensive medical examinations and investigations were precluded because of cost. The reliance on self-report data means that undetected and asymptomatic illness cannot be examined. The limitations of self-report were minimised by using items from the 1989-1990 National Health Survey so that comparisons could be made between the self-reported health status of long-term cannabis users and that of the general population, matched for age, gender and area of residence.

The study was also limited in its ability to assess the psychological consequences of long-term cannabis use. The small sample size precluded an examination of the relationship between cannabis use and the risks of developing major mental disorders, such as schizophrenia, or major depressive illness. The study had more capacity to measure the impact of cannabis use on the users' personal well-being, and on the prevalence of symptoms of less serious psychological

disorders, such as symptoms of anxiety and depression. The use of validated scales to measure self-esteem, happiness, and minor psychiatric morbidity enabled an analysis to be made of relationships between cannabis use and these measures of psychological well-being. An hypothesised consequence of long-term cannabis use that was most difficult to assess was the "amotivational" syndrome. The approach taken was to use self-reported symptoms of impaired motivation and to assess the extent to which users were actively engaged in work and other social pursuits.

The study could also provide only limited data on the extent to which cannabis was used for therapeutic purposes, such as, as an anti-convulsant, anti-spasmodic, anti-emetic as an adjunct to cancer chemotherapy, and for conditions such as glaucoma, asthma, and HIV (Grinspoon & Bakalar, 1993). The self-reported use of cannabis to self-medicate these medical problems was explored but the study could not be used to evaluate its efficacy for any of these purposes.

We also inquired about what users believed the possible adverse health effects of cannabis to be. These questions were taken from an earlier general population survey so that their knowledge and beliefs could be compared with that of the general population.

Health service use

We also examined the use of health services for complaints related to the possible health consequences of long-term heavy cannabis use. The forms of health service use of most interest were the use of medical and hospital services for accidental injury, respiratory symptoms, and for the treatment of cannabis and other types of drug dependence. Because of the alternative life style orientation of many users, we also inquired about the use of alternative health practitioners, such as, naturopaths, acupuncturists, and spiritual healers.

As was the case with measures of health status, the data were limited to self-reported health service use. For the more conventional types of health service use, we used items from the 1989-1990 National Health Survey data. This permitted comparisons to be made between the health service use of the sample and that of the general population matched for age, gender and area of residence.

Involvement with legal system

The blackmarket cultivation and distribution of cannabis in Australia has been estimated to generate \$1.09 billion per annum, and the law enforcement costs of policing the prohibition on cannabis has been estimated at \$329 million, or 13% of the annual expenditure on police, courts and prison (McDonald & Atkinson, 1995). In a typical 12-month period there are more than 47,000 offences for possession and use of cannabis in Australia (McDonald & Atkinson, 1995).

Since the North Cast area has a higher rate of cannabis offences than the rest of NSW we inquired about our sample's experience with police and the criminal justice system. This was of particular interest given evidence that there were differential risks of detection for cannabis offences in Queensland in 1991 (Advisory Committee on Illicit Drugs, 1993). Within the limitations of the study sample size, we also aimed to inquire about the self-reported effects, if any, that arrest and convictions for cannabis offences had on patterns of cannabis use, and on other aspects of the

person's life, such as employment.

We were also interested in the extent to which long-term cannabis use required some personal involvement in cannabis cultivation. We asked about the extent of cultivation for personal use and for sale. Those who are involved in an illegal industry, like cannabis cultivation, are at the mercy of other criminals who prey upon them by, for example, stealing their plants, drugs or money, knowing that their victims cannot complain to the police. We accordingly also asked about thefts of plants under cultivation and thefts of cannabis.

METHOD

The research was conducted in three main phases. The first exploratory phase consisted of interviews with key informants and a pilot test of a draft questionnaire. The second phase consisted of in-depth interviews with 268 long-term intensive cannabis users using a structured questionnaire. The third phase involved a series of unstructured interviews with a sample of family members and close friends of the cannabis users who were interviewed in the second phase.

Phase I: Exploratory work

The exploratory phase had three main purposes: (1) to identify areas of inquiry and questions to be included in the survey instrument and, more generally, to assist in developing the data collection instrument; (2) to define the characteristics of the target population of long-term cannabis users and to identify ways in which they could be recruited for interview; and (3) to alert the research team to problems that might be encountered during the fieldwork. It involved interviews with key informants, a focus group with long-term cannabis users, and informal conversations with local cannabis growers and users.

Key informant interviews.

The interviews with key informants were loosely structured around a number of themes (see Appendix C) to allow information to emerge which might expand the conceptual areas about which data would be collected, and to identify important issues in conducting the research.

In all, 26 respondents were interviewed. They included: local cannabis users and growers who were known to members of the research team; local residents; local general practitioners, needle exchange and HIV prevention workers; AIDS workers; drug and alcohol rehabilitation workers; psychologists; police officers; social workers; and drug and alcohol counsellors.

Pilot fieldwork.

Ten interviews were conducted with current and former cannabis users. These focussed on the circumstances of their cannabis use, the social context of using cannabis, and their perceptions about cannabis use. These interviews were content-analysed and the results used to develop the questionnaires for phases 2 and 3.

A focus group of five long-term cannabis users was conducted in order to gather information about positive aspects of cannabis use, since much of the research literature on cannabis has focussed on the negative consequences of use. At the suggestion of key informants, the research project inquired about both the positive and negative aspects of cannabis use. The information provided in the focus group was used to construct the questionnaire. Some of the topics that we intended to include in the questionnaire were pretested in the group to indicate how best to approach them in the interview schedule.

Results of the exploratory phase.

The development of the data collection instruments was greatly assisted by the findings of the exploratory phase. The following issues were identified.

First, many key informants - users, growers and health professionals - critically scrutinised the researchers' credibility and the rationale for the project. They also emphasised the critical importance of confidentiality and the necessity for the research team to be seen as absolutely trustworthy by potential respondents. Personal safety of the field researchers was also a concern for some key informants.

Second, cannabis use polarises opinion. Residents of one of the areas selected for the fieldwork were very vocal in their support of cannabis as a drug of choice and for their condemnation of the State marijuana laws. It was seen as very important for the field-workers to be completely objective and impartial, and not to be identified with any cannabis lobby group.

Third, the role of the police in enforcing laws against cannabis use and cultivation was a dominant issue for many potential respondents. The precaution was taken of briefing members of the local police force on the purpose and nature of the research before the main fieldwork began.

Fourth, it was necessary for the research team to be prepared to deal with any problems that were encountered in the field, such as psychiatric disorder, drug abuse, domestic violence, and child abuse. All interviewers were provided with a list of referral sources in their area so that any individuals requesting assistance could be given an appropriate referral. The interviewers were also "debriefed" after interviews to deal with any emotionally difficult situations that they encountered.

Fifth, it soon became apparent that growing, buying and selling cannabis were an important part of the lives of many of the target group. Cannabis was often used as payment for goods and services as well as being an important source of income for many potential respondents. The interview schedule accordingly inquired about the degree of involvement of respondents in the local cannabis industry.

Sixth, an issue raised by several key informants was the potency of the cannabis products used by long-term cannabis users. It is generally recognised that individual strains of marijuana can vary considerably in the amount of THC they contain (see, eg, Mikuriya & Aldrich, 1988). The THC potency of cannabis can also vary according to the season, the form of the plant that is used (whether heads, leaf, hash or sinsemilla) and the mode of administration (e.g. smoking a joint or a bong, or eating a hash cookie). Unfortunately, legal difficulties prevented any assays being done on the potency of cannabis used by respondents (see Appendix A).

Phase 2: The user survey.

Recruiting the sample

Since it was not possible to obtain a simple random sample of cannabis users subjects were recruited by the chain-referral method known as "snowball" sampling (Biernacki & Waldorf, 1981). Snowball sampling involves the researcher interviewing an initial set of contacts and asking them to introduce the interviewer to other users whom they know or with whom they are acquainted. These contacts in turn introduce others to the interviewer, and so on. This technique has been used successfully to access difficult-to-reach or hidden populations of drug users (see, eg. Biernacki & Waldorf 1981; Lambert 1990; Solowij *et al*, 1992).

As Lee (1993) has pointed out, a snowball sample does not necessarily produce a long chain of contacts originating from the initial contacts. It more often produces a slow accumulation of interviews from a number of different starting points rather than a geometrically increasing number of respondents originating from a single source. This was the case in the present research: we interviewed many small chains of respondents which depended upon the social networks of the field-workers and their ability to contact eligible respondents with a range of different characteristics. Biernacki & Waldorf (1981) have argued that this is a preferable sampling strategy since it enables a sample to be recruited in a purposeful way to include respondents with characteristics who should be included on theoretical or other grounds.

The characteristics of the sample were monitored as the fieldwork progressed to ensure that particular types of respondent were neither under- nor over-represented in proportion to their assumed distribution in the population. The variables monitored were: gender; duration and intensity of use; other drug use; occupational status; living situation; whether the respondent had dependent children; and whether the respondent had come to the notice of the police for cannabis offences.

The original research proposal stipulated that at least one third of respondents would be women since the 1991 NCADA Social Issues Survey indicated that a third of regular cannabis users were women. It was also decided that no more than half of the sample (125 respondents) should be regular users of other drugs, including alcohol, and no more than 50 should be ex-users. We also aimed to obtain a representation of occupational status and living situation (urban, rural) that was similar to that on the NSW North Coast, as indicated, by Census data for the region. In the event, the achieved sample met all the criteria stipulated by the survey design.

The possibility of advertising for respondents through local media was considered as a method of recruitment because it has been used successfully in similar surveys in urban areas (e.g. Hando & Hall, 1993; Solowij, Hall & Lee, 1992). However it was not used because there was a concern that self-recruited volunteers may have been unrepresentative. In general, field-workers did not interview people who canvassed them. Clients of treatment agencies were also rejected as sources for possible subjects because this may have biased the sample towards problematic users.

Conduct of the Survey

The role of field-workers

The local knowledge and contacts of the five field-workers contributed substantially to successful recruitment. The field-workers had access to local networks, were trusted by potential respondents, and could initiate a number of chains of referral from their own contacts. Their local knowledge also provided a degree of legitimacy to the project, and helped to establish rapport with, and enhance the cooperation, of the interviewees. One field-worker was an established member of the local community and many of the people she was able to recruit had known her for many years. Another was able to access a broad cross-section of the community by generating chains of respondents with very different characteristics he had met as a result of previous work he had done in the community. A third field-worker found that as a result of conducting interviews he attended many more social events in the course of which he made acquaintances whom he recruited for the survey and they, in turn, recommended him to their friends. Other personal qualities of the field-workers that facilitated recruitment and enhanced the quality of the data included social status in the target area, superior communication skills, and a high degree of reliability and sense of responsibility.

Trust was a key factor in recruitment, with some respondents being wary despite assurances about confidentiality. For example, one daily user refused to take part because he realised that he would be questioned about his criminal record. He was also concerned that friends, who did not know that he and his partner were users, would have disapproved if they had learnt about his use. When making appointments, the subject matter of the interview was never mentioned on the telephone since there was a general feeling among the survey population that telephones were not secure. An interviewee who was a professional, for example, said that she would be willing to talk face-to-face but did not want to talk about the survey on the telephone since the conversation might be recorded or tapped. Some respondents believed that there was a relay on the phone line that started a tape-recorder if certain key words were mentioned.

Criteria for inclusion in the sample

The major criterion for entry into the study was that the person had used cannabis "regularly" for at least 10 years. "Regular" use was defined as using at least 3 times a week. Use may have been less frequent on occasion (e.g. if cannabis was in short supply) but users had to "usually" use cannabis with this frequency. Female users whose use was irregular during pregnancy or breast-feeding were included provided they had at least 10 years of use. When recruiting respondents, interviewers were deliberately vague about the entry criteria so that volunteers would not exaggerate their use in order to qualify for the study.

Subjects who formerly met these criteria also qualified for interview if their current use was less than 3 times a week or if they were currently abstinent from cannabis, provided that they had ceased their use not more than 12 months before the date of interview. There were 25 of these "ex-heavy-users" in the final sample to provide data on reasons for stopping and difficulties experienced in doing so. These subjects have been excluded from some statistical

analyses, such as, those relating to current symptoms of cannabis dependence.

Interview contract

Subjects were paid for their time and travel incurred in giving interviews, as has become standard practice in Australian studies of patterns of illicit drug use. Such payments maximise the response rate and ensure the quality of data (Hammersley *et al*, 1990; Hendin *et al*, 1987). Since the pilot interviews took between one and a half and two hours interviewees were paid \$30 for completing the interview.

All interviewees agreed to sign an interview contract (see Appendix D) when the interview was arranged, with payment conditional on meeting the terms of the contract. Respondents agreed that they would not be intoxicated or otherwise affected by cannabis during the interview and hence they agreed not to use cannabis immediately before interview. They also agreed that in order to be paid for their out of pocket expenses they would have to complete the interview which they were told would last at least two hours. All respondents signed a consent form before the interview (although not necessarily with their own name).

Ethical issues

The confidentiality and anonymity of information supplied was stressed throughout the interview. Respondents were not asked to divulge their real name. Any identifying information, such as, address and telephone number, was not linked with interview data that was stored separately in a locked filing cabinet in a locked room.

All participants were fully briefed on the nature and purpose of the study before taking part and they were told that they could withdraw at any time if they wished. Interviewers read out a standard explanation about the study on introducing themselves and respondents were asked to sign (with a fictitious name if they wished) a consent form which outlined the nature and purpose of the study (see Appendix D).

Interviewers were provided with the 24-hour telephone number of the NSW Alcohol & Drug Advisory Service (ADIS), and the telephone number of the local Community Health Service to refer respondents who sought counselling or another therapeutic intervention. Arrangements were also made with local police to intervene on behalf of interviewers if a police raid occurred during an interview. Fortunately, there was no need to invoke this arrangement.

The Interview Schedule

Data collection was by personal interview using the interview schedule (see Appendix E) that was developed during the exploratory fieldwork and questionnaires developed in previous research. It consisted of several domains of questions on attitudes and behaviour relating to cannabis use. These were derived from the medical and research literature and from pilot fieldwork. The schedule was administered to respondents by the interviewer, and required largely self-reported responses about the respondent's behaviours and experiences. The schedule covered the following areas:

Demographic characteristics: The demographic characteristics included: gender, age, ethnic origin, occupation, education, employment status, and area of residence.

Patterns of cannabis use: This domain covered: typical patterns of cannabis use including frequency, quantity used, modes of administration, history of use; reasons for use; experiential effects; self-control strategies; and patterns of hazardous use.

The information on **typical use** included: the typical mode of administration, the type of cannabis that was usually used; the quantity typically ingested per day and per week, the most common circumstances of use, and how long this pattern of use had been typical.

Information on the **last occasion of use included:** its recency, the social context, the type of cannabis that was used; the mode of administration, the quantity taken, and other substances that were taken concurrently.

Information on the **history of cannabis use** included: the age of first ever use and first regular cannabis use; the number of years of regular use; whether the subject had ever been a daily user, and if so, the total duration of daily use to date.

Information on **reasons for use** included current and past reasons for use, including use for medicinal reasons. Information on the **experiential effects** of cannabis included: the subjective effects of use, both positive and negative, any after-effects of use, therapeutic effects, negative health effects, effects on the motivation of self and others, and any effects when cannabis was used with alcohol or other drugs.

Information on **self-control strategies** included strategies to limit or stop cannabis use; any limit-setting and binges use patterns; periods of abstinence from cannabis and reasons for these. Information on **hazardous use** included driving a vehicle or operating machinery while or shortly after using cannabis and its reported effects on these activities.

Other drug use: Information was collected on the past and present use of a variety of legal and illegal substances. These included: tobacco, alcohol, tranquillisers, cocaine, amphetamines, heroin, other opiates (opium, morphine, methadone), inhalants, hallucinogens, and ecstasy. Subjects were asked about the extent to which they had used these drugs in conjunction with cannabis. The presence of hazardous or harmful alcohol use was assessed by the Alcohol Use Disorders Identification Test (AUDIT) (Saunders *et al*, 1993).

Cannabis Dependence: A number of questions were asked which related to cannabis dependence. These were based on criteria derived from the Diagnostic and Statistical Manual on Mental Disorders (DSM-III-R) (American Psychiatric Association, 1987, see Appendix F), the Severity of Dependence Scale (Gossop, Griffiths, Powis & Strang, 1992; Gossop *et al*, 1995), and a set of survey questions developed by Room and colleagues to assess cannabis dependence according to International Classification of Diseases (ICD-10) criteria (Adlaf, Ivis & Smart, 1994).

Health and Well-Being: Well-being was measured by a series of standardised questionnaires. These included: the 12-item General Health Questionnaire GHQ-12) (Goldberg & Williams,

1988), which is an indicator of psychiatric morbidity, such as, anxiety, depression and bodily preoccupation; the Symptom Check List-90 (SCL-90) (Derogatis, 1994) which also assesses symptoms of depression, anxiety, paranoia, and psychoticism; the Happiness Index which is a self-rated measure of life satisfaction (Fordyce, 1988); and the Coopersmith Self-esteem Inventory (Coopersmith, 1970).

A series of questions from the 1989-90 Australian National Health Survey were used to inquire about self-reported health status. These included: a self-rating of health status; a history of accidents; and symptoms of respiratory disease and other chronic health conditions. Self-reported positive and negative health effects of cannabis were elicited, and information was collected to assess the presence of symptoms of an amotivational syndrome.

Health Service Use: A series of questions from the 1989-90 Australian National Health Survey were also used to inquire about self-reported health service use. Information was also collected on the respondents recent treatment history, such as, whether they had consulted a GP, a medical specialist, an alternative health practitioner, or had been hospitalised. Additional questions were also asked about medical consultations for problems related to cannabis and other drug use.

Social and Family Circumstances: The information collected on social circumstances included: living arrangements; whether the subject had children in their care; whether they used cannabis around their children; whether their children used cannabis; their family's history of alcohol and drug problems; and the extent of cannabis use among their social networks.

Social functioning: This wide-ranging section covered: the respondents' values; their leisure-time activities; their work history and their degree of job satisfaction; their use of cannabis at work; and the extent to which their cannabis use had caused problems with friends, family or work.

Criminal activity: This section inquired about: the respondents' history of involvement with the police relating to cannabis and other drug use; whether they had any history of criminal convictions or charges; whether the police had been involved with any of their friends; and the effects, if any, of contact with the police on their subsequent cannabis use.

Attitudes About Drug Use: In this section respondents were asked their attitudes towards: current drug laws, proposals for the decriminalisation or legalisation of cannabis and other drugs; various social policies relating to cannabis; and their attitude towards cannabis use by adolescents.

Cannabis Supply: Respondents were asked about where they usually obtained their supply of cannabis; how available it was to them; their extent of involvement in growing cannabis for personal use or sale; the degree to which they depended upon cannabis as a source of income, and for those who purchased the drug, their typical expenditure on the drug.

The Interviews

Interviews for the main sample were carried out over an 11-month period between August 1994 and June 1995 by five interviewers. Interviewer training, and quality control of interview content, continued throughout the fieldwork to ensure that the data was of high quality and that the information collected by different interviewers was consistent.

The interview location varied depending on the preference of the interviewee. Many respondents were interviewed in their own homes. Another person (usually the partner) was present for at least part of the interview on 32 occasions (12% of the interviews) but in only one of these did the interviewer believe that the quality of the data was affected, and in that case only to a slight extent. Other respondents were interviewed in local parks, cafes or in community facilities, such as, a private room in a health clinic.

The Sample

The North Coast Region was selected as the study area for the reasons outlined above. The most important of these were the socio-demographic profile of the regional population and the region's reputation as a centre for cannabis cultivation which is reflected in its crime statistics and in the media coverage of the area. The region also has a high incidence of illicit drug use reflected in the relatively large size of its methadone and needle exchange programs.

The sample was recruited from two areas within the region situated about 250 kilometres apart. These areas were: the Byron Bay, Lismore and Nimbin areas, and the Bellingen and Coffs Harbour areas. These are among the main cannabis growing areas on the North Coast according to information from the NSW Police Service Drug Enforcement Agency's cannabis eradication program.

A total of 268 users were recruited for the user phase of the study, 162 from the first area and 106 from the other. About 90% of the sample were intensive cannabis users at time of interview: 243 who were currently using cannabis at least 3 to 4 days a week; 18 were current users who were using it less than 3 to 4 days a week but had used for ten or more years at a higher frequency; and 7 were long-term regular users who had stopped using within the past 12 months. The 25 occasional and ex-users all reported previous long periods of heavy use and 22 had a history of daily cannabis use.

Although it was not possible to aim for a representative sample of users in the study area, it is appropriate to ask how representative the achieved sample is likely to be. People who were in paid work, and particularly workers from certain occupational groups (e.g. tradesmen), proved to be relatively difficult to recruit. This may have been because they had limited free time, or because they felt their business reputation may have been at stake if their cannabis use became known. This group was targeted in the later stages of fieldwork, resulting in the recruitment of 15% tradespersons and 56% full or part-time workers to the sample.

In general, the subjects who were recruited were those who either knew and trusted the field-worker, or who had a friend who could vouch for the field-worker. The character of the achieved sample depended largely on the contacts of individual field-workers and their ability

to inspire trust. However, as far as could be ascertained from information from "insider networks", this did not appear to bias the achieved sample.

Data Analysis

Responses to questions were pre-coded where possible but the novelty of some of the interview content meant that there were a substantial number of open-ended questions, the responses to which were recorded verbatim and later coded. Coding frames were developed for these questions by examining the answers from a random sample of respondents. Data was entered and verified using the DE module of the Statistical Package for the Social Sciences.

The data analysis was broadly of two kinds: descriptive analyses of personal characteristics, patterns of cannabis use, other drug use, health and well-being, and the attitudes of the sample of cannabis users; and multivariate statistical analyses of relationships between some sets of these variables.

In the descriptive analyses, variables were tabulated by gender but combined results are presented if there were no gender differences. Continuous variables were summarised by means when they were approximately normally distributed and by medians when their distributions were skewed. Where possible, distributions were compared with population data (e.g. for health status and health service use) or other norms (e.g. self-esteem scores) by t-tests or chi-square tests.

The variables used in the multivariate quantitative analyses fell into five broad categories:

1. Users' social and demographic characteristics, including age, gender, education, occupation, income and social circumstances.
2. Patterns of cannabis use, including frequency, quantity, and duration.
3. Other drug use including alcohol and tobacco and other illicit drug use.
4. Potential health consequences of cannabis and other drug use, including cannabis dependence, impaired health and well-being, and treatment seeking.

The multivariate analyses attempted to disentangle the contribution that patterns of cannabis use made to these potentially adverse personal and social outcomes. Multivariate statistical methods were used to examine relationships between cannabis use and consequences while controlling for potentially confounding socio-demographic characteristics and other drug use. When the outcome was a continuous variable (e.g. dependence score) multiple linear regression analysis was used. When the outcome was a categorical variable (eg. sought treatment or not) the form of analysis was multiple logistic regression.

Phase 3: Interviews with Family and Friends of Users

The third phase of the research consisted of interviews with family members and friends of the cannabis users interviewed in phase 2, most of whom did not use cannabis. Since the purpose of this part of the study was to explore the meaning and social context of cannabis use, a grounded theory approach (Strauss & Corbin, 1990) was used. The inductive approach allowed explanatory categories to emerge from the data instead of looking for specified associations between variables measured in a planned way.

It was recognised that many issues explored in the user interviews could be related explicitly or implicitly to problems associated with cannabis use. Since many of the cannabis users viewed their own use as non-problematic, it was of particular interest to ask non-using family members and friends for their perspective on their partner's, friend's or family member's cannabis use. The central issue explored in the collateral interviews was: "what is it like to live with a regular cannabis user, or to have one as a close friend?"

This approach also attempted to overcome the inevitable limitations of the structured interview as a method of data gathering. What respondents say about their cannabis use is not necessarily a complete or an accurate portrayal of the social context or meaning of use, nor can a structured interview be expected to uncover all problems or positive aspects of cannabis use. Several studies have noted that although the users they interviewed appeared socially and occupationally functional with no evidence of psychopathology, further investigation revealed unexpressed difficulties in many (e.g. Haas & Hendin 1987, Roffman *et al*, 1988). The interviews with family and friends gave an opportunity to explore positive and negative aspects of cannabis use through the eyes of friends and families of long term users.

Criteria for inclusion

The respondents for this phase had to be in a close relationship with a cannabis user who had been interviewed in phase 2. They could be the partner or a close friend, or a house-mate or work colleague. They were regarded as eligible if they knew the primary respondent well, and had known him or her for at least 6 months. They generally did not regularly use cannabis themselves, although a small number of cannabis using collaterals were also interviewed.

Interview Contract

As with the user interviews, respondents were asked to agree to an interview contract. They were told that the interview would last up to 2 hours and they would be paid \$30 for completing it. They were also asked to sign a receipt but need not sign it with their own name.

It was explained that the purpose of the interview was to find out what it was like to live with, work with, or know well, someone who was a regular cannabis user. The purpose was not to "check up" on their partner or friend, but rather to find out the respondent's perspective on their friend or family member's cannabis use.

The respondent was told that everything would be treated in absolute confidence and that only the research team would have access to the interview material. If the interviewer thought it

appropriate, they could also reassure the user (who had already been interviewed) that nothing he or she told them during their interview would be disclosed to their friend or partner.

The Sample

In accordance with a grounded theory approach the number of respondents was not predetermined. Analysis of the data proceeded as the fieldwork progressed, and the results of the analyses influenced sampling of the type and number of further respondents.

The fieldwork in phase III was carried out over a period of 9 months, between January and October 1995. In all, 31 respondents were interviewed. These respondents proved more difficult to recruit than the users. This was partly because it was decided to restrict recruitment to family and friends of those users who were in the user sample; and partly because of an understandable reluctance, despite assurances of confidentiality, to disclose information about their friend or partner. All these interviews were tape-recorded, with the agreement of the interviewee.

The Interview Guide

These interviews explored a number of themes that were kept as general as possible to enable explanatory codes to emerge. (See Appendix G for the interview schedule). The interviewers were told that the content of the questions might change as this part of the study progressed, depending on what categories emerged from the data collected.

The major themes explored in the interviews were: the **experience** of being with a habitual user; the effect of cannabis use on **relationships**; discussions between the user and the collateral about **using cannabis**; the **positive aspects of use** as perceived by the collateral; any perceived **negative aspects of use** and how the collateral responded to these; the collateral's perceptions of the **reasons for use**; any perceived signs of cannabis **dependence**; any periods of **abstinence**; issues involved in dealing with **children and household tasks**; and any **legal aspects** of use.

Data Analysis

The interviews were transcribed verbatim and analysed for emerging themes as the fieldwork progressed. As themes were identified, they were explored in more detail in later interviews. This follows a grounded theory approach in which explanatory variables and theoretical understanding emerge from the data as fieldwork progresses.

RESULTS

Demographic and Social Characteristics

The sample comprised 268 adult residents (59% men and 41% women) of the NSW North Coast with a mean age of 36.4 years (SD = 7.5 years). The majority were aged 31 or older (see table 1). Only 1 person was aged under 21 years, 9% were aged from 21 to 30 years, 47% from 31 to 40 years, 38% from 41 to 50 years and 6% were 51 years or older. Men were older on average than women (38.9 and 34.2 years, $t [241 \text{ df}] = 3.95, p < 0.001$). More than two thirds of the sample (69%) were Australian born and 4% identified themselves as Aboriginal or Torres Strait Islanders (ATSI).

Education and Employment

The sample was well educated, with 62% having obtained further educational qualifications since leaving school. Most often this was an undergraduate university degree (15%), a non-university tertiary qualification (13%), a trade qualification (10%) or post-graduate education (8%). A further 11% had completed at least some university education. Men were more likely to have a trade qualifications (15% versus 4% of women), while women were more likely to have non-university tertiary qualifications (20% versus 9% of men).

More than half of the sample were employed (58%), 33% part-time and 25% full-time, and 15% had been in paid employment within the last 2 years. Forty percent of those working described themselves as self-employed. Almost a quarter (24%) were employed by State or Federal government agencies. Apart from paid work, 70% of the sample were involved in some kind of voluntary work.

Just under half (43%) reported that they were unemployed or receiving government benefits, including sickness or single parent allowances. One in five performed home duties (21%), and 2% were retired. More women (43%) than men (26%) were engaged in part-time work or performing home duties (35% versus 11%).

Three quarters of the sample were currently employed or had been employed in the two years prior to interview. Of these, 41% had been self-employed, 25% had worked in private enterprise, 25% in the public service, 4% in a family business or farm, and 4% in non-government or community organisations. When their occupations were categorised according to Australian Standard Classification of Occupations codes (Australian Bureau of Statistics, 1986), professionals comprised the major occupational category (25%), followed by tradespersons (19%) and sales and personal service employees (18%). Smaller proportions of the sample worked as clerks (11%), paraprofessionals (9%), managers/administrators (9%), labourers (7%), and plant/machine operators (1%).

The main sources of income were employment (48%) and government benefits (42%). A small proportion received their main support from their partner or family (6%), Austudy (5%) or had a private income (5%). One in five respondents (19%) earned money from selling cannabis, and 6% earned at least half their income this way.

Table 1: Demographic Characteristics

	Males	Females	Persons
N	157	111	268
Mean Age	38.9	34.2	37.0
Ethnicity (%)			
Australian Born	59.0	72.7	64.7
Aboriginal	5.1	2.7	4.1
Overseas born	35.9	24.5	31.2
Education (%)			
Secondary < 4 yrs	19.1	24.3	21.3
Secondary 5- 6 yrs	17.8	16.2	17.2
Tertiary non-univ.	28.1	27.9	27.9
University	35.0	31.5	33.6
Employment (%)			
Employed FT	31.8	15.3	25.0
Employ PT	25.5	43.2	32.8
Student	6.4	11.7	8.6
Social security	38.9	47.7	42.5
Retired	1.9	0.9	1.5
Home duties	10.8	35.1	20.9
Other	5.7	8.1	6.7
Main income source(%)			
Employment	49.7	45.9	48.1
Social security	39.5	45.0	41.8
Austudy	5.1	5.4	5.2
Partner/family	4.5	8.1	6.0
Other	6.4	2.7	4.9

Living Situation

Two thirds of the men and women in the sample (64%) were currently in a relationship. Just over half (57%) had children under 16 years of age in their part-time or full-time care; 64% of men as against 52% of women. The majority of respondents lived with others, with 24% living alone (28% of men and 17% of women). One third (34%) were living with their partner and children, 9% were living only with their partner, and 19% were single parents. More women than men were single parents (32% of women and 8% of men). Small percentages lived in group households of unrelated adults with children (5%), unrelated adults (8%) or relatives (2%).

The majority of the sample lived in a rural setting, with 29% living in urban or suburban areas.

Most frequently, respondents lived in a rural, sole occupancy dwelling (31%), or a multiple occupancy dwelling (25%), which provides a communal lifestyle in a rural setting. Smaller proportions lived in rural, shared dwellings (11%), and in caravan parks (2%) or temporary accommodation (2%).

Comparison with 1991 Census data

The demographic characteristics of the sample (CU) were compared with those of the general Australian population (AUS), and the population of the NSW North Coast (NC) towns from which the sample was obtained (see tables 2 and 3). The following comparisons are approximate because there are some differences between the classifications used in the Census and in the present study.

Both the AUS and NC populations had equal proportions of men and women whereas the CU sample had a greater proportion of men. The CU sample also differed in age structure, with the majority (85%) aged between 31 and 50 years. There were fewer respondents under 31 years (10%) and fewer older than 50 years (6%) than either the AUS (29% and 32% respectively) or NC (21% and 37% respectively) populations. The lack of younger respondents in the CU sample is a consequence of recruiting long term cannabis users.

Table 2: Comparison with data from 1991 Australian Census

Variable (%)	Australia (n=16850540)	N Coast (n=24984)	Cannabis (n=268)
Gender (aged 18+)			
male	49.0	49.1	58.6
female	51.0	50.9	41.4
Age (aged 18+)			
18-20	6.8	4.8	0.4
21-30	21.8	16.6	9.3
31-40	21.5	23.4	46.6
41-50	17.7	17.9	37.7
51+	32.2	37.2	6.0
Ethnicity (all pop)			
Australian-born, non-ATSI	76.1	88.1	64.7
Australian-born, ATSI	1.6	4.9	4.1
born overseas	22.3	7.0	31.2
Marital Status (aged 15+)			
living with partner	55.1	58.6	42.7

Compared to the AUS population, the NC population had fewer overseas-born residents. While the CU group had a similar proportion of Aboriginal and Torres Strait Islanders to the NC population, a higher proportion were overseas born (31%) compared to both AUS (22%)

and NC (7%) samples. A smaller proportion of the CU (43%) were living with a partner than either AUS (55%) or the NC (59%).

Table 3: Comparison with 1991 Australian Census data

Variable (%)	Australia (n=16850540)	N Coast (n=24984)	Cannabis (n=268)
Schooling (aged 15+)			
Left school at			
under 15 yrs	15.0	15.9	1.5
15	20.9	29.2	6.7
16	19.2	22.7	13.1
17	16.2	10.6	3.4
18	9.3	6.8	13.8
19+	5.8	1.8	
still there	4.7	5.4	
never went	0.9	0.3	
Highest Qualification (aged 15+)			
Higher degree	1.0	0.2	7.5
Bachelor degree	5.7	2.6	14.9
postgrad/other diploma	6.2	5.5	13.4
skilled vocational (=trade)	10.3	10.4	10.4
basic vocational	3.3	3.5	
school only	61.1	66.1	38.5
Employment Status (aged 15 yrs+)			
employed	54.3	42.8	57.8
unemployed	7.1	11.9	43.0 for last 2
not in labour force	36.2	43.3	categories
Household type (aged 15+)			
% of people in h/hold of:	*		
parent, 2 parent family	34.6	35.9	34.1
sole parent	4.2	5.4	18.4
couple, no children	20.4	22.9	8.6
group household	4.4	1.8	13.1
single person	8.6	9.0	23.6

* Defined as area covered by the same postcodes as in cannabis study

NB: Percentages are approximate because of slightly different denominators for tables and different ways of classifying the same types of variables.

In general, the CU sample was better educated than both comparison samples, with a higher proportion having achieved undergraduate or postgraduate qualifications. Patterns of employment differed among the comparison groups. The NC population had a higher proportion of residents who were unemployed (12%) or out of the labour force (43%) than the AUS population (7% and 36% respectively). However, the CU sample was similar to the AUS comparison group, with 43% of respondents unemployed or outside the labour force.

The AUS and NC samples were similar in household type and both differed from the CU. While at least half the adult comparison populations lived in relationships, the CU group contained proportionally more single parents (18%) than AUS (4%) or the NC (5%), more people living in group households (13%) than AUS (4%) and NC(2%), and more people living alone (24%) than AUS and NC(both 9%). The CU group also had an under-representation of people living in a relationship without children (9% compared with 20% in AUS and 23% in NC).

Patterns of Cannabis and Other Drug Use

The snowball sampling method of recruitment produced a sample of adults with a long history of regular cannabis use (see Appendix H for some composite profiles of respondents). The respondents first initiated cannabis use around the age of 17 (median of 16.8 years), a little later for males (median of 17.3 years) than for females (a median of 16.2 years). They became regular cannabis users on average two years later at the age of 19 (median of 19.2 years for males and 18.7 years for females). The average length of their regular cannabis use was 19 years, with males having a longer history of regular use (median of 20.2 years) than females (median of 17.4 years) (see table 4).

Smoking was the usual method of cannabis administration. Just under half (48%) usually smoked a joint of cannabis and tobacco, 22% smoked a cannabis joint without tobacco, 16% used a waterpipe or "bong", 2% a chillum, and 12% used combinations of these methods. Only one person usually ate cannabis. Whatever method of smoking was used, the majority of the sample (79%) mixed cannabis with tobacco.

The typical frequency of cannabis use was every day in 60% of cases, four or more times a week for 86%, and two or more times a week for 94%. This had been the typical pattern of use for more than a year in 83%, and for more than 5 years in 62% of cases. The typical quantity consumed per day ranged between 0.2 and 40 "standard" joints. The median number of "standard" joints per day was 2 (see Appendix A). The person who reported smoking 40 joints per day was unusual: the typical quantity was much less, with 50% of the sample using between 1 and 4 joints per day. A third used cannabis throughout the day, while the remainder restricted themselves to evenings or other times.

Most of the sample (80%) had been daily cannabis users at some time, with a median duration of 9.9 years of daily use (12.1 for males and 8.5 for females). This represented over half (59%) of their cannabis using history (70% of the males' and 52% of the females'). Just under half (47%) reported that they had occasional cannabis "binges" (57% of males and 43% of females), usually at "harvest time" or when with friends who were using.

Given the common pattern of regular sustained cannabis use, and the evidence that tolerance develops to the effects of the drug, it is not surprising that most of the sample used the more potent cannabis preparations. Almost sixty percent (57%) reported that they typically used the "heads" of the cannabis plant, and 21% smoked a mixture of heads and leaf. Only 1% reported using cannabis resin or "hash". The remainder used cannabis leaf (4%), combinations of the above (13%) or other forms (4%) of cannabis, such as, tips and leaf. Almost all said they preferred heads and only used less potent forms when heads were unavailable, or they could not afford to purchase them.

Table 4: Patterns of Cannabis Use

	Males	Females	Persons
N	157	111	268
Frequency of use %			
daily	61.1	58.6	60.1
4-6 days /week	26.1	25.2	25.7
1-3 days /week	10.2	11.7	10.8
< weekly	2.5	4.5	3.4
Mdn Age 1st use	17	16	17
Mdn Age Reg. use	19	19	19
Mdn Years Reg. use	20	17	19
Usual method %			
joint cannabis only	21.0	22.5	21.6
joint with tobacco	44.6	52.3	47.8
bong	19.7	11.7	16.4
other	4.4	1.8	3.3
combinations	10.2	11.7	10.8
Kind of cannabis %			
heads	62.2	* 50.5	57.3
heads/leaf	19.9	22.5	21.0
other	17.9	27.0	21.6

Alcohol and Tobacco Use

After cannabis, the most widely used drugs in the sample were alcohol and tobacco (see table 5). Almost all had used alcohol at some time in their lives (98%), and most (79%) had used alcohol within the past month. Just under half (43%) consumed alcohol more than once a week, with a greater proportion of men doing so than women (51% versus 31%). However, more women than men exceeded recommended National Health and Medical Research Council (NHRMC) levels of alcohol consumption. While 24% of men typically exceeded their recommended level of 4 standard drinks on a drinking day, 31% of women typically drank more than their recommended safe level of 2 standard drinks. Despite a greater proportion of

women consuming alcohol at hazardous or harmful levels, men more frequently reported drinking six or more drinks on one occasion, with 21% of men doing so at least weekly compared to only 3% of women.

Small proportions of the sample reported problems resulting from their drinking in the year prior to interview. More than one in five (23%) had felt guilt or remorse after drinking in this period, 16% had been unable to remember the events of the previous night because of their drinking, 16% had failed to do what was expected of them because of their drinking, and 14% had not been able to stop drinking once they had started. One in ten said that they had injured themselves or someone else as a result of their drinking (11%), and one in five (18%) reported that a friend, relative or health professional had expressed concern about their alcohol consumption, half of these in the past year.

Using the cut-off of 8 or more recommended by the WHO (Babor, de la Fuente, Saunders & Grant, 1989), the total score on the AUDIT identified 30% of the respondents (28% of the men and 18% of the women) who were drinking at hazardous and harmful levels. Using the Australian recommended cut-off (Conigrave, Hall & Saunders, 1995), which takes into account gender differences in consumption, 37% of the sample were classified as drinking in a potentially dangerous manner. This comprised 41% of men (score of 7 or more) and 30% of women (score of 6 or more).

Data from a number of comparison samples on the NSW North Coast indicate that this pattern of alcohol consumption was not exceptionally high. For example, preliminary data from a sample of 1934 people recruited from a wide range of settings such as hospitals, community health centres and non-government agencies for Community Drinkcheck, revealed that 50% were drinking at potentially dangerous levels: 42% of women scored 6 or more and 59% of men scored 7 or more on the AUDIT (unpublished data provided by the North Coast Public Health Unit). A recent study conducted in the area found a mean AUDIT score of 11.0 in 2749 drinkers in licensed premises, with 53% in the hazardous range and 25% in the harmful range (Reilly *et al*, 1997).

Though most respondents used alcohol and cannabis together, the majority did so less than weekly and 14% never did so. Forty-one percent reported that they used alcohol and cannabis together on most days (14%) or at least weekly (27%). In the past month the sample reported using cannabis with alcohol a median of 4 times. Around a third of the sample reported that they drank more alcohol when cannabis was not available.

The majority of the sample (88%) were either current (66%) or former (22%) tobacco smokers. The average age at which former smokers had quit smoking was 30 years. Among current smokers, the median number of cigarettes smoked per day was 15. Almost half of the sample (42% of men and half of the women) reported that they smoked more tobacco when cannabis was not available.

Table 5: Patterns of Alcohol and Tobacco Use

Variable %	Males	Females	Persons
N	157	111	268
Alcohol ever used	96.8	100	98.1
last month	78.3	82.0	79.9
Drinking frequency			
5 + week	21.8	10.0	16.9
2-4 week	29.5	20.9	25.9
weekly or less	16.7	21.8	18.8
monthly or less	32.1	47.2	38.4
Standard drinks per occasion			
1 - 2	41.9	69.2	53.3
3 - 4	34.5	25.2	30.6
5 - 6	11.5	4.7	8.6
7 +	12.2	0.9	7.5
Concurrent alcohol & cannabis use			
daily	16.4	8.3	13.0
weekly	30.3	20.2	26.1
less often	53.3	71.5	60.9
AUDIT mdn score	6	4	5
% problem 1*	41.4	29.7	36.6
% problem 2	38.2	18.0	29.9
Current tobacco smoking status			
current smoker	61.1	66.7	63.8
ex-smoker	23.6	25.2	24.3
never smoked	15.3	8.1	12.3

* Two definitions of alcohol-related problem as defined by the AUDIT: problem 1 = an AUDIT score of 7+ for men and 6+ for women (based on Conigrave, Hall and Saunders, 1995); problem 2 = an AUDIT score of 8+ for both men and women (based on Babor *et al*, 1989).

Other Illicit Drug Use

Most of the sample had used other illicit drugs at some time in their lives (see table 6). Almost all (92%) had used hallucinogens at some time, and more than half had used amphetamines (75%), cocaine (71%), benzodiazepines (54%), opiates other than heroin (59%), and designer drugs, such as ecstasy (56%). Just under half had used heroin (42%) at least once in their lives. Fewer than a quarter (23%) had ever used inhalants, such as, amyl nitrate ("rush") or nitrous oxide ("laughing gas"). On average, respondents had used 5.7 of the 8 illicit drug classes about which they were asked at some time in their lives.

The use of other illicit drugs had primarily occurred in the past. Only a quarter (24%) had used any illicit drug other than cannabis in the past month. None of these drug classes been used by more than 10% of the sample in the past month, and in most cases, fewer than 5% of the sample that had used any of these drugs in the past month. On average, they had only used 1 of the 8 drug types in the past month.

Correlates of Cannabis Use Patterns

There were some small correlations between respondent characteristics, other drug use and cannabis use patterns. The strongest correlate of the age at which cannabis was first used was the number of illicit drug types that the person had used in their lives ($r = -0.35$). This indicated that the earlier that the person had first used cannabis, the more types of other illicit drugs that they had ever used. There were smaller correlations between gender and age of first use ($r = -0.14$) indicating that females had initiated earlier than males. The strongest correlate of the number of years of cannabis use was the number of illicit drug types ever used ($r = 0.21$), indicating that the longer that cannabis had been used, the more types of other illicit drugs that the person had tried. There was also a small correlation between gender and years of use ($r = -0.17$), with females having a shorter duration of use than males.

There were very few statistically significant predictors of the quantity of cannabis that was typically consumed (which was modelled as the logarithm of the number of "standard joints" typically used because the distribution was positively skewed). One of the few predictors of typical quantity of cannabis used was the typical frequency of use ($r = 0.16$), indicating that those who were daily cannabis users typically used more cannabis than those who used less frequently.

A multiple regression analysis indicated that typical quantity of cannabis used could be modestly predicted ($R^2 = 0.06$, $p < 0.01$) by typical frequency of use ($B = 0.17$, $p < 0.01$) and a combination of past ($B = 0.12$, $p < 0.06$) and current use of other illicit drugs ($B = -0.11$, $p < 0.09$). This suggests that those whose used other illicit drugs in the past month typically used more cannabis than the minority who had not used other illicit drugs in the past month.

The typical frequency of cannabis use was uncorrelated with any other variables (other than the typical quantity used). This was probably because of the limited range of the variable frequency of use since the majority of the sample (86%) were daily or near daily cannabis users.

Table 6: Illicit Drug Use in lifetime and past month

	Males	Females	Persons
N	157	111	268
Hallucinogens % ever % last month	94.9 7.6	89.2 5.5	92.5 6.7
Amphetamines % ever % last month	77.7 7.6	70.3 4.5	74.6 5.2
Cocaine % ever % last month	70.1 2.5	72.1 4.5	70.9 3.4
Other opiates % ever % last month	61.1 2.5	55.0 3.6	58.6 3.0
Designer drugs % ever % last month	51.0 9.0	63.1 4.5	56.0 7.1
Benzodiazepines % ever % last month	52.2 3.2	55.9 2.7	53.7 3.0
Heroin % ever % last month	43.3 3.8	39.6 3.6	41.8 3.7
Inhalants % ever % last month	24.8 2.5	19.8 0	22.8 1.5
Mean Number used ever past month	5.8 1.2	5.7 1.1	5.7 1.2
% used any of these in the past month	27.0	21.0	24.0

Contexts of Cannabis Use

Social contexts of use

Cannabis was most often used in social settings (see table 7). Two thirds (67%) of the sample usually or always shared when smoking cannabis. This was often with a partner, friends, either at home (65%) or at a friend's house or cafe (62%), or with immediate family (28%). Few respondents said that they usually smoked cannabis alone (12%); the remainder smoked cannabis in company some of the time. Most (82%) reported smoking with strangers at some time, with only 18% claiming that they never did so. A smaller proportion smoked with their workmates (17%). Almost everyone in the sample had friends who used cannabis, and over 90% had friends who used cannabis on most days. They estimated that about three-quarters of their friends were cannabis users.

Familial patterns of use

Three quarters of the sample (73%) were part of a family group in which other members used cannabis. Of those who were currently in a relationship, three-quarters (73%) of their partners also used cannabis, usually in shared sessions, on an average of 7 times a week. More women usually smoked with their partner (74% versus 50% of men), while more men never or rarely smoked with theirs (24% of men versus 6% of women).

Just over half of the sample (54%) lived in a household containing children under 16 years of age, with women more likely to do so than men (63% versus 47% of men). Of those living with children, half (52%) said that they either used less cannabis when their children were around, or they restricted their use to times or places away from their children. But most (84%) did use cannabis when their children were present, and half of these (43%) said that their children had expressed concern about their use. Many (67%) had attempted to explain their cannabis use to their children, focussing on the negative aspects of smoking and the illegality of their cannabis use.

One in four of those with children (12% of the total sample) reported that their children had used cannabis, although the number of children who were old enough to use cannabis was unknown. Although some accepted adolescent cannabis use as inevitable, many expressed misgivings, or were ambivalent about it, feeling that the child was not old enough to use cannabis, or that they didn't like them doing it. Nineteen respondents reported that they gave cannabis to their children. Most whose children used cannabis attempted to discourage their children from using cannabis, or had encouraged them to use it in moderation, e.g. by persuading their children not to smoke on school days.

Table 7: Contexts of Cannabis Use

Variable (%)	Males	Females	Persons
N	157	111	268
Partner uses (n=171)	68.2	81.3	73.1
% smoke with partner usually	50.0	73.6	59.7
mean % of friends who use cannabis	75.9	73.6	74.9
% with friends who are heavy users	96.1	90.0	93.5
% usually smoke:			
alone	13.4	9.9	11.9
with friends	60.2	70.0	64.6
with family	22.3	36.0	28.0
with workmates	17.8	15.3	16.8
other	5.7	3.6	4.9
% use at work			
before	28.3	15.9	23.1
while working	28.4	12.8	21.8
during breaks	30.2	16.3	24.3
after	52.6	40.7	47.5
% often use during daily activities	60.7	61.8	61.2
% often use while driving	21.3	14.0	18.3
% often drive after using	34.0	27.1	31.2
% operate machinery after using	75.0	38.3	60.1
% accident after using	28.7	15.3	23.1

The respondents were also asked their opinion on adolescent cannabis use. Although only a minority (16%) approved of regular cannabis use by adolescents, most (86%) regarded occasional adolescent use as acceptable because they believed that cannabis had no harmful effects, its use was OK in moderation, it was better than alcohol or other drugs, and adolescents would use it anyway. The most common concerns expressed about adolescent cannabis use were: that adolescents were immature and still developing; it may have negative effects on their health; it may adversely affect their school performance; and it may be debilitating and reduce drive.

The attitudes of the respondents were more approving of both occasional and regular adolescent cannabis use than the general population in a recent survey of public perceptions of the health effects of cannabis use (Hall & Nelson, 1995). In this survey, only 8% of a sample of the general public regarded regular teenage use as acceptable, while 30% thought it acceptable for teenagers to use cannabis occasionally. The current study also found a much lower rate of approval for regular than occasional use by adolescents, and there were similar reasons given by respondents in both surveys as to why they were concerned about adolescent cannabis use.

Daily Activities and Work

Cannabis use was an integral part of daily life for most people in the sample (see table 7). The majority performed their normal daily activities either during or after smoking cannabis: 20% did so often, and 41% always or usually did so. Smoking before or during work was also common, with 41% of those employed in the past 2 years reporting that they did so. One quarter (23%) smoked just before work, 22% smoked while working and 24% smoked during work breaks. Just under half (48%) smoked after finishing work.

Driving and Operating Machinery

Cannabis use often went together with driving a motor vehicle (see table 7). Ninety per cent of the sample said they drove a vehicle at least occasionally soon after using cannabis, and 70% reported driving sometimes while using cannabis. A quarter (28%) reported that they never drove a car while smoking, and 10% reported that they never drove a car soon after smoking cannabis.

A quarter of respondents (23%) reported that they felt confident when driving after using cannabis. A further 18% said they felt normal or no different from usual and 25% said that they felt slower or more relaxed. One in four (27%) felt they were more careful or had to be more alert.

"When driving I slow down my speed, I am more cautious and its almost like the windscreen is a movie screen and I'm driving and if I make a mistake I'll fall through the movie screen and land on the audience. Sometimes when there's a beautiful thing happening, I wonder if anyone else is watching." (female, aged 36)

Much smaller proportions felt uncomfortable: they did not trust their judgements (8%), they were anxious (13%), or found it very aversive to drive after using cannabis (2%). Most

recognised that cannabis had some effects on their driving. Just under half (49%) believed that they drove more slowly and carefully, and another 25% believed that their performance was impaired, their reflexes and reaction times slowed, and their concentration was affected. Common observations were:

"I have to remember 'I'm driving'." (male, aged 56)

"It makes me less confident in judging distances and less capable in a tight situation."
(male, aged 35)

Users were also asked how often they used cannabis and alcohol together, and how often they had driven a vehicle after doing so in the last three months. Over half (58%) had used alcohol and cannabis on the same occasion at least once a month, and one in four of the sample had driven a vehicle afterwards. Men were more likely to have done so than women, with 15% of men having done so at least weekly, compared to 5% of women.

More than half the sample (60%) had operated machinery, such as chainsaws or power tools, or used guns, after using cannabis. Men were much more likely to have done so than women (75% vs 38%). Just under a quarter of respondents (23%) reported that they had experienced an accident after cannabis use. Men were more likely to have done so than women (29% vs 15%). The most common types of accidents were falls (39% of accidents), motor vehicle accidents (23%), accidents while operating machinery (5%), other work-related mishaps (9%), and other minor accidents, such as walking into a door (25%).

Users' Perceptions of Cannabis Use

Why use cannabis?

The most popular reasons for using cannabis were for relaxation or relief of tension (61% of respondents) and for enjoyment or to feel good (27%). Habit or craving was mentioned by 18% and social reasons by 17%. The intention of altering consciousness was cited by only 15%, though some mentioned they used it to enhance creativity, gain insights or help with problem-solving. Some (5%) mentioned medicinal reasons and 9% said that cannabis was a preferred alternative to other drugs, prescribed or otherwise. A fuller account of reasons for cannabis use is given in Appendix I.

The cannabis experience.

By far the most common effect of cannabis was relaxation or relief of tension. Almost half said it was calming, slowed them down, or helped them sleep. Other commonly-reported reactions or consequences were: a feeling of pleasure or enjoyment, a sense of well-being; a sense of elation or euphoria; mood-enhancing or altering (e.g. a sense of not taking life too seriously.); an alteration of consciousness, or of the way the world was perceived (e.g. a sense of clarity or a feeling of being detached from one's surroundings); an enhancement of everyday experiences, (e.g. of music or in nature), through a perception of increased sensitivity; stimulation of thinking processes and enhanced creativity, (e.g. by giving insights or helping

problem-solving); or encouraging introspection.

When asked what was experienced on the last occasion of use, most of the above were again reported with most mentioning feeling relaxed, or a sense of well-being or euphoria. Some said they had enjoyed the social aspects of using and sharing cannabis. When asked what was experienced several hours later, most (46%) were sleepy or asleep, or relaxed (12%). Some (15%) were still 'stoned' but for others, there was no discernible residual effect. Asked what the next day felt like, though 40% said 'no different' (and for some daily users, there never was a next day), one in five users (22%) felt fatigued, lethargic or unmotivated.

Seventy per cent of respondents said the effects they now experienced from cannabis were different from previously. For almost half the sample the effects were less; suggestive evidence that they had become tolerant to the effects of cannabis.

Positive and negative aspects of use.

The positive effects of cannabis most often mentioned were the effects reported above. Almost all reported they had experienced beneficial effects from taking it; two out of three respondents said it helped them relax, relieved stress and tension, and helped them sleep. Almost all said they experienced these effects on all or most of the occasions that they used cannabis.

Virtually all respondents also reported some negative aspect of cannabis use. Many of these were not direct effects of the drug but rather societal responses to their cannabis use. For example, 29% were concerned about the illegality of cannabis use, 14% found the costs of buying cannabis problematic, and 11% disliked the social stigma, or found their cannabis use isolated them socially.

Substantial minorities reported a variety of negative effects more directly attributable to using cannabis. A fifth of the sample (21%) said that it provoked negative emotions, such as, paranoia or depression; the same proportion reported that they felt tired, unmotivated or had low energy levels after using it. Some (11%) complained that they were forgetful and less able to concentrate, or that their mind was foggy. Nearly one in five (18%) were concerned about the effect of cannabis on their lungs or respiratory system, and 12% disliked the cannabis smoking experience, smell or after-taste. One in ten (9%) were concerned that they were cannabis-dependent: they reported craving or withdrawal symptoms, or that their use was out of control. A fuller account of the negative effects reported is given in Appendix J.

Cannabis self-control strategies and use patterns.

Most respondents said that they limited their cannabis use in certain situations or around certain people. Just under half (41%), for example, did not use at work or before work. A third (30%) would not use around strangers, parents, or people who they knew would disapprove, and 12% said they did not use with children present. Some limited their cannabis use to social situations, when they were on their own, or when they were outside their own home. Others chose not to use when they were anxious or depressed.

Other respondents used specific strategies for limiting use. Some set a limit on the amount of cannabis that they used per day; some titrated their dose to control the level of the "stone". Others restricted their use to evenings, or avoided sharing joints, did not encourage smoking sessions, used only home-grown cannabis, or did not "go out looking for it". A minority (16%) said they had no limits, no set rules, or they had been unsuccessful in attempting to set limits in the past.

Two-thirds reported (63%) that the amount of cannabis they used was consistent; a quarter said that the amount they used varied according to availability - depending either on the growing season, or on whether they were growing it themselves. Very few (3%) mentioned cost as a limiting factor, reflecting the availability of inexpensive cannabis to this group of users. Almost half (47%) said they sometimes went on a cannabis binge, most often when cannabis was plentiful, as for example, while on holidays, at a party and after the harvest was in.

Individuals were also asked whether they had refused offers of cannabis, whether there had been times when they stopped using altogether, and what they did when they ran out. Most (80%) reported that they had refused an offer of cannabis some time during the previous 12 months. This was for a variety of reasons: they "didn't feel like it" at the time; they were abstinent or wanted to limit their use; they were working or driving a vehicle at the time; the cannabis was poor quality, or they were suspicious of the person offering it. Very few (3%) said that it was because they couldn't afford the cannabis offered.

Nine out of ten respondents reported that there had been periods when they stopped using cannabis. These ranged from a few days to some years (mean=12 months). Only a third of the sample gave a lack of availability as the reason; most gave a variety of other reasons for stopping. When asked what they did when they ran out of cannabis: 80% said "I just run out" while small numbers reported that they never ran out.

Cannabis Dependence

Cannabis Use as a Problem

Just under a quarter (23%) of current users believed that their cannabis use was a problem (see table 8), and a further 3% believed that it was sometimes a problem. Women were more likely to say so than men (28% versus 19%) but this difference was not statistically significant ($\chi^2_1=2.8$, NS). When asked to rate the overall effects of cannabis in the past year, only 7% believed that on balance cannabis had done them more harm than good; the remainder felt that the harm was balanced by the good (21%), or that the good outweighed the harm (72%).

There were a number of reasons why these respondents believed that their cannabis use was a problem. Most often they felt dependent on cannabis (38%), as indicated by a craving to use it, feeling that their use was out of control, that it was taking priority in their lives, and that they depended on cannabis to feel good. Others had concerns about the effects of their cannabis use on their physical health (18%). The most commonly mentioned concerns were: respiratory problems related to smoking, and symptoms of lethargy and fatigue. Less frequent were concerns about its psychological effects (8%), such as, feeling withdrawn, having

difficulties relating to family and friends, and experiencing negative emotions. Work-related problems were reported by 3% of respondents, while the cost of cannabis was mentioned by 10% of those who reported a problem.

The respondents who did not feel that their cannabis use was a problem were asked how they would know if it had become one. They reported that cannabis use would be a problem: if they felt they were craving it or dependent on it; if their use was out of their control; if they were unable to cope without it; or if its use took priority in their lives, and they were spending "too much" on it. Cannabis would also be recognised as a problem if it caused health problems, such as, respiratory symptoms, cognitive impairment, "demotivation", and difficulties with friends, family, employment, or the law. As we shall see, many of the respondents' beliefs about symptoms of problems related to cannabis use resemble the criteria used for the diagnosis of cannabis dependence in both ICD-10 and DSM-III-R.

Cannabis Dependence Syndromes

Cannabis dependence was assessed in current cannabis users (n=243) by three sets of criteria. The first of these used ICD-10 criteria to estimate the prevalence of cannabis dependence in the 12 months prior to interview. The second set approximated to a DSM-III-R diagnosis for cannabis dependence. It was constructed from a number of items in the questionnaire (table 8; see Appendix F for their derivation). While the criteria generally refer to lifetime use, some of the questions only addressed use in the past year. The third measure was a five item scale the Severity of Dependence Scale which inquired about symptoms of dependence related to loss of control over use in the past year. It used a cut-off derived in research on amphetamine users (Hando and Hall, 1993).

ICD-10 Criteria

According to the ICD-10 criteria, 57% of current cannabis users were dependent on cannabis in the last year. They met a median of 3 of the 6 criteria for dependence (range 0-6). There were no differences between men and women in whether they met criteria for dependence, or in the number of criteria that they met (3 for men and women). The most commonly reported dependence symptoms were a strong urge or desire to use cannabis (75%), tolerance (54%), and persistent, unsuccessful attempts to cut down or stop (53%). Withdrawal symptoms were experienced by only 5% of the sample, although 20% had used cannabis to get over the after-effects of using cannabis.

Table 8: Symptoms of Cannabis Dependence

	Males	Females	Persons
N	135	98	233
Cannabis use a problem			
yes	18.7	28.0	22.6
no	78.4	70.0	74.9
sometimes	2.9	2.0	2.9
N	137	97	234
<u>ICD-10 criteria:</u>			
Strong urge to use	70.7	81.0	75.0
Impaired control	45.8	62.4	52.7
Withdrawal symptoms	23.9	20.8	22.6
Tolerance	51.8	56.7	53.8
Neglect other pleasures	47.2	35.6	42.4
Use despite problems	45.8	47.5	46.5
Meet 3 or more criteria	56.9	56.7	56.8
N	132	93	225
<u>DSM-III-R criteria:</u>			
Use longer than intended	25.0	31.3	27.6
Unsuccessful quit attempts	20.6	25.7	22.7
A lot of time using etc.	33.3	30.0	32.0
Intoxication during daily activities	75.4	69.3	72.8
Gave up other pleasures	29.3	18.2	24.7
Use despite problems	54.9	51.5	53.5
Tolerance	51.8	56.7	53.8
Withdrawal	5.6	3.0	4.5
Withdrawal relief	21.3	19.0	20.3
Meet 3 or more criteria	58.3	55.9	57.3
N	139	99	238
<u>SDS (% often/always):</u>			
Use out of control	4.9	8.9	6.7
Anxious without use	3.5	7.0	5.0
Worry about use	7.7	12.9	9.9
Wish to stop	5.7	8.9	7.0
Difficulty stopping	7.9	15.3	11.0
Score > 4	9.4	22.2	14.7

DSM-III-R Criteria

According to these criteria, 57% of current users were dependent on cannabis in the last year, the same proportion as measured by ICD-10 criteria. Respondents also met a median of 3 of the nine DSM-III-R criteria for dependence (range: 0-8). As with the ICD-10 criteria, there were no gender differences in the proportion who met criteria for dependence, or in the number of criteria that they met (both met a median of 3). The most highly endorsed criterion was frequent intoxication or use during daily activities (73%). More than half the sample (54%) also reported tolerance to the effects of cannabis, and 54% continued to use despite physical or psychological health or social problems caused or exacerbated by cannabis. The proportion of respondents reporting withdrawal symptoms (5%) and use of cannabis for withdrawal relief (20%) were the same as those for the ICD-10 diagnosis because they were assessed by the same items.

Severity of Dependence Scale

The median score on the SDS was 2, with females scoring higher than males ($t_{236}=-2.57$, $p < 0.01$). If a score of more than 4 is taken as indicative of dependence, only 15% of current cannabis users were defined as dependent on cannabis in the past year according to the SDS. Women were significantly more likely to have been diagnosed as dependent by the SDS than men (22% vs 9%; $\chi^2_1=7.6$, $p < 0.01$).

Agreement Between Dependence Measures

There was strong agreement between the ICD-10 and DSM-III-R measures of dependence as assessed by Cohen's kappa (0.77). This is consistent with the literature which shows that the two criteria identify much the same individuals as dependent. It is not surprising as many of the DSM-III-R criteria were assessed in the present study using the same questions as those used to assess ICD-10 criteria.

There was a marked discrepancy between the proportions identified as dependent according to the SDS and the DSM-III-R and ICD-10 criteria. The SDS identified less than a third as many (15%) as dependent as the other two sets of criteria (57%). There was consequently poor agreement between the SDS diagnosis of dependence and both the ICD-10 (kappa=0.16) and the DSM-III-R (kappa=0.14) diagnoses. The SDS appears to be measuring different aspects of dependence than the DSM-III-R and ICD-10 criteria which embody a more behavioural concept of dependence than the SDS which assesses how much the user was concerned about their use. Dependence defined by the SDS showed much better agreement with respondents' beliefs that their cannabis use was a problem (kappa=0.44) than did the ICD-10 or DSM-III-R dependence diagnoses (kappa=0.26 and 0.28, respectively).

The pattern of agreement between diagnoses of dependence using different criteria were reflected in the correlations between the number of each set of criteria that were met. The correlation between the number of ICD-10 and DSM-III-R criteria that were met was 0.88, while those between the ICD-10 and DSM-III-R criteria and the SDS were 0.33 and 0.35 respectively.

Correlates of Cannabis Dependence

Correlates of cannabis dependence were explored by examining Pearson product moment correlation coefficients between each of the three dependence measures and age, gender, quantity and frequency of cannabis use, age at which cannabis was first used, years of use, and past and current use of other licit and illicit drugs (see table 9). The dependence measures in each case was a score: the number of criteria met for the ICD-10 and DSM-III-R, and the total score on the SDS.

Age and gender were only weakly related to dependence scores. Age had a small negative correlation, indicating that those who were older had somewhat lower dependence scores, in large part because those who were older had commenced cannabis use at an earlier age than those who were younger. Gender was unrelated to any of the dependence scores.

Among measures of current cannabis use, the quantity of cannabis that was typically used was most consistently related to degree of dependence. It had positive correlations of 0.20 and 0.25 with scores on the ICD-10 and DSM-III-R criteria but no correlation with the SDS score. Frequency of use was uncorrelated with dependence as measured by any of the three scales, probably because of restricted range of frequency of use in this sample.

Among measures of past cannabis use, age at first use had the most consistent relationship to dependence score. The earlier a person reported that they had first used cannabis the more ICD-10 and DSM-III-R dependence criteria they met. There was a much weaker correlation between the SDS score and age of first use which was not statistically significant. The number of years of use was correlated modestly with the number of ICD-10 criteria that were met.

Current cigarette smoking status and alcohol use as assessed by the AUDIT score were uncorrelated with all three measures of cannabis dependence. A past use of illicit drugs was positively correlated with the cannabis dependence symptoms on the ICD-10 and DSM-III-R criteria but uncorrelated with SDS score. Current polydrug use was uncorrelated with any of the three measures of cannabis dependence.

Multiple linear regression analyses of the three dependence measures produced simple models that modestly predicted cannabis dependence scores on the ICD-10 ($R^2 = 0.10$, $p < 0.01$) and DSM-III-R measures ($R^2 = 0.09$, $p < 0.01$). There was no combination of the predictor variables that predicted SDS scores. In the case of the ICD-10 measure, the variables that predicted dependence score were: age ($B = -0.20$, $p < 0.05$), number of illicit drugs ever used ($B = 0.15$, $p < 0.05$), and the log of the typical quantity used ($B = 0.20$, $p < 0.05$). In the case of the DSM-III-R measure the variables that predicted dependence were similar but the variables were of more marginal statistical significance, namely, age ($B = -0.12$, $p < 0.10$), number of illicit drugs ever used ($B = 0.12$, $p < 0.10$), and typical quantity of cannabis used ($B = 0.24$, $p < 0.01$). The small negative correlation between age and dependence arose because those who were older than 40 had started their cannabis use much later (typically early 20s) than those who were 30 or younger (who had typically started in their mid teens).

Table 9: Correlates of cannabis dependence (Pearson correlation coefficients)

	ICD-10	DSM-III-R	SDS
N	226	210	229
Age	-0.19	-0.12	-0.09
Gender	0.04	-0.02	-0.07
Quantity of cannabis used	0.20	0.25	0.03
Frequency of use	0.04	0.09	0.04
Age at first use of cannabis	-0.13	0.12	-0.07
Years of cannabis use	-0.14	-0.05	-0.05
Smoker	-0.01	0.04	-0.02
AUDIT score	0.04	0.02	-0.06
N illicit drugs ever used	0.17	0.15	0.01
N illicit drugs used past month	-0.03	-0.02	-0.07

*

Similar results were produced by multiple logistic regression analyses of variables that predicted the odds of being categorised as dependent, according to the ICD-10 and DSM-III-R criteria, or as the result of having an SDS score greater than 4. The odds of being classified as dependent according to ICD-10 criteria were predicted by the log of typical quantity of cannabis used (OR = 1.45 [1.07, 1.96] for each log joint unit), and by the number of other illicit drugs that the person had ever used (OR = 1.14 [1.00, 1.31] for each illicit drug used). The same pattern of results emerged in predicting the odds of being classified as cannabis dependent according to the DSM-III-R criteria, namely, the log of typical quantity of cannabis used (OR = 1.47 [1.08, 2.00] for each log joint unit), and by the number of other illicit drugs that the person had ever used (OR = 1.11 [0.96, 1.27]). As with the multiple linear regression analysis, a multiple logistic regression analysis did not predict the odds of being classified as dependent according to the SDS.

All three measures of dependence were strongly related to the odds of a respondent reporting that they believed that they had a problem with their cannabis use. Using logistic regression, the increase in the odds of reporting a problem with cannabis use were 7.22 [3.09, 16.91] higher for those who met ICD-10 criteria for dependence, 8.27 [3.35, 20.47] times higher for those who met DSM-III-R criteria, and 17.89 [7.36, 43.49] times higher for those who had an SDS score greater than 4.

Health Status

Perceived Health Risks of Cannabis

The 243 respondents who were current cannabis users were asked about their perceptions of the health risks of cannabis use. Almost all (97%) believed that cannabis smoking had adverse effects on the respiratory system, such as lung cancer, emphysema, bronchitis, and asthma, or more general adverse effects. Almost a third (29%) believed that cannabis posed psychological or behavioural risks, such as, memory or other cognitive impairment, negative emotional states, lethargy, and mental problems, such as, schizophrenia or psychosis. Nearly one in five (17%) cited other health risks, such as damage to the immune, circulatory or nervous systems. Only 1% cited dependence as a risk and 5% believed that cannabis posed no risks to health.

Self-Reported Health Effects of Cannabis

Two thirds of current cannabis users did not perceive that their use had adversely affected their mental or physical health. Of the third (34%) who believed that cannabis had adversely affected their health, the problems that were most often reported were consistent with the health effects identified in the research literature (Hall *et al*, 1994). They were primarily respiratory problems (84% of those who reported a health problem), followed by psychological or behavioural effects (30%) and other effects on various bodily systems (25%). Only 1% identified dependence as a health effect of their cannabis use.

Just under half (47%) had experienced a lack of motivation, or a lack of interest in achieving as a result of their cannabis use. Men more frequently reported having experienced these effects than women (54% versus 36%). The great majority of respondents (85%), however, had observed adverse effects of cannabis on motivation in other users.

Therapeutic Uses

The use of cannabis for medical reasons was common (64%), more so among women than men (73% versus 56%). Its most frequent use was for pain relief (23%), followed by its use to relax or get to sleep (17%) and for pre-menstrual tension and menstrual cramps (33% of women). Other uses were symptomatic relief from headaches (9%), respiratory ailments such as colds or the flu (8%), and other health problems (7%). Its use as an aid for nausea or loss of appetite was cited by 5%, while 3% used it to relieve of negative emotions. Apart from the more common therapeutic uses reported (Grinspoon and Bakalar, 1993), respondents reported using it for treating chronic dysentery, herpes simplex, gravel rash, and for bruises and sprains (as a poultice).

Table 10: Self-reported health effects

Variables (%)	Males	Females	Persons
N	142	101	243
% experienced adverse health effects	30.8	37.8	33.8
% experienced amotivation	54.0	36.4	46.6
% observed amotivation	85.3	85.4	85.3
% used cannabis therapeutically	56.4	73.3	63.5
% persistent cough bronchitis	51.8	55.8	53.4

Use During Pregnancy

The majority of women (87%) had experienced a pregnancy. Of these, a third had stopped using (34%) or reduced their cannabis use (35%) while pregnant. Among those who had breastfed, 21% had stopped and 43% had reduced their cannabis use while breastfeeding.

Health Conditions and Symptoms

Table 11 compares the responses of the current users group (CU) with 20-49 year old residents of the North Coast (NC) and the Australian population (AUS) who were interviewed in the National Health Survey. This age group was chosen as it was most comparable to the age of cannabis sample, after taking into account different ways of categorising age in the two studies.

One third (37%) of current users had a recurrent long-term medical condition, this being more common among women (45% versus 31% of men). These conditions were predominantly respiratory: hay fever (8%), asthma (7%), sinusitis (4%), allergies (2%) and bronchitis/emphysema (1%). The other most common recurrent conditions were musculoskeletal problems (5%), eczema/dermatitis (2%) and digestive diseases (2%).

Half the sample (51%) had a long-term condition to which they had adjusted. These were predominantly musculoskeletal disorders (33%) and arthritis (8%). Just under a third (30%) had a long-term condition which was currently under treatment or medication, primarily impaired eyesight (21%).

Table 11: Health Conditions and Symptoms

	Cannabis Study (N=243)	NHS - North Coast (N=323)*	NHS - Australia (N=24,336)*
Any long term condition			
males	81.7	63.1	65.4
females	81.2	64.4	71.4
persons	81.5	63.8	68.4
Long-term condition caused by accident (N=184)			
males	37.5	32.7	26.3
females	27.5	15.2	16.5
persons	33.2	23.8	21.1
Wheezy/whistly chest (N=209)			
males	51.6	26.4	18.9
females	53.0	21.2	17.3
persons	52.2	23.8	18.1

*adults aged 20-49

In all, the majority of respondents (82%) had a long term medical condition (one of at least 6 months duration). The CU sample were significantly more likely to have such a condition than both the NC population (64%; unadjusted OR = 2.5; 95%CI = 1.7, 3.8; $\chi^2 = 21.3$, $p < 0.0001$) and the AUS population (68%; unadjusted OR = 2.0; 95%CI = 1.5, 2.9; $\chi^2 = 19.1$, $p < 0.0001$).

Approximately one quarter (26%) of long-term conditions were respiratory, again with little difference between samples. However, those in the CU sample were significantly less likely to have long-term respiratory conditions than both the AUS sample (36%, unadjusted OR=0.6; 95%CI=0.5, 0.9; $\chi^2 = 8.4$, $p < 0.01$), and the NC sample, although in this comparison the upper bound of the confidence interval was 1 (36%; unadjusted OR = 0.6; 95%CI = 0.4, 1.0; $\chi^2 = 4.8$, $p < 0.05$).

One third of those with a long term condition (33%) reported that it was the result of an accident. These had occurred more than one year ago in most cases (81% of accidents). Of these people, 18% had been smoking cannabis during, or just prior to, the accident. A higher proportion of the cannabis sample (33%) reported their long-term condition(s) was the result of an accident compared to the other groups (NC: 24%, unadjusted OR = 1.6; 95%CI = 1.0, 2.5, $\chi^2 = 4.2$, $p < 0.05$; and AUS: 21%, unadjusted OR = 1.9, 95%CI = 1.3, 2.6, $\chi^2 = 15.7$, p

< 0.001).

A logistic regression investigated potential predictors of whether respondents' long term conditions were caused by an accident. It was decided to assess the role of gender, age, alcohol consumption (as indicated by non-problematic or problematic scores on the AUDIT) and cannabis dependence as predictors of this outcome. Univariate analyses failed to reveal a significant relationship between gender ($\chi^2=2.03$, $p=0.15$), age ($\chi^2=2.60$, $p=0.46$), alcohol consumption ($\chi^2=2.17$, $p=0.14$) or cannabis dependence ($\chi^2=0.02$, $p=0.89$) and outcome. All variables were entered simultaneously into a logistic regression model for a priori reasons but this model was not significant ($\chi^2=7.51$, 6df, $p=0.28$), and none of the predictor variables was significantly associated with outcome.

Respiratory Symptoms

The National Health Survey investigated respiratory symptoms (specifically wheezy or whistly chests), among those who did not suffer from chronic asthma, bronchitis or emphysema. Compared to the Australian and North Coast samples in the NHS, the CU group were more likely to have experienced these symptoms. Thus, 52% of non-asthma sufferers in the CU group reported this, compared to 24% in North Coast sample (unadjusted OR=3.5; 95%CI = 2.3, 5.2; $\chi^2 = 42.6$, $p < 0.0001$), and 21% in the Australian comparison samples (unadjusted OR = 4.9; 95%CI = 3.7, 6.5; $\chi^2 = 159.7$, $p < 0.0001$).

Predictors of Respiratory Symptoms

Multiple logistic regression analyses were conducted to identify variables that predicted reports of wheezy and whistly chests within the sample of cannabis users. A limited set of potential predictors were explored because of the small sample size. These were: typical quantity of cannabis used, cigarette smoking status (never smoked, past smoker and current smoker), and the ICD-10 and DSM-III-R measures of cannabis dependence.

The dependence measures were related to the odds of reporting respiratory symptoms. The odds of reporting a whistly chest were 2.27 [1.32, 3.91] times greater for those who met ICD-10 criteria, and 1.89 [1.09, 3.28] for those who met DSM-III-R criteria. The odds of reporting a persistent cough were 2.58 [1.50, 4.43] times greater for those who met ICD-10 criteria, and 1.85 [1.07, 3.20] for those who met DSM-III-R criteria.

The log of the typical quantity of cannabis smoked did not have a statistically significant relationship to the odds of reporting either a whistly chest (OR = 1.36 [0.90, 1.62]) or a persistent cough (OR = 1.12, [0.84, 1.50]), although in both cases the observed relationship was in the direction of an increased risk. Cigarette smoking status showed a pattern suggestive of an increased odds of reporting both whistly chest (OR = 1.84, [0.82, 4.14]) and persistent cough (OR = 1.61, [0.35, 2.20]) among current smokers but this was not statistically significant because there were very few persons in the reference category of those who had never smoked ($n = 10$). In the case of persistent cough, current cigarette smokers had a statistically significant increased odds of reporting the symptom (OR = 1.71, [1.58, 4.80]) when the variable of having met ICD-10 criteria for cannabis dependence was included in the model.

model.

Absence from Work and Health Service Utilisation

Almost one in ten of the sample (9%) had been absent from work or study in the fortnight prior to interview, on a median of two occasions. The reasons for absence were various, ranging from headaches to back problems, gastric problems or influenza. This figure was not statistically significantly higher than that in the comparison samples (NC: 3% and AUS: 7%).

Questions from the National Health Survey were also used to inquire about use of health services during the past year. These included questions about hospitalisation, as well as consultations with various types of medical and health professional, including alternative health practitioners. Again, there were few differences between the samples (see table 12).

Fourteen percent of the sample had been hospitalised in the year prior to interview, a median of once. Hospitalisation had been for a number of conditions, with no more than 2% of the sample having been hospitalised for each. The most frequently cited reasons for hospitalisation were: musculoskeletal conditions, injuries and hernia. A small proportion (3%) had visited the casualty or outpatients department at a hospital in the fortnight prior to interview.

A larger proportion of the sample (18%) had consulted a doctor or specialist about their health in the fortnight prior to interview. Consultations with medical practitioners were not dominated by any medical problem, with the most common reason for consultation being medical tests (15%), a checkup (11%), or for injuries (9%).

Two thirds of the sample (63%) had consulted an "alternative" practitioners in the previous year. This was much higher than in the North Coast (19%) and Australian comparison samples (15%). The most frequently consulted practitioners were herbalists (27%) and acupuncturists (21%). Reasons for consultation were similar to the reasons provided for visits to medical practitioners, with the addition of "spiritual reasons".

Drug treatment history

One in five of the respondents (21%) had*received some specialist treatment for drug dependence and drug-related problems at some time in their lives (see table 13). Most often this had been for treatment for tobacco (8%), cannabis (6%), alcohol (6%) and heroin dependence (5%). Less than 2% had received treatment for dependence on barbiturates, cocaine, or hallucinogens. The majority had received treatment for one drug type (15%) but 4% had received treatment for dependence on 2 or more drugs.

Table 12: Health Services Utilisation

	Cannabis study (N=243)	NHS - North Coast (N=323)*	NHS- Australia (N=24,336)*
% Hospitalisation in past year			
males	14.1	7.5	9.0
females	12.9	22.7	19.5
persons	13.6	15.2	14.3
% Casualty/OP visit in past year			
males	3.5	2.5	2.1
females	1.0	1.8	2.4
persons	2.5	2.2	2.2
% Dr/Specialist consultation past 2 weeks			
males	15.5	9.4	12.7
females	20.8	20.9	22.2
persons	17.7	15.2	17.5
% Consulting alter- native practitioner past year			
males	55.6	21.2	13.7
females	74.3	16.0	15.5
persons	63.4	18.6	14.6
Absence from work past 2 weeks			
males	9.2	4.4	7.3
females	8.9	2.5	7.0
persons	9.1	3.4	7.1

* Adults aged 20-49

Table 13: Treatment seeking

	Males	Females	Persons
N	157	111	268
Drug treatment history %	19.7	20.7	20.1
% Treatment for:			
tobacco	8.3	8.1	8.2
alcohol	7.6	2.7	5.6
marijuana	7.0	3.6	5.6
bzds	0	3.6	1.5
cocaine	1.9	0.9	1.5
hallucinogens	1.9	0	1.1
heroin	3.8	7.2	5.2
other	1.9	1.8	1.9

Help-seeking and medical advice on cannabis

Respondents were asked who they would go to if they needed help with cannabis use or health related problems. The most common response, made by one in four of the users (28%) was: "I can't imagine having a problem with cannabis", or "It's never been an issue for me". Some said they would talk to a friend or neighbour (18%), or go to a counsellor (16%) or a medical practitioner (12%). One in ten (11%) would have or had in fact dealt with such problems themselves and would not ask anyone for help.

Over half the sample (60%) had spoken with a doctor, or other health practitioner, about their cannabis use, 45% of these within the past year. Generally, their cannabis use was raised in the course of a regular medical check-up, or while receiving treatment for an illness or medical condition. They reported a variety of responses to their use of cannabis: 40% said that the health practitioner appeared to accept their use of cannabis, or did not regard it as a problem. A further 28% said that he or she appeared indifferent to their cannabis use, or showed no reaction when it was mentioned. Very few gave advice on possible health effects, and a few approved of their patient's use of cannabis on medical grounds. Overall, a majority of those users who reported discussing their cannabis use with a medical practitioner felt that it was helpful to them (though the 'help' reported was not always orthodox medical advice).

Psychological Functioning

Psychological Well-being

The scores of current cannabis users on several measures of psychological functioning provided mixed evidence of psychological disturbance in the group. The median score on the GHQ-12 was 0. If a score of above 1 is taken as indicative of being a "case" (Goldberg & Williams, 1988), then 24% of current users exhibited some degree of psychological distress in the month prior to interview. There were no gender differences in median score or percentage of users who were distressed. This figure is within the range of estimates reported in Australian general population surveys using the same cut-off on the GHQ-12, and a longer version of the same questionnaire (the GHQ-28) (see Singh *et al*, 1987).

The median scores on the 9 subscales and 3 indexes of the SCL90-R were all within one standard deviation of scores produced by normal, adult samples and did not conform to the profile deemed to warrant clinical intervention (Derogatis, 1990). However, the sample had significantly higher scores on the Global Severity Index subscale, which provides a summary of the number and intensity of distress of symptoms, than a normative US nonpatient sample of 974 people (mean of 0.40 versus 0.31, $t_{1214}=3.8$, $p < 0.001$) (Derogatis, 1994). Scores on the Coopersmith Inventory (median = 80) generally indicated high self-esteem (Coopersmith, 1970), while scores on the Happiness Measures indicated a general feeling of well-being among respondents, with estimates very similar to those in the US normative population (Fordyce, 1988).

Predictors of Psychological Well-Being

There were relationships between psychological distress and cannabis use and dependence. This was clearest for the SCL-90-R scale which recent Australian research has shown to be the most sensitive psychological test for detecting anxiety and depressive disorders among heroin dependent persons (Mattick *et al*, 1996).

SCL-90-R scores were positively correlated with cannabis dependence scores for both the ICD-10 ($r = 0.33$) and DSM-III-R criteria ($r = 0.35$) indicating that those who reported more dependence symptoms also reported more psychological distress. There was a small statistically significant negative correlation between the log of typical quantity of cannabis consumed and SCL-90-R score ($r = -0.14$). This suggests that the heavier cannabis users are less likely to experience psychological symptoms of distress.

When dependence and the log of the typical quantity of cannabis were included in a linear multiple regression analysis, both variables remained as statistically significant predictors, regardless of whether dependence was assessed by ICD-10 ($B = 0.38$, $R^2 = 0.16$, $p < 0.001$) or DSM-III-R criteria ($B = 0.39$, $R^2 = 0.19$, $p < 0.001$). Typical quantity of cannabis used was still negatively related to symptoms of distress ($B = -0.21$ when ICD-10 criteria were used, and $B = -0.23$ when DSM-III-R criteria were used), suggesting that some respondents may be using cannabis as a form of self-medication for symptoms of depression and anxiety.

Self-Rated Well-Being and Health

When asked to rate their happiness and their overall health on two four point rating scales respondents generally perceived themselves to be happy (76%) or very happy (17%). Their perception of their general health was good (59%) or excellent (23%). A log linear statistical analysis (Hall and Bird, 1986) which compared the sample's ratings with those of the North Coast and Australian population revealed some small differences (see table 14). The cannabis users did not differ from the North Coast or the Australian population in the proportion who were very happy or happy but there were fewer cannabis users who very happy than in both of the other samples (17% versus 27% and 30%, X^2 1 df = 5.3, and 14.14 respectively). In the case of self-rated health, the sample of cannabis users did not differ from the North Coast sample in their ratings. They were, however, less likely than the Australian population to rate their health as excellent (23% vs 35%, X^2 1 df = 11.92)

Table 14: Self-rated Health and Well-being (Persons)

	Cannabis Study (n=243)	NHS North Coast (n=323) *	NHS - Australia (n=24,336) *
Self-rated happiness (n=230)			
very happy	17.4	26.6	29.8
happy	75.7	70.6	66.9
unhappy	6.5	2.8	2.9
very unhappy	0.4	0	0.5
Self-rated health (n=241)			
excellent	23.2	29.1	35.3
good	58.9	55.4	51.8
fair	16.2	14.6	10.9
poor	1.7	0.9	1.9

* persons aged 20-49

Family problems

A quarter (26%) of respondents said that their cannabis use produced problems with their family or friends. Most of these (90%) were family-related, and they usually concerned their partner's attitude towards their cannabis use. Many of the users' partners objected to them using cannabis at all, to using too much, or to being chronically "stoned".

Some partners were concerned about the effects of their partners' cannabis use on their relationship. They reported that cannabis use "blocked emotions", impairing communication, and leaving issues unresolved, and that the user lacked motivation, or the user's personality had changed in ways with which the non-using partner found difficult to cope. Problems with

the user's parents were most often disapproval of their cannabis use, or the perception that their son or daughter was a drug addict or a failure. Half of those reporting such family problems said that they had not affected their cannabis use. Of the remainder, some used cannabis more discreetly while others had reduced their use. Very few stopped using because of family pressure. These reports are consistent with the results of interviews with family and friends about the effects of pressure to cease or moderate cannabis use (see below).

Mental Disorders

One in ten respondents reported that they had been diagnosed with a psychiatric problem at some time in their lives. The most commonly reported diagnoses were: depression (5%), psychoses (3%) or "nerves" (1%). Three percent of respondents had been admitted to a psychiatric hospital or unit.

In the absence of comparable population data from the National Health Survey it is difficult to make any statements about the significance of these data. All that can be said is that these self-reported rates are not unusual. Depressive illnesses are among the most common forms of disorder found in US population surveys (Hall, 1996), and psychoses are among those disorders that are the most likely to be diagnosed and treated (Hall, 1996). The 3% rate of "psychosis" may appear higher than the 1% figure often quoted but in a sample of 243 cases, this is not significantly different from the 1% expectation.

Activities, Interests and Motivation

Some observers have described an "amotivational" state or syndrome among long-term intensive cannabis users (see Hall *et al*, 1994). The evidence for such a syndrome in the present study was mixed. The following evidence was suggestive of such a syndrome. Almost half of the respondents (47%) agreed that heavy cannabis use could impair motivation, and most (80%) said that they had observed this effect in other cannabis users. Twenty percent said that one of the things they most disliked about cannabis was that it made them feel lethargic, fatigued and lacking in energy. A similar proportion reported that they experienced these effects the day after using cannabis (although for the majority of daily users there was no day after use). A minority also (13%) regarded their cannabis use as a problem because it made them feel unmotivated.

On the other hand, the motivation of most respondents to engage in daily activities was not obviously impaired. They frequently went about their daily activities, including their work, either while using, or shortly after using cannabis, and a third of the sample used cannabis throughout the day while working. Many also engaged in physical activities, such as, swimming or manual labour, after using cannabis, although they usually reported that it adversely affected their performance.

There was also evidence that most cannabis users were active in a variety of social activities in their communities. Most (80%) reported that they were interested in politics, particularly environmental issues, and half of these said they were actively involved in political activity. A pro-marijuana party, HEMP (Help End Marijuana Prohibition) was active in the study area and in one local community a pro-marijuana candidate ran in the State election, so it was not

surprising that just under half had an interest in political activities to reform marijuana laws. Their interest was no doubt also related to the fact that half of the sample had been apprehended by the police on cannabis-related matters (see below), and that its illegality was the aspect of cannabis that users most often disliked

Over half also said that they had a new interest or had engaged in a new activity during the last three months. These included: painting, entering a new relationship, travelling overseas, learning about computing, engaging in politics, singing, undertaking a TAFE course, or learning about horticulture. When asked if they had any goals for the future many mentioned goals to which they often demonstrated a commitment. Twenty percent of the sample, for example, were studying full or part-time. Around two-thirds were members of a club or organised group. Very few respondents spent the majority of their time alone.

This profile of users suggests that even though heavy cannabis use may affect the energy and motivation of some users, this was not true for most we interviewed. Very few fitted the stereotype of an amotivated chronic cannabis user who sat in a stupor all day. All were regular cannabis users but their cannabis use was an integral part of their round of daily activities.

Involvement with the Legal System

Police and Law Enforcement

Half of the sample (50%) had come under police notice at some time in their lives for their cannabis use (see table 15). Many of these had been single encounters but 15% had three or more such encounters. One in five were initially apprehended on another matter in the course of which they were found to be in the possession of cannabis. Most of these encounters had occurred some years previously (a mean of 10.4 years ago); in only 22% of cases had it been within the previous three years. In some cases they had occurred in other states, and in a small number of cases, in other countries.

The proportions who had been charged at any time in their lives for a cannabis offence were: possession (26%); cultivation (11%); and supply (6%). None had been charged with importation. The local police were involved in 63% of cases, and the Drug Enforcement Administration in 26%. Almost all were found guilty.

Respondents were also asked about their involvement with the police over other drug-related offences. Twelve percent had been apprehended at some time for a drug-related offence other than for cannabis. As was true of the cannabis offences, few of these other drug offences were recent, occurring on average 13.5 years before, and only 25% had been charged within the last 3 years. The most common offences were for possession and use (5%), supply and traffic (1%), and importation (0.4%).

One in three (34%) had been arrested for another offence at some time in their lives. The most common types were: drink-driving (8%), theft and stealing (6%), traffic offences (6%), robbery and assault (3%); and a variety of other offences (8%).

Treatment by Police and Courts

Respondents who came to police notice about cannabis were asked how they were treated by the police. Half said they were treated well or courteously, and half reported that they were treated badly. Of those who felt they had been treated badly, about half thought they had grounds for complaint, and only one in four of these had made a formal complaint. There was considerable anecdotal information provided by respondents about their experiences of which some typical comments are presented in Appendix K.

Table 15: Involvement with Legal System

Variable (%)	Males	Females	Persons
N	157	111	268
% Come to police notice	61.1	32.4	49.3
Mdn No. times	2	1	2
Most serious recent cannabis charges %			
possession/use	33.8	15.3	26.1
cultivate	14.0	6.3	10.8
supply/traffic	7.6	3.8	6.0
Other drug-related charges (ever) %	15.4	6.3	11.6
Other criminal charges %	41.9	23.4	34.4
Victim of drug rip off %	69.5	50.5	61.6

Those who had appeared before a court on a cannabis matter were asked whether they had been treated fairly. About half thought they were treated fairly and the half who felt they had been unfairly treated, either considered that the offence committed did not merit the severity of the sentence or they felt that cannabis use should not be illegal.

Effect of illegality on use

Users were asked whether the fact that cannabis was illegal made any difference to their use and if so, what kind of difference. Most said it restricted where and how they used cannabis; only 5% said that it restricted the amount they used. A fifth of the sample (18%) said that its illegality made no difference to their use.

Respondents were also asked whether they thought their use would be different if cannabis were legalised or decriminalised. Thirty percent said that they would use cannabis more

openly. Others said that they would feel safer or more relaxed, or they would be able to grow their own supplies. Only 4% said that they would use more if cannabis were legalised or decriminalised.

Those respondents who had been arrested for cannabis offences were asked whether this had affected their cannabis use. Only 4% said they stopped using, at least for a time; 1% had used less, and 5% reduced their consumption initially but later returned to their previous level of use. Most (70%) said it made no difference, and the remainder said that they had become more careful about where or how they used.

Two-thirds (64%) of the sample also knew someone, usually a friend, who had come to police attention because of their cannabis use, with the great majority of these appearing in court. Most respondents (83%) said that this vicarious experience of the legal system made no difference to their own use of cannabis; a few (11%) said they became more careful in how and when they used cannabis.

Cannabis Cultivation

Two thirds of the sample grew some cannabis for their own use, and nearly half grew all or most of the cannabis that they used. For most, cannabis was grown for their own use, and perhaps for their partner and friends. One in five derived part of their income from selling some of the cannabis that they grew, although for half of these it yielded only a minimal income. The majority of those who grew or supplied cannabis (55%) believed that a fine was the most likely penalty if they were apprehended.

One aspect of cannabis cultivation that preoccupied many of the users were differences in the psychoactive properties of different samples of cannabis. Some respondents described themselves as cognoscenti of cannabis. Not only, the interviewers were told, do leaf, heads and hash all produce different psychoactive effects, but so too did *cannabis indica* and *cannabis sativa*, particular strains of cannabis, and cannabis plants grown in different locations, at different times of the year, or under different conditions. A belief held by many was that hydroponically grown cannabis was inferior to "organically grown" cannabis; that is, cannabis grown without the use of chemicals.

Many respondents (60%) had at some time been the victim of theft or a "rip-off" related to cannabis or other drugs. Most incidents involved the theft of personal cannabis plants, or the experience of being cheated while buying or selling cannabis or other drugs. As accounts of the activities of cannabis growers in the United States (e.g. Raphael, 1985; Miller, 1992) indicate, growing cannabis is often a hazardous business and, as one grower put it, most growers have much more to fear from thieves than from the police.

Attitudes Towards the Legal Status of Illicit Drugs

Respondents were asked their opinions on the laws relating to the use of cannabis and other drugs in Australia. These questions were the same as those used in surveys of the general population (Bowman & Sanson-Fisher, 1994). Almost all (98%) said the law in NSW prohibiting the possession or use of cannabis for personal use should be changed because they

believed that it was not a crime, that the laws were unjust, and that it should be the personal choice or right of the individual to use cannabis if they so wished. Their support for the legalisation of cannabis use was much higher than the 29% in the Australian population in the 1995 National Drug Strategy Household Survey (National Drug Strategy, 1996).

Respondents were asked to what extent they would support or oppose changes to laws prohibiting the personal use of other currently illicit drugs. They were also asked whether they supported increased penalties for their sale or supply. Attitudes towards legalising illicit drug use were less positive towards heroin (68%), amphetamines (42%) and cocaine (50%) than cannabis (98%), but the proportions favouring legalisation of these drugs for personal use were still much higher than in the general population represented in the Household Survey, where they ranged between 4% and 6%. A substantial minority of the sample supported increased penalties for supply of heroin (30%), amphetamines (26%) and cocaine (24%), although as expected these figures were much lower than those expressed by respondents in the 1995 National Household Survey (namely, 86%-87%).

Attitudes Towards Cannabis Policies

The current sample were asked to indicate their attitudes towards five measures which could be undertaken by government to reduce cannabis use and harm in the community (Bowman & Sanson-Fisher, 1994) on a five point scale: strongly disagree, disagree, neutral, agree, and strongly agree. A pretest of the questions resulted in the addition of a sixth category, that the respondent found "the validity of a particular policy questionable".

**Table 16: Attitudes towards cannabis policy options:
per cent moderately or strongly agree**

	N (North Coast)	North Coast	Australia *
Factual education in high schools	220	92	92
Police to check drivers for cannabis use	265	32	88
Counselling	249	91	90
General community education	265	82	91
Stiffer penalties for sale or supply	264	1	37

* N = 1608 Source: Bowman & Sanson-Fisher, 1994

The support for factual education in schools and for the counselling of cannabis users among the cannabis users was the same as in the NSW population, 92% each for education, and 91% and 90% for counselling. This suggests that experienced cannabis users are aware of the possibilities of problematic cannabis use and supported the need for school and community education about cannabis. This support was qualified by 15% of respondents (15%) who were sceptical that counselling and education programs would provide unbiased information about the health effects of cannabis use.

There was much less support for the proposal that the police should check for cannabis use by drivers in much the same way as they do with alcohol. Over half of the sample (56%) disagreed to some extent with this proposal as against only 12% of the NSW general population. The view expressed by the cannabis users on this issue no doubt reflects their belief that cannabis use was not necessarily detrimental to driving performance. It contrasts with the concern expressed by a high proportion of the general public who consider that driving a vehicle after or while smoking cannabis should be illegal and subject to severe penalties (Bowman & Sanson-Fisher, 1994).

Interviews with Family and Friends of Users

A total of 31 interviews were conducted with family and friends of current cannabis users. Twenty-eight of them were the spouse or partner of a user, one was a flat-mate, one was a housekeeper and one was the daughter of a user. Four were male and 27 female. Twenty-one were currently non-users or only used occasionally, though most of them had previously used cannabis. This number represents all the partners or significant others of cannabis users who were willing or available to be interviewed in this phase of the study. The relatively small number is accounted for by the fact that some partners declined to be interviewed, and some users did not want us to interview their partner or friend. In addition, we did not interview those partners whose relationship was recent.

One of the purposes of these interviews was to complement the perceptions gained in the structured interviews with cannabis users. Self-reporting, even using a structured interview, will not necessarily give a complete or total picture of cannabis use, problems associated with use, or positive aspects of use. Several studies have noted that although the users they interviewed appeared socially and occupationally functional with no evidence of psychopathology, further investigation revealed unexpressed difficulties in many of them. These were found to relate particularly to adaptive difficulties in work and personal relationships, and to cannabis being used to cope with or minimise problems (e.g. Haas and Hendin, 1987, Roffman *et al*, 1988). Denial, conscious or unconscious, is a common feature of problematic use of other drugs and may also be an issue with cannabis users. The interviews with partners and others thus provided an opportunity to explore perceptions of people who generally did not use themselves but were close to cannabis users. Some of the alleged positive aspects of cannabis could also be explored in this way.

Opinions of friends or partners about the effects and consequences of cannabis ranged from positive to extremely negative. As is often the case with such issues, those for whom their partner's use was not a problem often had relatively little to say, simply because it was not an important issue for them. In contrast, those with a negative viewpoint were often more vocal. Because of this, the results of the content analysis tended to reveal more about negative than positive aspects of use. The findings inevitably reflect this to some extent and they should not be taken to suggest that all of the cannabis users interviewed had the adverse consequences of use reported below.

The interviews were transcribed verbatim and content analysed. Though the interview guide served as a starting point for a descriptive analytical framework, the open nature of the questions meant that other, sometimes novel, issues also emerged. The analysis thus resulted in a broader range of issues than was included in the original questionnaire. It also provided many insights into the context of cannabis use in the lives of users and their families and friends. This material is described under themes that emerged in the content analyses.

Living with cannabis use

Most respondents were vocal and articulate about their friend or partner's use, and held strong views about it. Of the 31 interviewed, 14 were negative in their overall assessment of cannabis use and how it affected them, 9 were positive in general, and 8 were generally

neutral.

Those respondents who were enthusiastic about the effects of cannabis on their partner or friend often described effects similar to those reported by users: that it relaxed the user, calmed them down, made them feel good, or (less often) that it enhanced creativity.

'He's more mellow, more relaxed when he's been smoking'

'I find he is fairly easy tempered and I think that is due to smoking'.

'He gets more into his creative side when he's using...he gets really inspired to compose'.

Others saw their partner's use as non-problematic and accepted it as part of their lives:

'All the time I have known him he has smoked (cannabis) and right from the very beginning I accepted it as part of his personality'.

Most of those who evaluated their partner or friend's cannabis use positively were regular users, although they generally used less than the subject's. Even among these, however, there were also some negative aspects of use that echoed in a milder way comments made by non-using respondents who were more negative about their partner's use.

Even partners who were generally negative appreciated the relaxing or calming effects of using, especially in comparison to alcohol use:

'If he is really uptight when he comes home from work, it has an instant calming influence on him'.

'Without it he is a more aggressive person'.

'I would much prefer to be with a stoned person than a drunk person any day.... at least he is harmless when he smokes'.

About one in four of the collaterals interviewed were accepting of their partner's cannabis use:

'It's normal, not a good or bad thing; it's only like I'll have a beer every now and then',

'It's no different to living with someone who smokes cigarettes'.

Just under half the respondents reacted negatively to their partner's use:

'I react; I cut off; I don't want to be around him (when he smokes)'.

'I try to express how I feel but he doesn't seem to quite understand.'

Certain themes tended to recur both among those who were negative and those who were

positive about their partner's use. One of these concerned detrimental effects they felt it had on memory and concentration:

'Memory- forgetting appointments. I work with him to get appointments and things like that together'

'She seems to be a little bit more forgetful, a little bit more hard to do things, to get motivated'.

'Concentration: he tends to lose concentration quite easily on tasks'.

'You see a lot more untogetherness'.

Several of the partners noticed an amotivational tendency which they attributed to cannabis while others noted the opposite:

'He tells me that it helps to motivate him whereas most people say that it demotivates. I can quite honestly disagree with them'.

'When you smoke a lot of dope it's really easy not to initiate things, just to let things pass over and to be just a bit too slow in following things through.'

'I find him lethargic, with no energy and no real enthusiasm. Just a sort of zombie-out individual with no spark in him'.

A common theme for many of the users' partners and friends was that cannabis was used to suppress or avoid painful emotions:

'The dope acts like an emotional anaesthetic so that he can avoid the issues he doesn't want to deal with'.

'The reason that someone like him smokes so much is to keep things that are hard to cope with not dealt with'.

Cannabis and intimate relationships

Some family and friends perceived that cannabis contributed to difficulties in their relationship with the user because he or she was 'not really there' for them, or 'was in a different reality':

'We seem to be on a different wavelength all the time and there is a definite problem with communication'.

'It was like living with someone you weren't living with; he wasn't there'.

Not all collaterals experienced this. Some found that their friend or partner was more pleasant or enjoyable to be with after using cannabis:

'When he smokes, that's when he is most relaxed. That's when we connect most'.

'I really like the little boy, the playfulness, the sweetness that comes out'.

Those partners and others who experienced problems with their friend's or partner's cannabis use adopted a number of strategies or tactics to enable them to deal with the problems. These included attempting to persuade their friend or partner to limit or stop their use, and negotiating about where or when they could use cannabis:

'When I raised it he was forced to look at it. Now he mostly tries to limit his smoking.'

'I try to helping him limit his use all the time. He just won't make that attempt'.

'He's been banished to smoke outside when there are kids in the house'.

Some would join their friend or partner in using, sometimes reluctantly:

'Once or twice a week I have one or two hits with him so that we're in the same frequency, so that I will be in communication with him. My body doesn't particularly like it, but I choose to do it'.

Others accepted their partner's cannabis use and adjusted their own behaviour or lifestyle to accommodate it:

'I cannot see that any amount of nagging or influencing on my part is going to change his habits. So I try to get on with it and not worry too much, and just accept that this is how it is.'

'It sometimes makes the dynamic of our relationship not all I would like it to be, but there's still a lot there that's very worthwhile'.

Effects of periods of abstinence

It could be argued that many of the negative qualities attributed to cannabis use could reflect difficulties found in any relationship - such as a lack of communication, or a feeling of exclusion when one partner has a consuming interest that the other does not share. As a way of checking on this, respondents were asked whether there were any differences in their friend or partner, or in the way they related, when they did not use cannabis.

Several respondents noted that their partner appeared to have withdrawal symptoms during the first few days after ceasing use:

'The third day he hits a peak: agitated, irritable, usually gets very depressed, morose'.

'She wanted to give it up once and that was a grumpy time for sure'.

'He tried to stop but he didn't sleep for a couple of days and he didn't feel very well...he

wasn't feeling good'.

After an initial withdrawal phase, respondents were sometimes pleasantly surprised:

'There's definitely more clarity, more vitality in his attitude when he isn't using cannabis'.

'After two weeks of being off the drug, he was sharper than he had been before'.

'He's just a little bit more alive and awake, not a different person but just more awake and alert'.

Others noted that the user experienced painful or disturbing emotions after stopping use, and believed that these had previously been suppressed by cannabis use:

'I feel dope is an analgesic. But when he stops using the pain comes up. And usually what happens is that he starts saying all the things wrong that I do in the relationship. I'm the baddy'.

'Unresolved stuff comes up when he doesn't smoke and he can get very anxious and paranoid and agitated. Then all the emotional stuff starts coming up to the surface - the dope acts like an emotional anaesthetic the rest of the time, so the issues he doesn't really want to deal with flatten him out'.

For some users, however, stopping use seemed to make little difference:

'We don't seem to have any adverse side effects when we stop smoking. If we haven't had a smoke for a couple of weeks, we might think ah, wouldn't it be nice; but we don't feel agitated or desperate'.

The perception that some users do not experience difficulties when they stop was supported by some cannabis users interviewed in the primary sample. Although some of them reported symptoms of dependence and withdrawal, others perceived no ill-effects on stopping use. However, some cannabis users were never able to tell because they had used cannabis on a daily basis over many years and had never run out of it. Similarly, some family members and friends had never known the user not to use cannabis:

'He's used ever since I was born. Sometimes I wonder what he is like when he's not stoned'.

'He does not run out; there are times I wish he would. I wish he'd run out for months and really get to sit with it, to know what it is like to not have it and to find out other things to do'.

Cannabis use and children

Since over half the cannabis users interviewed had children in their care, the issue of using cannabis around children was raised in the interviews with partners and significant others of the 22 of the 31 respondents who had children living with them. The main issues relating to

children were: using cannabis around children (e.g. explaining their use to their children, and their children's reactions to their use); how parental use affected the way they related to their children; and how they coped with their children's cannabis use.

Illegality was a major issue for both parents who use cannabis and their children. Possession and use of cannabis were illegal in NSW at the time of the study, and conviction can sometimes result in a jail sentence (McDonald & Atkinson, 1995). Thus the concern of non-using partners and their children was a legitimate one:

'When I was little and it would come up in conversation I'd never quite know what to say because I'd been trained from very little don't say anything about it because it's illegal and I'll get arrested' 'There were sometimes worries when I was little about police coming in and things like that.' (Daughter of a user)

A second concern was about children's cannabis use, the age at which they started, and the amount that they used. Parents found themselves serving as unwitting role models:

'We found the kids were taking papers and attempting to roll up numbers. That's when we had a serious discussion about what we should tell them. They'd pinch my beers as well, not that they'd open them, just in play, but one would be the father and one the mother and she'd be toking and he'd be drinking'.

The likelihood that their children would use cannabis was an issue for many cannabis using parents. For those whose children used cannabis the issue was how best to cope with this. Some accepted it as inevitable and hoped for the best:

'She (my daughter) very much follows my partner, sits around and has bongos with him. That upsets me. But with anything like that, you start being prohibitionist, you got problems. So you have to keep working around it, and hope she doesn't get into the same sort of pattern as he is into'.

'It ended up that us using in front of them seemed to be a way of us condoning them to use more and more. They are still using but moderately. Its OK. We've discussed it. They've been right into the heavy usage and come back out and thought about it and started to think about the beneficial way to use it. That is, when you've done your hard week at school and you've done your work and it's the weekend and OK I can relax now'.

Others attempted to prohibit their children from using cannabis:

'The message I want to get to him (13 year old) is that when they are grown up they can make their own choices, but while they are young and at school, they are under my care and I don't want them to do it. But if I say things like that to my 14 year old, it just causes a huge clash. If I find marijuana in the house, I get rid of it. I've thrown out huge amounts of dope.'

Some parents, while accepting that their children would use, attempted to monitor their use:

'I think they would be into it whether we did it or not. I'd rather they did it at home and we knew, and could also see the effects and tell them when they were doing it too much'.

The situation could get out of hand, particularly if adolescents were left unsupervised. Another respondent reported:

'We've stopped having it at home. I was away studying and a lot of the children had been coming here, and this place was becoming the session house. I've put up big signs: 'smoke free zone': no cigarettes, no dope. I've kind of cleaned it up'.

The dilemma of children and cannabis use was summed up by one partner of a cannabis user who said:

'I still get concerned about the effects of marijuana on children. Some of these kids have not been interested in drugs at all and others, by the time they are thirteen, are being given dope by their parents because they prefer that they give it rather than they buy it or steal it from them. To me, the whole thing is a worry. If you say, It's OK to use cannabis, what are you saying? Are you able to inculcate into your children that it's OK socially, or moderately, or what?'

Non-using parents of younger children were concerned about the effects of their partner's cannabis use on the parent-child relationship. Perceptions of this depended to an extent on whether they used cannabis while with their children. Some using parents saw the effects of cannabis as positive:

'Cannabis gives me more patience. It opens up an intuitive way of thinking, I can really see where my daughter's frustrations are coming from. Often if I'm not stoned, I find her really frustrating to deal with...I find I have a lot more patience with her if I've had a smoke. I think it's the same for B too, he'll be quite happy to spend an hour in the bedroom reading books to her and stuff like that, and playing games, and she seems to relax more'.

The mother of an 11-year old boy, interviewed in the main sample, felt similarly:

'I'm aware that he enjoys the intensity of the time I spend with him when I'm stoned: he laps it up'.

Others - mainly non-users or occasional users - saw the same situation negatively:

'I feel with bringing up children you should have some clarity with your time with them. That it's not fair to be smoking when you're around them. Yesterday I came home and he was really stoned and it completely annoyed me because it was his only day with them. I felt that it was avoiding being with them'.

'I think the kids have some difficulty relating to him. When he's stoned, and on a rave,

and relating with them they look at me and raise their eyebrows: 'What's he on about?'

The extraordinary thing about having little kids around someone who is stoned is that they are non-existent. They could be fighting and yelling and screaming and the blokes, or the groups of women and men, don't know they exist'.

I've talked to a lot of mothers who found that smoking (cannabis) was the only way they could get through their day, but what happened was they would just sit around with a lot of other mothers, while the children entertained themselves. I think it's a cop out'.

Others reported that being 'stoned' whilst in charge of children did not seem to result in any risk to the child:

'He looks after the kids if I need him to. If he has to take responsibility for them he seems to be able to do that, it does not seem to make any difference whether he has had a smoke or not'.

'I'm never in danger and I am never in neglect because of his cannabis habit. I'm very safe with him, it doesn't affect the way he cares about us and it doesn't affect the way he handles us. If the need arises he can cope with it'. (Daughter of a user).

Cannabis using life-styles

Among some sections of the communities in which we did the fieldwork, using (and growing) cannabis was an integral part of the local lifestyle. Though some users limited their cannabis use to evenings and weekends, or made it a rule not to use at work or in public, about one in three users felt comfortable in using every day, throughout the day, as they carried out their daily tasks. This created a culture of acceptance and support for cannabis use such that for some, cannabis use was a normal part of everyday life that was taken for granted:

'As soon as there's a group of people, then automatically joints are rolled and passed around. That's so common, and it doesn't matter whether it's morning or afternoon. Most of the time I don't take much notice. There's so much dope smoking in the area that if I did worry about it I'd spend all of my time concerned'.

Cannabis use was taken for granted, that is, until there was legal intervention:

'You just forget that it's illegal because everyone around you is doing it. It's just so commonplace in everyday life that it doesn't even come up as a legal issue. Until, oh my god, the worst happens, and someone we know has been busted'.

The high acceptance of cannabis could made it difficult for some to moderate use:

'These heavy dope smokers, not only my partner but other heavy smokers I know, all they want other people to do is to smoke with them. The first thing is "Oh, we'll have a

smoke". It's always the same: "We'll put the kettle on and roll a joint". And people who don't smoke on a regular basis, when they are around him, of course because he smokes so much they often will smoke a lot more'.

'When I'm on my own I'll have one smoke in the day, go a couple of days without smoking and maybe go another five days without smoking and save a bit. Whereas now I'm in a relationship with B. I smoke more. It definitely creates a culture of acceptance and support for using cannabis'.

Intensive cannabis use could however be tedious for those who were not users themselves:

'The only thing that worries me is that when people come around it's not a bong session. There will definitely be joints rolled and passed around but that's as an adjunct to, hopefully, some conversation. Sometimes I just find it incredibly boring'.

'Social use of cannabis is a funny thing. You invite all your friends, you all have a smoke and then just sit there and stare at the carpet for three hours and don't talk to each other. That's the way I see a lot of social cannabis use'.

Not all non-users experienced the cannabis use of others in this way. Some enjoyed the ambience:

'People become incredibly extroverted from it. I quite enjoy sitting and listening to them; as they get more and more stoned the conversation is different. It's more flowing and free, a bit like brainstorming'.

'I've been surrounded by people who smoke (cannabis) all my life so it's more like a shock when people come around that don't smoke. The whole atmosphere is different in the room: it's not so relaxed and laid back. I have memories from when I was very little of the room being full of smoke and people sitting around and telling stories and playing chess - it's a really lovely atmosphere'. (Daughter of a user).

But one of the most pronounced experiences of some who did not use cannabis was a feeling of exclusion:

'I used to feel excluded when I first came to Nimbin. People would offer me a joint and I'd say "No I don't smoke". They'd look at me and say "What do you mean you don't smoke? This is Nimbin". I felt that I was some kind of black sheep or a leper: he doesn't smoke and he can't be trusted. These days it just doesn't bother me'.

'They all have a smoke and then lie back; there's almost no conversation, just gazing at things. And sometimes if you come into that, they don't have any idea what you are talking about, they look at you as if you're an alien from the planet Mars or something. Then I feel very left out'.

Some non-using partners accepted this aspect of their partner's use, while others found their own way of coping:

'I used to feel really left out. But I don't any more. I just think it's my choice to be in these people's company. It's my choice as to whether I do or I don't.'

It should be emphasised that the intensive social use patterns described above were by no means typical of all regular cannabis users included in the study. Some restricted their use to particular times, locations or circumstances: e.g. evenings, after the children had gone to bed, or outside the house. Some non-using partners explained that their partner's use was not a problem for them because of self-imposed or negotiated limits of this kind. Nevertheless, it is clear that cannabis-related activities: growing or otherwise acquiring cannabis; associating with other users for 'sessions'; and using cannabis, were an important part of the lives of many users; and these activities often had considerable impact on their lifestyle and their relationships with partners, families and friends.

DISCUSSION

Social Context of Cannabis Use

Our data confirm the widely accepted view that there is a cannabis using subculture on the North Coast of New South Wales in which there are social networks of individuals who smoke cannabis daily, among which cannabis use is an integral and valued part of everyday life and social relationships. Within this subculture, the cultivation of cannabis is an important way of ensuring a regular personal supply of an expensive illegal commodity. For a substantial minority, cannabis cultivation is also a source of income, most often as a supplement to income from part-time work or social security payments.

The individuals who are part of this cannabis-using subculture are almost equally likely to be male and female who are in their middle thirties. They are better educated than their age peers, somewhat less likely to be employed, and if employed, they are more likely to be self-employed and working part-time. Unlike their peers who live in one of the large coastal cities of Brisbane, Melbourne or Sydney, these cannabis users live in a largely rural environment in a very pleasant part of the Eastern Coast of Australia.

Patterns of Cannabis Use

The users interviewed in this survey had a median of 19 years of at least weekly cannabis use, and 80% had a history of daily cannabis use at some time in their lives. Since most cannabis users in the broader population discontinue their use in their late 20s (Kandel & Logan, 1984), our sample contains an over-representation of that small minority of cannabis users who use the drug regularly for several decades. Our data are consistent with other epidemiological data (Kandel & Logan, 1984) in showing that such regular cannabis users are more likely than their peers to begin cannabis use earlier, to be cigarette smokers, and to have used a variety of other illicit drugs (see Donnelly & Hall, 1994).

The reasons that regular users give for using cannabis are similar to those offered by alcohol users, namely, that it relaxes, relieves tension and stress, and helps them to feel good and enjoy themselves. These reports are consistent with the fact that most cannabis use occurs in a social context with family and friends who are likely to be cannabis users.

Patterns of Other Drug Use

Recreational drug use in our sample was dominated by regular cannabis use but drug use was not confined to cannabis. Alcohol was regularly used by just under half, often in combination with cannabis, and it was used at hazardous levels by a substantial minority of both men and women. Tobacco smokers were over-represented in the sample, as one would expect from data on patterns of drug use. If cannabis is a "gateway" drug to other illicit drugs, as some have suggested (e.g. Walters, 1993), then tobacco should also be regarded as a gateway drug to cannabis use.

A past history of experimentation with a variety of other illicit drugs was also common, including 40% who had tried heroin at some time in their lives. This experimentation was generally in the users' past. Current use of other illicit drugs was much less common although participants had

used an average of one other illicit drug in the past month, most often an hallucinogen (such as LSD) or a psychostimulant, such as MDMA.

Cannabis Dependence

The most prevalent psychological consequence of long term cannabis use in the sample was dependence on the drug, as defined according to the criteria of the American Psychiatric Association Diagnostic and Statistical Manual or the International Classification of Diseases. The prevalence of cannabis dependence among study participants was 57% according to both sets of diagnostic criteria. The two sets of criteria were in good agreement with each other, and the number of dependence criteria that were met were correlated, as expected, with patterns of cannabis and other illicit drug use (within the restricted range of cannabis use patterns found in the sample).

The SDS measure of dependence which has proved useful in studies of dependence on heroin, cocaine and amphetamine did not identify as many of the sample as dependent, probably because of the limited domain of dependence symptoms that it assessed. This suggests that concern about craving and use which are a feature of dependence on injected drugs like as heroin, amphetamines and cocaine (Gossop *et al*, 1992; 1995), are less common experiences among cannabis users.

There was a marked discrepancy between the proportion of participants who met diagnostic ICD or DSM criteria for dependence and the proportion who believed that their cannabis use was a problem. Only a minority of those who met dependence criteria according to ICD-10 and DSM-III-R believed that they had a problem with their cannabis use. This is similar to findings in population surveys of alcohol dependence in which only a minority of persons who meet criteria for alcohol dependence regard their alcohol use as presenting a problem sufficiently serious to request help (Helzer & Canino, 1992).

Undoubtedly some cannabis users we interviewed who met criteria for dependence would reject the description of their cannabis use as dependent for a variety of reasons. Some may reject the diagnostic criteria that have been used to define cannabis dependence in DSM-III-R and ICD-10. Others may argue that although they may be dependent as defined by these criteria, the costs of their dependence are no worse than those of caffeine dependence in that cannabis use causes them few if any problems, and that they could discontinue their cannabis use with minimal difficulty or distress, *if they chose to do so*. These responses deserve to be investigated. We could, for example, ask a sample of long term users to cease their cannabis use for a period of weeks or months to see how difficult they find it to do so and to discover what effects their abstinence has on their well-being and everyday performance.

Other cannabis users may be sceptical about the validity of the concept of dependence as applied to cannabis. A common reason for such scepticism is the mistaken belief that the occurrence of a withdrawal syndrome on abstinence is a defining characteristic of dependence. It is not. A withdrawal syndrome does occur on the abrupt cessation of use for shorter acting drugs, such as, heroin and alcohol, but evidence suggests that many people can become dependent on these and other drugs in the absence of experiencing pronounced withdrawal symptoms, or using the drugs to relieve withdrawal symptoms. The realisation of this fact is reflected in the concept of the drug dependence syndrome now embodied in ICD-10 and DSM-III-R. Neither system of diagnosis

requires withdrawal symptoms, or the use of a drug to avert withdrawal symptoms, for the diagnosis of dependence. Instead, dependence is diagnosed if the person experiences three or more of a set of between six and nine predominantly symptoms of dependence. Although the occurrence of withdrawal symptoms is no longer required, there is nonetheless reasonable evidence for a cannabis withdrawal syndrome (Compton, Dewey & Martin, 1990).

Critics of the cannabis dependence concept may still justifiably argue about how many dependence criteria should be met before someone is classified as dependent. It may be, for example, that the current criteria are over-inclusive. After all, there is no necessity that the rule of three criteria that was used in defining alcohol and opiate dependence should be appropriate for cannabis dependence. This is a question for future research using standardised diagnostic interview schedules. It is more difficult to argue that the criteria are irrelevant since the more criteria of either ICD-10 or DSM-III-R that a user satisfied in our sample the more likely they were to regard their cannabis use as a problem.

It is also difficult to sustain a case that dependence criteria are of no consequence. In our sample, the more symptoms of cannabis dependence a person reported, the more symptoms of psychological distress they reported, and the greater their risk of reporting respiratory symptoms, such as, a persistent cough and a wheezy chest. These findings are consistent with the view that those who meet criteria for cannabis dependence find it more difficult to stop their use, even when it causes symptoms of ill health or psychological distress.

Health effects

The adverse health effects that occurred at a higher rate among study participants than in the general population were respiratory symptoms, such as, bronchitis, and long-term conditions attributable to accidental injury. The sample paradoxically had a significantly lower rate of long-term respiratory conditions (such as, asthma and emphysema) than the general population but higher rates of symptoms of chronic bronchitis. The increased rates of symptoms of chronic bronchitis have been reported by Tashkin and colleagues (Tashkin, 1993; Tashkin *et al*, 1990) in their studies of a cohort of long-term cannabis users. The low rate of long-term conditions is a more curious finding that may have arise because persons with long-term respiratory conditions may be less likely to become long-term cannabis smokers. It may also be a chance result given the large number of comparisons that were performed so it needs to be confirmed in other studies.

The main difficulty in attributing these elevated rates of respiratory symptoms and accidental injury to cannabis use is ruling out the possibility that both effects are due to other drug use, such as, tobacco use in the case of respiratory symptoms, and alcohol use in the case of accidental injury. Our data indicate that many long-term cannabis users also smoked tobacco and a substantial minority used alcohol in a potentially hazardous way. Since alcohol and tobacco are known to be risk factors for each of these health outcomes it is impossible to attribute responsibility for these outcomes to cannabis use alone.

Other research (see Hall *et al*, 1994) suggests, however, that we should beware of drawing reassuring conclusions from the interpretive problems posed by the confounding between cannabis and alcohol and tobacco use. The fact that these health effects cannot be unambiguously attributed to cannabis use alone does not mean that cannabis use can be exculpated as a cause of respiratory

symptoms or accidental injury. The fact that most cannabis smokers also smoke tobacco and that many cannabis users also use alcohol means that the relevant research questions are more properly formulated as follows: To what extent does chronic heavy cannabis smoking exacerbate the respiratory damage caused by cigarette smoking? To what extent does concurrent cannabis and alcohol use increase the risk of accidents when someone drives or uses machinery after using these drugs?

These questions deserve to be researched because there is good evidence that cannabis use may amplify the health risks of both tobacco and alcohol. Tashkin's and colleagues work indicates that persons who smoke cannabis and tobacco have a higher rate of respiratory symptoms than persons who smoke tobacco or cannabis alone (Tashkin, 1993). Moreover, cannabis and tobacco smoke may have adverse synergistic effects. It may be, for example, that THC suppresses activity of the immune system in the lung, thereby reducing the host's ability to deal with bacterial infection, and to suppress tumour growth in the lung (Tashkin, 1993). Similarly, laboratory evidence indicates that the psychomotor impairment produced by alcohol and cannabis is independent and additive (Chesher, 1986). This suggests that persons who drive after using both drugs are likely to be more impaired, and probably at increased risk of motor vehicle accidents.

Psychological and motivational effects

Our sample of long-term cannabis users did not display a markedly elevated rate of psychological distress as assessed by the GHQ-12, the SCL-90, and the Coopersmith self-esteem scale. Within the sample, however, there were relationships between symptoms of psychological distress and patterns of cannabis use and cannabis dependence. As expected, the more symptoms of dependence a person reported the more symptoms of psychological distress that they reported. More surprising was the finding that the quantity of cannabis used in a day had a small and statistically significant *negative* relationship with psychological distress, that is, the more cannabis was typically used, the fewer the symptoms of psychological distress that were reported. This finding is consistent with the hypothesis that some long-term cannabis users are using cannabis to self-medicate their depression and anxiety. It receives some support from the observations made in some collateral interviews that abstinence from cannabis produced marked worsening of depression and anxiety. It has not been previously reported, however, and since the relationship is modest it should be replicated before a substantive interpretation is placed upon it.

The most contentious of the putative effects of long term cannabis use is its effect on the motivation of users. Our data are as equivocal on this question as the findings of many earlier studies: they can be interpreted as supporting or failing to support the claimed motivational deficits in chronic cannabis smokers, depending upon which parts of the evidence are highlighted (Hall *et al*, 1994).

Many critics of cannabis use would see their views confirmed in the life-styles of the long term cannabis users that we studied. On their view, these long term cannabis users were university educated people who have made little use of their abilities or education; they were under-employed, or at least, arguably under-using their education and ability, by working part-time; and they spent a substantial part of their time using cannabis and growing it for their personal use.

The study participants would no doubt argue that the way they spend their time reflects the lifestyle choices that they, and many of their non-cannabis using friends, have made. On their view, cannabis plays an important role in their lives but their way of life is not a simple consequence of their regular cannabis use. They would probably point out that they continue to be actively involved in family and community life, and many play a role in local politics and community affairs. It was also true that long term cannabis use did not prevent some study participants from holding responsible professional or managerial positions.

The interviews we conducted with partners and others provided an opportunity to assess the motivational effects of long term cannabis use from the perspective of non-using friends and family. Here too the evidence was also equivocal. Some noticed an effect on motivation; others did not, and some reported the opposite effect. If motivational effects exist, the probable explanation for these conflicting reports is that debilitating motivational effects are relatively rare, even among very heavy users.

A cross-sectional study of this type is in any case unable to determine in which direction any causal relationships might operate between way of life and cannabis use, even assuming that the relationship is as simple as the hypothesis of an "amotivational" syndrome suggests. These issues can only be teased out with difficulty in longitudinal studies of cannabis use and its consequences in representative samples of young people followed from adolescence into adult life (e.g. Kandel et al, 1986; Newcombe & Bentler, 1988). Such studies have indicated that a large part of the association between cannabis use and academic and occupational under-achievement is attributable to the fact that those with poorer performance in school and the workforce are those who are most likely to become involved in regular cannabis use (Donnelly & Hall, 1994). In any case, survey research cannot decide between the competing moral evaluations of the lifestyles of the long-term cannabis users that we studied.

Legal Encounters

Half of the study participants had come to police notice for cannabis use and cultivation and they were at higher risk of being arrested for cannabis offences than the general community. The interpretation of this fact, like that of the evidence on motivational effects, will depend upon the competing perspectives of supporters and opponents of the current laws prohibiting the use of cannabis.

The police and supporters of the current law would argue that the higher rates of arrest among our participants appropriately reflects their higher rate of law-breaking by using and cultivating cannabis for personal use and sale. Indeed, given the frequency and duration of their cannabis use, and the extent of their involvement in cannabis cultivation, the police have failed to detect many more offences than those for which the participants have been arrested and convicted.

From the perspective of cannabis users and growers the issue is very different. They can see no justification for the prohibition of cannabis and hence, for them, any police attention is an unjustified intrusion in their way of life. There is no doubt that relations between some police involved in enforcing drug laws (the Drug Enforcement Agency in particular) and the cannabis using population of Northern New South Wales are poor. This is in large part because of the frequency with which cannabis users and growers come to police attention, and the ways in which

some are dealt with by the police during these encounters. These problems were exemplified for many respondents by the annual cannabis eradication operations conducted each year in the north coast by the NSW Police Service's Drug Enforcement Agency. These military style operations involve helicopters, four wheel drive vehicles and personnel from the Plantation Unit. There has been considerable concern expressed about these operations by both users and the general public.

Study Limitations

Before discussing the implications of our findings we need to consider three issues that bear upon the conclusions that can be drawn from the study. These are: the representativeness of the sample; the validity of the self-report data on subject characteristics, patterns of drug use, health and psychological status; and the limitations of cross-sectional research in making causal inferences from associations observed between self-reported cannabis use and psychological and health outcomes.

Sample Representativeness

It is difficult when studying any illegal activity to ensure that one has obtained a random or representative sample of those who engage in the behaviour. One cannot, for example, draw up a sampling frame of persons who use cannabis and take a random sample because those who engage in it sensibly take steps to evade detection. Obtaining a representative sample of regular cannabis users by undertaking household survey would be prohibitively expensive. Because of the rarity of regular cannabis users in the population (less than 6%, Donnelly & Hall, 1994) over 3000 households would need to be visited to obtain a sample of 200 or more regular cannabis users (assuming that all users were prepared to identify themselves and agreed to be interviewed).

Given these problems research on regular cannabis users (and other illicit drug users) has often been conducted on convenience samples of users recruited through social networks of regular cannabis users known to the researchers. These samples are often described as "snowball" samples because they depend upon regular users who have been interviewed recommending further persons for interview. This method of sampling was used in the present study for reasons of cost and feasibility. Efforts were made to contact respondents through a variety of different starting points in as wide a range of social networks as possible.

It is difficult to say whether this method succeeded in obtaining a representative sample of long-term cannabis users in North Coast New South Wales. All that can be said with confidence is that our sample shares many of the personal and social characteristics of long-term users known to persons who are knowledgeable about cannabis use in the region. Even if our sample is not necessarily representative, it comprises a substantial number of long term cannabis users from the area. It has also been obtained in such a way that there is no reason to believe it is biased in favour of users who are either unusually healthy or ill. Our sampling strategy may have introduced some bias in the direction of recruiting less troubled cannabis users. Ultimately, however, this question can only be answered imperfectly by the degree to which our findings are replicated in samples of long-term cannabis users who are recruited in similar ways in other locations.

Data Validity

In any study of drug users that relies upon self-reported patterns of drug use and health and psychological status the question must be asked: to what extent may respondents have under-reported their cannabis use and minimised personal and health problems that may be related to their cannabis use? Any such under-reporting need not be conscious or deliberate. This is a pertinent possibility in the present study for several reasons. First, many questions dealt with illegal and stigmatised activities (e.g. criminal convictions, driving while intoxicated) about which individuals may be less than honest for understandable reasons. Second, just over half of the sample met criteria for cannabis dependence. Some have argued (e.g. Miller & Gold, 1989) that drug dependent people lack insight into their drug use and its impact on their lives, and the lives of their family and friends. Third, a substantial minority of the sample have a strong personal and, in some cases, a political commitment to the legalisation of cannabis, which may lead them to present their cannabis use and its personal and health consequences in the most favourable light.

The usual guarantees of anonymity and confidentiality were given to minimise the risks of respondents not feeling able to be as forthcoming as they might about illegal and stigmatised activities. Special efforts were also made to establish the credibility of the project and to use as peer interviewers persons who were well known and respected in the area. We believe that these measures maximised our respondents' preparedness to be honest and that was the view of the interviewers in the ratings made of respondent honesty at the end of each interview. It is worth noting too that many of these cannabis users were genuinely interested in the possible long term effects of their cannabis use.

The validity of the self-report data was also supported by a substantial number of consistencies between our data and the findings of other studies of cannabis users, and drug users more generally, in the international research literature. Among the more interesting of these consistencies were the following. First, the respondents' patterns of involvement with alcohol, tobacco and illegal drugs was consistent with what has been reported in the USA in prospective studies which have followed large cohorts of adolescents into adult life, namely, that persons who are regular cannabis users in adult life are more likely to have initiated their cannabis use earlier than their peers, are more likely to be cigarette smokers, and are more likely to have used a variety of other illicit drugs (Kandel & Logan, 1984). Second, the self-reported prevalence of major mental disorders was also about what would be expected in a population survey, and the types of mental disorder most often reported as leading to hospitalisation were, as expected, major depression and psychosis (Hall, 1996).

Third, self-reported use of medical services was also similar to that in the general population, as reported in the National Health Survey. The symptoms with the highest rates of self-reported prevalence were respiratory symptoms, which is as expected given the high rates of tobacco and cannabis smoking in the sample. Fourth, the proportion of the sample meeting criteria for cannabis dependence was within expectation from epidemiological studies in the USA (Hall *et al.*, 1994). All these consistencies between our findings and the research literature suggest that our self-report data are as valid as self-report data on drug use and its consequences can be.

Even when respondents are successfully reassured about the confidentiality of the information they provide, self-report data has its limitations. Human beings are not always able to accurately

estimate the frequency with which they engage in behaviour, such as, how much and how often they typically use drugs. This phenomena has been well documented with alcohol use where self-reported consumption in population surveys typically accounts for between a third and a half of the alcohol that has been sold (Pernanen, 1974). Under-estimation of consumption is more likely with black market drugs that do not come in standard amounts or strengths, and when a quantity of a drug may be shared between a group of people. The same sort of underestimation may also occur with self-reported rates of health and psychological problems and individuals will vary in their attribution of such problems to their drug use.

A methodological novelty in the present study was the collection of data from non-cannabis using partners and friends of users in the sample. This data was not collected with the purpose of checking upon the reports of individuals in the survey, but discrepancies between the perspectives of users and collaterals about cannabis use and cannabis-related problems raise questions about the extent of under-reporting. Since no reports can be regarded as gold standards all that we can say is that there may be discrepancies between the perspectives of cannabis users and their non-using partners, family members and friends. In general, the reports of cannabis users and collaterals were remarkably consistent, with the main differences reflecting the different evaluations of users and non-users of the effects of cannabis on interpersonal relationships.

Study Design Limitations

A cross-sectional survey of a snowball sample of long-term cannabis users is limited in the type of inferences that can be drawn from the study findings. First, the study lacked a true comparison group, that is, a group of non-cannabis users recruited from the North Coast population in the same manner and asked about their personal history, drug use (other than cannabis), health and well-being, and social adjustment, in the same way as the long-term cannabis users. The recruitment of such a comparison sample, although highly desirable on methodological grounds, would have added substantially to the expense and difficulty of doing this study. In the absence of a comparison group we have had to rely on comparisons with population data, such as that collected in the National Health Survey and the Australian Census, or data collected on special samples, e.g. data on the AUDIT questionnaire in studies on the North Coast.

Second, the use of such comparative data has its limitations. The obvious ones are differences in sampling (e.g. random samples of households versus convenience samples) and in the method of administration (e.g. as part of a survey of health status as against part of a survey of drug use).

Third, the present sample size provided limited statistical power to detect differences in rates of health outcomes between a general population survey and a sample of 243 long-term cannabis users. The probability of detecting small to moderate increases in rates of disorders among cannabis users in our sample was low for rare events, such as cancers and psychosis (see Appendix B). Statistical power was also modest for detecting small increases in more common types of disorders. This means that our failure to detect an increase in psychoses, for example, does not provide evidence of the absence of a psychosis risk among long-term cannabis users. Our study sample had the greatest chance of detecting substantial increases (e.g. a doubling or more) in the rate of events with a probability of occurrence in the range of 0.10 to 0.30.

Fourth, caution must be exercised in interpreting the associations we observed between cannabis

use and reported health effects. Cross-sectional and retrospective data do not permit causal inferences to be drawn from correlations between self-reported cannabis use and health status. For example, the apparent associations we found between long-term cannabis use and self-reported respiratory symptoms and accidental injury are open to alternative explanations that cannot be distinguished in our data. Among these the most plausible is that the associations are due to other drug use (e.g. tobacco use in the case of respiratory symptoms, and alcohol in the case of accidental injuries).

Fifth, our study did not provide a comprehensive survey of all hypothesised health effects of long-term cannabis use. We did not, for example, attempt to assess long term cognitive impairment because of the difficulty of doing so outside the laboratory (Hall *et al*, 1994). So our failure to report these health effects should not be interpreted as evidence that they did not occur.

Sixth, the way we recruited our sample ensures that they provide an underestimate of the shorter term adverse effects of cannabis, such as, anxiety, panic, and dysphoria. A type of "healthy user effect" may have operated in that those who experience unpleasant short term effects of cannabis are less likely to be found among long term users of the drug.

All these limitations must be kept in mind in interpreting our data. Nonetheless, for all their imperfections our study provides the first Australian data on the characteristics of long-term cannabis users, their patterns of cannabis and other drug use, and their psychological and health status. The data also serve the role of generating hypotheses about potential social, psychological and health consequences of long-term cannabis use that can be more rigorously tested in future research.

Implications for Future Research

An exploratory study like the present inevitably raises many questions that are deserving of further research. From these we have identified the following as the research questions of greatest priority from the point of view of cannabis users' health and the well-being of the community.

The first question is how representative North Coast cannabis users are of long-term cannabis users elsewhere in Australia? They are arguably a special population who live in an area well known for its high prevalence of cannabis use and cultivation, and they live within small communities that are very tolerant of cannabis use. It remains to be seen to what extent their experiences can be generalised to long-term cannabis users who live in urban areas. One might expect, for example, that greater variations in the availability and price of cannabis that are likely to be experienced by urban cannabis users may create more problems among these users. Such users will also be part of a social environment that includes a majority of non-users of cannabis who may be intolerant of their use. This suggests that it would be useful to study patterns of cannabis use and their personal and social consequences among long-term cannabis users recruited in Sydney and other major metropolitan areas. Such a study is currently being conducted by the National Drug and Alcohol Research Centre.

A second set of questions concerns the potential seriousness of cannabis dependence as a personal and public health issue (Hall, 1995a). How prevalent is cannabis dependence among long-term users? How serious a problem is such dependence for these users? Is it associated with adverse

APPENDICES

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APPENDIX A: QUANTIFICATION OF CANNABIS USE

Quantifying the amount of any drug that a person uses is a difficult task. Even in the case of tobacco where cigarettes come in standard packages with standard numbers of cigarettes, a smoker can probably only estimate the number of cigarettes smoked on an "average" day with a probable margin of error of half a packet, and then with nicotine and tar content crudely categorised.

Quantifying typical alcohol consumption is even more difficult. Alcoholic beverages come with varying alcohol content. The variations in alcohol content are only partially circumvented by using "standard drink" units which attempt to produce approximately equal alcohol content for different beverage types. In Australia these units comprise 10 g of ethanol but different standard drinks are used in different countries (Miller, Heather and Hall, 1991). In Australia, the concept of a "standard drink" has been widely used in public health campaigns (e.g. campaigns against drink driving) but research suggests that most drinkers over-estimate the size of a standard drink by 50% (Stockwell et al, 1992), thereby seriously under-estimating their typical quantity. It is unsurprising then that typical self-reported alcohol consumption in community surveys accounts for only 30% to 50% of all alcohol sold.

The problems that arise in quantifying tobacco and alcohol use are compounded in the case of an illicit drug like cannabis. There is no blackmarket standard quantity of cannabis and no standardisation of THC potency of cannabis. Blackmarket cannabis that is seized by police is not regularly assayed for THC content so there is not even an indication of the range of THC content. Inquiries were made during fieldwork for the study about assaying the THC content of cannabis in North Coast New South Wales. These inquiries revealed that it would be legally difficult for the research workers to obtain samples of cannabis for analysis without exposing themselves to the risk of criminal charges for receiving illegal drugs.

Difficulties in quantifying the cannabis use of long-term cannabis users would not end even if THC content of the cannabis that they typically used was known. There are marked differences between users in the size of cannabis "joints" that are smoked, in whether tobacco is added and, if so, how much tobacco is used. For those who use waterpipes, there is no standard size of "cone" (the pipe bowl that holds the cannabis to be smoked). Moreover, some individuals share their cannabis with others while others use alone, and there are variations in smoking technique that affect the amount of THC and tar that different users extract from cannabis of the same potency.

All these problems preclude anything but the crudest quantification of the amount of cannabis that a user "typically" uses. In the current study a combined measure of frequency and quantity of cannabis used per day was used as a crude proxy of quantity. The cannabis unit chosen was a "joint" since this was the form most commonly used in the sample. When a cannabis user shared with others the number of joints used was divided by the number of person sharing.

When the user smoked cannabis by waterpipe, a crude equivalence of three cones per joint was assumed. An estimate of the number of cones in the quantity of marijuana leaf in a NIDA marijuana joint indicated that the number of cones per joint varied between 3 and 10, depending upon the size of the "cone" used in the waterpipe. The lower figure was used in our estimate because bonging appears to be a more efficient way of delivering the THC in cannabis to the lung, largely because there is no loss from side-stream smoke.

This crude quantification is defensible on the grounds that it is likely that the rank order of individuals' cannabis consumption will be preserved, even if, as is likely, the actual (unknown) quantity of THC that is consumed may be under- or overestimated.

APPENDIX B: STATISTICAL POWER OF THE STUDY

The current study involves comparing rates of various health outcomes in a sample of 243 cannabis users with information (where available) on comparable rates in the Australian and North Coast populations. Some idea of the statistical power of such comparisons can be obtained by examining the sample size required to detect a specified increase in the odds ratio (OR) of a health outcome among 243 cannabis users compared to the Australian and North Coast populations for health outcomes that vary in prevalence. Table B.1 shows the sample size required to detect a specified difference (d) between the sample proportion and the assumed population proportion or base rate (p) for a two-sided type 1 error probability of 0.05 and a statistical power of 0.90. These estimates have been derived from table 4d in Lemeshow, Hosmer, Klar and Lwanga (1990).

The base rates of the health outcomes vary between 0.01 and 0.50. A rate of 0.01 is the approximate expected rate of psychoses in the Australian community while a rate of 0.20 reflects the rate of common respiratory symptoms. The bottom row of the table indicates the approximate OR that a sample size of 243 (the number of current cannabis users in the sample) has a 90% chance of detecting as statistically significant at the 0.05 level.

Table B.1: Sample sizes required to detect a difference d between varying base rates for a type 1 error rate of 0.05 and a statistical power of 0.90

	Base Rate				
d	0.01	0.05	0.10	0.20	0.30
0.01	1403	5353	9784	17061	22234
0.02	428	1423	2524	4324	5597
0.03	221	668	1155	1947	2504
0.04	91	395	667	1109	1417
0.05	70	264	438	718	912
0.10	36	79	122	189	233
OR	4.00	2.50	1.75	1.40	1.30

This table reveals that a sample size of 243 provides reasonable power to detect increases in the odds of an outcome of 2.0 or greater for base rates of 0.10 or greater. For base rates of 0.01 or less a sample size of 243 only has a chance of detecting increased odds of occurrence if they are greater than 4.

These figures provide an optimistic assessment of the study's statistical power because they only apply to univariate comparisons of ORs. If an elevated OR is found the sample size of 243 provides only a limited ability to statistically adjust for possible confounding variables because the sample size in cells of the resulting multivariate contingency tables soon become small, producing large standard errors and wide confidence intervals around estimates of ORs.

APPENDIX C: KEY INFORMANT INTERVIEW SCHEDULE

Subject recruitment.

who are the users?

where do they live?

how best to recruit subjects, eg media, advertising, word of mouth.

what sub-groups of users are there?

what social networks are there and how do we access them? Feasibility of snowball sampling.

confidentiality: how best to approach potential subjects.

Cannabis use.

substances used and terminology.

modes of use (cones, joints, bongs etc).

patterns of use including chaotic use.

how to define users for inclusion in the sample.

how to measure extent of use.

use with other substances (how prevalent are 'pure' cannabis users?).

cannabis potency: how much does potency vary? How important is this as an issue for the research?

The users:

what issues are important for users (eg reliable advice on health effects; coping with irregularities in supply; using around children; dependence; problems with illegality).

what issues are likely to be important for users in the interview context, eg confidentiality, anonymity.

perceived motives for using (eg relaxation, coping, social experience, therapeutic).

Growers

how far do the categories of growers and users overlap?

where do users get their supplies?

how do users who grow their own dispose of their surplus?

is violence potentially an issue when growing it?

The local community

how prevalent is cannabis use in the local community?

what is the attitude of the local community towards cannabis use: is it seen as a problem?

do local community attitudes need to be taken into account in planning the fieldwork, (eg a low-key approach when recruiting subjects?)

Police-related issues

what is the police's involvement with local cannabis users?

what is the policy of the local police towards cannabis use?

APPENDIX D: CONSENT FORM FOR INTERVIEW**Southern Cross University.****Project: Cannabis Use in a Rural Area****Consent Form.**

Thank you for volunteering to participate in this project. We are interested in finding out more about the nature and consequences of long-term cannabis use, by interviewing a number of users living in the North Coast area of NSW.

The study involves your taking part in an interview and completing some questionnaires. We will be asking questions about your experiences with cannabis, about when and where you use it, and the good and bad effects it has on your life. We will also ask some questions about your health, your social life, how you feel generally, and your opinions about the drug laws, together with any experiences you may have had with the police and the courts.

The information gathered in this study is strictly confidential. Only those persons directly involved in the study will have access to the data. You don't need to sign this consent form with your real name and you will not be personally identifiable in any way.

I have read the above statement which explains the nature and object of the investigation to my satisfaction. I have been given the opportunity to ask any questions and I understand that I can withdraw from the study at any time. I understand that I will be paid the sum of \$30 on completion of the interview.

Signature.....

Signature of investigator.....

APPENDIX E: USER INTERVIEW SCHEDULE

Number.

Time Interview Started:.....

Section 1: Eligibility Filter

- 1 At what age did you first try marijuana? Age
- 2 And when did you start to use it regularly? Age
- 3 How many years, overall, have you been a regular user? Years
- 4 When did you last use cannabis/hash?
- | | |
|------------------------------|---|
| Today | 1 |
| Yesterday | 2 |
| Within the last week | 3 |
| One week ago | 4 |
| Within the last month | 5 |
| Less than 3 months ago | 6 |
| Less than 6 months ago | 7 |
| Less than a year ago | 8 |
| A year ago or more | 0 |
| Don't know | 0 |
- 5 On average, how often do you or did you use cannabis/hash?
- | | |
|-----------------------------|---|
| Daily | 1 |
| 4-6 times a week | 2 |
| 2-3 times a week | 3 |
| Once a week | 4 |
| Less often than once a week | 5 |
| Don't know | 0 |
- If less than daily, ask: Has there ever been a period in your life when you used cannabis on a daily or almost daily basis for at least a month?*
- | | |
|------------|-------------------------|
| Yes | 1 |
| No | 2 ---> Go to Q6. |
| Don't know | 0 |
- If respondent is or has been a daily user ask: Altogether, adding up the different months when you used daily, for how much of your lifetime would you estimate that you have used cannabis daily or almost daily?*
- Months — Years
- 6 Which age group are you in?
- | | |
|------------|---|
| 19 | 1 |
| 20-24 | 2 |
| 25 or over | 3 |
| Don't know | 0 |
- 7 Record gender:
- | | |
|--------|---|
| Male | 1 |
| Female | 2 |

Now decide on eligibility of respondent: eligible current user; eligible ex-user; not eligible.
If respondent does not meet the criteria for interview, explain this to him/her, thank them and terminate the interview. (The interview fee is to be paid only to respondents who are eligible to be interviewed and have completed the full interview).

Section 2: Cannabis Use

Last occasion of use

8 I want to ask you about the *last cannabis you used*, not counting today.

When did you last use cannabis, not counting today?

Days ago

0 Where did you use it?

<i>In my own home</i>	1
<i>In someone else's home</i>	2
<i>Outdoors</i>	4
<i>At work</i>	8
<i>In a car/other vehicle</i>	16
<i>In a public place (eg shop, cafe, pub)</i>	32
<i>Other</i>	64
<i>Don't know</i>	0

10 Who was present on that occasion? (Multiple choice allowed).

<i>No-one</i>	1
<i>Spouse/partner/boy or girl-friend</i>	2
<i>Other friend/friends</i>	4
<i>Relative(s)</i>	8
<i>Work-mate(s)</i>	16
<i>A child/children</i>	32
<i>Stranger(s) -give details</i>	64
<i>Don't know</i>	0

12 What kind of cannabis was it? (Multiple choice allowed).

<i>Heads</i>	1
<i>Leaf</i>	2
<i>Hash</i>	3
<i>Mixture of leaf and heads</i>	4
<i>Other (write in)</i>	5
<i>Don't know</i>	0

13 How did you take it? (Multiple choice allowed).

<i>Joint, cannabis only</i>	1
<i>Joint, cannabis/tobacco</i>	2
<i>Bong/ waterpipe</i>	4
<i>Chillum</i>	8
<i>Ate it (cookie, cake, with pasta etc)</i>	16
<i>Other (write in)</i>	32
<i>Don't know</i>	0

14 How much did you have on that occasion? (Get respondent to specify as joints, cones, weight etc)

.....

15 What effects did it have on that particular occasion? I mean, how did you feel while you were smoking/taking it?

.....

16 How did you feel a couple of hours later?

.....

psychological, health and social consequences? How easily can cannabis dependent people cease their cannabis use? What is the best way to assist those who experience difficulty in stopping, to stop using cannabis? Answers to these questions require more detailed and rigorous studies of the prevalence of dependence symptoms and their correlates among long-term users. They also require intervention studies to evaluate the best ways of helping dependent cannabis users to stop their cannabis use. A specific finding that deserves to be replicated is the suggestion that cannabis may be used by some to self-medicate symptoms of anxiety and depression.

A third set of issues concern the severity and seriousness of the most prevalent health effects of cannabis use. In terms of our findings and analyses of the probable public health impact of cannabis use (Hall, 1995a), the outcomes of highest research priority are the risks of respiratory disease and accidental injury. An examination of the seriousness of the respiratory risks of long term cannabis smoking will require case-control studies of persons with respiratory diseases, especially younger adults. An examination of the seriousness of the risks of accidental injury is much more difficult for reasons well described elsewhere (Hall *et al*, 1994).

A fourth set of issues concerns the scale of the illicit cannabis market. Our data indicate that a substantial minority of long-term cannabis users are involved in the cultivation and sale of cannabis in the North Coast of New South Wales. The scale of this market would repay more detailed study. How large a market is there for the cultivation and distribution of cannabis on the North Coast of New South Wales? Approximate estimates to date of the scale of the Queensland cannabis market (e.g. Advisory Committee on Illicit Drugs, 1993) suggest that there is a large cannabis black market in Australia. A more systematic economic analysis of the cannabis market in the North Coast and other similar regions would provide a better estimate of the scale and organisation of this cannabis market.

Policy Implications

When considered in conjunction with other research the study findings have a number of implications for health educational information directed at cannabis users and the broader community.

First, the misconception that regular cannabis users rarely use other drugs needs to be dispelled. The majority of regular cannabis users in this and other studies (e.g. Kandel *et al*, 1986) are regular tobacco smokers, and a substantial minority drink alcohol in hazardous amounts.

Second, the major health risks of cannabis probably arise from the amplification of the health risks of tobacco and alcohol which so many regular cannabis users also use. Cannabis users should be discouraged from drawing the falsely reassuring conclusion that cannabis use carries few risks because some of its probable health effects may be explained in part by tobacco and alcohol use.

Third, current cannabis users and potential cannabis users need to be realistically more educated about the risks of developing dependence on the drug. Such information needs to be factual in establishing that there is such a risk without impairing the credibility of the message by exaggerating the size of the risk, e.g. by suggesting that it is comparable to that of developing dependence on heroin. Further research may provide more credible estimates of this risk.

The debate about the legal status of cannabis use makes it difficult to give health advice that is credible to cannabis users and older adults (Hall & Nelson, 1995). Marked intergenerational differences of opinion about the health risks of cannabis (Hall & Nelson, 1995) mean that adolescents will be sceptical of any perceived overstatement of risk, while their parents will want to emphasise the risks as a reason for avoiding its use. Alarmist advice about the risks of cannabis use should probably be avoided. The probable adverse psychological effects of chronic cannabis use are sufficient to give pause to thoughtful adolescents, and it is probably counterproductive to exaggerate risks, even in the good cause of discouraging cannabis use by the young.

Harm minimisation

It is recommended that objective information on possible negative consequences of cannabis use be made widely available and easily accessible to regular cannabis users who said that they would welcome information on possible health consequences of their use, if it was objective and presented in an unbiased manner. Some said they were ignorant of the possible consequences of cannabis use, while others were certain there were no negative effects of use. It is particularly important that members of the medical profession are provided with such information (e.g. Hall, 1995b). Although over half the sample had raised their cannabis use with a medical practitioner very few had been advised about the possible health consequences of their use.

The major implications for reducing the harm of cannabis use among current users are:

1. Two thirds of cannabis users in the study were current tobacco users. Users of cannabis and tobacco, either as a mixture or separately, are probably at a higher risk of developing respiratory diseases and cancer of the lung and respiratory tract than users of either substance alone. It is therefore advisable for cannabis users not to smoke both tobacco and cannabis, and preferable if they smoked neither substance.
2. Most (87%) of the female cannabis users in the study had become pregnant some time after starting to use cannabis. Almost one in four (22%) of these had continued to use cannabis while they were pregnant. Since smoking in pregnancy is associated with low birth-weight and may have other adverse effects on the foetus, female users should be advised to stop using cannabis for the duration of their pregnancy (Hall *et al*, 1994).
3. Using cannabis is for most users a social activity and joints and bongs are often shared. As some infectious diseases, such as, influenza, herpes simplex, and tuberculosis, may be transmitted through saliva, the sharing of paraphernalia should be discouraged.
4. Driving a motor vehicle whilst using cannabis or just after use was very common: almost 90% of users had driven at some time after using it. There is some evidence that psychomotor impairment resulting from driving while "stoned" may be offset by driving at a slower speed and taking fewer risks because the user is more aware of his or her impairment. Driving is nonetheless a potentially high-risk activity and emergencies can arise in which no amount of precautionary behaviour can overcome. Moreover, since it is the lives of other road users that cannabis users put at risk, we should be educating them not to drive when experiencing the acute effects of cannabis.

5. The special risks of driving after using cannabis and alcohol together should be better appreciated by cannabis users. One in four cannabis users had driven a vehicle within the previous month after using cannabis and alcohol together. Research indicates that driving after using cannabis and alcohol in combination is riskier than driving after using either alone (Chesher, 1986). It is recommended that there should be a campaign to educate cannabis users about the potential dangers of driving shortly after using cannabis and in particular, about the dangers of driving after using cannabis and alcohol together.

6. There was a higher rate of long-term conditions attributable to accidents among the sample than among the general population. Although it is not clear from the data the extent to which cannabis may have been a contributory cause of these accidents, users should be advised that there may be an increased accident risk while or after using cannabis to even the most experienced of users. This advice may be particularly appropriate for those users in rural areas who operate machinery after using cannabis.

7. Over half the cannabis users reported symptoms of a respiratory ailment, and most of them were concerned about the possible effects of smoking cannabis on their lungs and respiratory system. The most common mode of ingestion for all of the users was smoking. Although the majority preferred joints, 16% usually used bonges or waterpipes. The preferred method of ingestion from the perspective of reducing respiratory risks would be oral. The main problem with the acceptability of this recommendation is that it is difficult for oral users to titrate their dose of THC.

8. Although the cannabis users in the sample did not report higher use of amphetamines, hallucinogens or opioids when cannabis was unobtainable, many did report an increase in alcohol use. Comment from both users and non-using partners and others suggests that the substitution or partial substitution of alcohol for cannabis can lead to negative behaviours not observed with cannabis use, e.g. aggressive and violent behaviour.

Conclusions

A cannabis using subculture exists in the rural parts of the North Coast of New South Wales. Within this culture the daily use of cannabis is an integral part of everyday life and social relationships, and the cultivation of cannabis is a major part of the lives of many of these users, many of whom have some involvement in the region's cannabis economy. For most of these users, cannabis is used for similar reasons (for its relaxing and euphoric effects), and in much the way (in a social setting with friends and families), that alcohol is used by many Australians. Within this North Coast cannabis culture, many long-term cannabis users function well, even if they live very different lives from their urban peers.

Nearly 60% of the sample met criteria for cannabis dependence (as defined in the two major international classification systems) but less than a quarter perceived their cannabis use to be a problem. This may have been because they ensured that they had an adequate supply of cannabis by growing their own, and because they lived in a community that was tolerant of regular cannabis use. From the perspective of many of these cannabis users, the major disadvantage of their cannabis use was that its illegality exposed them to the risk of being arrested by the police.

Apart from dependence on cannabis, the health and psychological effects that showed elevated rates were more like those of chronic tobacco smoking (symptoms of respiratory disease) and hazardous alcohol use (accidental injury). The evidence of motivational effects of long-term cannabis use were more equivocal but there was evidence that those who were dependent showed more symptoms of psychological distress. The findings on the health effects of cannabis are consistent with the conclusions of the recent review of the evidence on the health and psychological effects of cannabis use (Hall *et al.*, 1994). The clearest health risks of cannabis use represent a combination of some of the adverse health effects of alcohol (which is also used for its intoxicating effects) and tobacco with which cannabis shares the route of administration.

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119 Yes: Why might this be?

Access of services

120 Who would you go to if you needed help to do with cannabis? Anyone else?

122 Why would you choose that person?

123 Have you ever had any treatment or counselling for anything to do with drug use, including cannabis?
Yes 1
No 2 Go to Q 128 -->
Don't know 0

124 If Yes: Which drug or drugs did you have treatment for? (Multiple response allowed)

Tobacco	1
Alcohol	2
Marijuana	4
Sedatives/Barbs	8
Amphetamines	16
Cocaine	32
Hallucinogens (LSD, magic mushrooms, etc)	64
Inhalants	128
Ecstasy/Nexus	256
Heroin	512
Other (Specify)	1024
Don't know	0

125 What type of treatment did you have?

In-patient detox	1
Residential rehab	2
Psychiatric Unit	4
Private Psychiatrist/Psychologist	8
Community Health Centre	16
Methadone program	32
Alternative health care practitioner - consultation.....	64
Other.....	128
Don't know	0

126 Get details of the three most recent: when; where; duration of treatment.

127 How useful was that/ were they ?

Very useful	1
Somewhat useful	2
Neither useful or not useful	3
Not really useful	4
Not at all useful	5
One/Some useful, other(s) not	6
Don't know	0

128 *If respondent has not received treatment for cannabis use, ask:* Have you ever spoken to anyone like a doctor or other health practitioner about your marijuana use?

- Yes 1
- No 2 **Go to Q137 -->**
- Don't know 0

129 *If Yes:* When was this/how long ago was it?

- Within the last month 1
- 1-6 months ago 2
- 6-12 months ago 3
- Over 12 months ago 4
- Don't know 0

130 What were the circumstances? Was it:

- In a hospital 1
- In the course of a regular checkup 2
- Whilst receiving advice/treatment for an illness or medical condition 4
- Whilst receiving counselling 8
- Other 16
- Don't know 0

132 How did the subject of your marijuana use come up?

.....

133 How did he/she react to your use of marijuana?

.....

134 Was he/she helpful to you in relation to your marijuana use?

- Yes 1
- No 2
- Don't know 0

135 *If Yes, in what way?*

.....

136 *If No, why not?*

.....

137 What health risks do you think there might be in using cannabis? *Do not prompt.*

.....

138 Has smoking cannabis had any negative long-term effects on your general health? *(Prompt: what about a persistent cough/sore throat, infections, or a generally run-down feeling?)*

- Yes 1
- No 2
- Don't know 0

139 *If Yes: What effects?*

.....

Female Respondents Only

- 140 Have you ever been pregnant?
Yes 1
No 2 **Go to Q 145->**
Don't know/Not sure 0
- 142 Did you cut down or stop using marijuana when you were pregnant?
Yes, stopped altogether 1
Yes, cut down 2
Varied - Yes with one/some, No other (s) 3
No 4
Don't know 0
- 143 What about breastfeeding?
Yes, stopped altogether 1
Yes, cut down 2
Varied - Yes with one/ some, No other(s) 3
No 4
Not applicable- didn't breastfeed 5
Don't know 0
- 145 What about around the time that you have your period? Does the amount of marijuana you have, or the way you take it, vary then?
Yes 1
No 2
Don't know 0
- 146 *If Yes: how does it vary?*

- 147 Is there any change around that time in the effect - I mean, is the kind of high you get different at that time? Does it affect your mood?

All Respondents

- 148 Do you consider your use of cannabis to be a problem?
Yes 1
No 2
Don't know 0
- 149 *If Yes: Why do you think it's a problem? (Prompt: In what ways?)*
- 150 *If No: How would you know if it was a problem?*

- 152 Now for some experiences that may have happened to you in connection with your use of marijuana. For each item, tell me if it has happened to you in the last 12 months.
- Did you keep on using cannabis although you had a health problem that was caused or made worse by it?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 153 Have you found that using cannabis sometimes makes you depressed, uninterested in things, suspicious or distrustful?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 154 If Yes: Did you keep using cannabis even though you found it had that effect?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 155 Have you felt a very strong urge or desire to use cannabis?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 156 Have you used cannabis for much longer than you intended to?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 157 Have you spent a lot of time using cannabis, or getting over its effects, or on doing things to get it?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 158 Have you started using cannabis when you had decided not to?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 159 Did you ever think your marijuana use was out of control? (Read out choices:)
- | | |
|-------------------------|---|
| Never or almost never | 1 |
| Sometimes | 2 |
| Often | 3 |
| Always or nearly always | 4 |
| Don't know | 0 |
- 160 Did the prospect of missing a smoke/toke make you very anxious or worried? (Read out choices)
- | | |
|-------------------------|---|
| Never or almost never | 1 |
| Sometimes | 2 |
| Often | 3 |
| Always or nearly always | 4 |
| Don't know | 0 |
- 162 Did you worry about your cannabis use? (Read out choices)
- | | |
|-------------------|---|
| Not at all | 1 |
| A little | 2 |
| Quite a lot | 3 |
| A great deal | 4 |
| Don't know | 0 |

163 Did you wish you could stop? (*Read out choices*)

<i>Never or almost never</i>	1
<i>Sometimes</i>	2
<i>Often</i>	3
<i>Always or nearly always</i>	4
<i>Don't know</i>	0

164 How difficult would you find it to stop or go without?(*Read out choices*)

<i>Not difficult</i>	1
<i>Quite difficult</i>	2
<i>Very difficult</i>	3
<i>Impossible</i>	4
<i>Don't know</i>	0

SDS SCORE:

165 Have you ever tried to stop or cut down on your use of marijuana but found you couldn't?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

166 *If Yes: What did you do? (Prompt: Did you go to anyone for advice or help?)*

<i>Just cut down/stopped</i>	1
<i>Went to GP</i>	2
<i>Visited other health care professional</i>	4
<i>Other</i>	8
<i>Don't know</i>	0

167 Have you felt sick or found yourself shaking when you cut down or stopped using cannabis?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

168 Have you ever taken cannabis to get over the bad after-effects of using cannabis?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

169 *If R has not tried to cut down/stop or did not seek help to cut down/stop, ask:*
How might someone go about cutting down or stopping?

.....

170 How would you rate the effects your use of cannabis or hash^v has had on your life during the past 12 months? Would you say:

<i>More harm than good</i>	1
<i>More good than harm</i>	2
<i>Harm & good about equal</i>	3
<i>Don't know...</i>	0 ..

Now go to Emotions self-completion Questionnaire --->

Emotions Questionnaire.

PART I DIRECTIONS: Use the list below to answer the following question: **In General, how happy or unhappy do you usually feel?** Check the *one* statement below that best describes *your average happiness*.

- | | | |
|--------------------------|----|--|
| <input type="checkbox"/> | 10 | Extremely happy (feeling ecstatic, joyous, fantastic!) |
| <input type="checkbox"/> | 9 | Very happy (feeling really good, elated!) |
| <input type="checkbox"/> | 8 | Pretty happy (spirits high, feeling good) |
| <input type="checkbox"/> | 7 | Mildly happy (feeling fairly good and somewhat cheerful) |
| <input type="checkbox"/> | 6 | Slightly happy (just a bit above neutral) |
| <input type="checkbox"/> | 5 | Neutral (not particularly happy or unhappy) |
| <input type="checkbox"/> | 4 | Slightly unhappy (just a bit below neutral) |
| <input type="checkbox"/> | 3 | Mildly unhappy (just a little low) |
| <input type="checkbox"/> | 2 | Pretty unhappy (somewhat "blue", spirits down) |
| <input type="checkbox"/> | 1 | Very unhappy (depressed, spirits very low) |
| <input type="checkbox"/> | 0 | Extremely unhappy (utterly depressed, completely down) |

PART II DIRECTIONS: Consider your emotions a moment further. *On the average*, what percent of the time do you feel happy? What percent of the time do you feel unhappy? What percent of the time do you feel neutral (neither happy nor unhappy)? Write down your best estimates, as well as you can, in the spaces below. Make sure the three figures add up to equal 100%.

ON THE AVERAGE:

The percent of time I feel happy	<input type="checkbox"/> <input type="checkbox"/> %
The percent of the time I feel unhappy	<input type="checkbox"/> <input type="checkbox"/> %
The percent of the time I feel neutral	<input type="checkbox"/> <input type="checkbox"/> %
TOTAL	100 %
Combination Score:	<input type="checkbox"/> <input type="checkbox"/>

Section 3: Psychological/Health Variables

Now may I ask you some questions about how you feel generally, and about your general state of health.

First, I'd like you to use this list (*show Sheet 2*) to answer the following question:

200 In general, how happy or unhappy do you usually feel? Check the *one* statement below that best describes *your average happiness*.

(*Get respondent to endorse one of the statements in Section 1 . Enter score:*

Consider your emotions a moment further. On the average, what percent of the time do you feel happy? What percent of the time do you feel unhappy? What percent of the time do you feel neutral (neither happy nor unhappy)? Write down your best estimates, as well as you can, in the spaces below. Make sure the three figures add up to 100%.

(*Get respondent to complete Section 2. Enter the three percentages below.*)

The percent of the time I feel happy %

The percent of the time I feel unhappy %

The percent of the time I feel neutral %

Combination score:

201 So generally, would you say that you are very happy, happy, unhappy or very unhappy?

- Very happy* 1
- Happy* 2
- Unhappy* 3
- Very unhappy* 4
- Don't know* 0

202 In general, would you say that your health is excellent, good, fair or poor?

- Excellent* 1
- Good* 2
- Fair* 3
- Poor* 4
- Don't know* 0

203 We should like to know if you have had any medical complaints, and how your health has been in general, *over the past few weeks*. Please answer ALL the questions on these pages (*hand respondent Sheets 3 and 4*) simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past. It is important that you try to answer ALL the questions.

204 Here is a list of problems and complaints that people sometimes have. (*Hand respondent Sheet 5 - SCL 90*). Read each one carefully and select one of the numbers at the top of the list (*point to scale*) that best describes how much discomfort that problem has caused you during the past seven days - **including today**. Please do not skip any items. If you change your mind, cross the first number out and write the right one next to it. Ask me if you have any questions. (*When respondent has finished, check to make sure all items have been endorsed. Enter interview number at top of sheets*).

Subscale scores

- | | | |
|--|---|---|
| SOM <input type="checkbox"/> <input type="checkbox"/> | O - C <input type="checkbox"/> <input type="checkbox"/> | I - S <input type="checkbox"/> <input type="checkbox"/> |
| DEP <input type="checkbox"/> <input type="checkbox"/> | ANX <input type="checkbox"/> <input type="checkbox"/> | HOS <input type="checkbox"/> <input type="checkbox"/> |
| PHOB <input type="checkbox"/> <input type="checkbox"/> | PAR <input type="checkbox"/> <input type="checkbox"/> | PSY <input type="checkbox"/> <input type="checkbox"/> |
| GSI <input type="checkbox"/> <input type="checkbox"/> | PST <input type="checkbox"/> <input type="checkbox"/> | PSDI <input type="checkbox"/> <input type="checkbox"/> |

General Health Questionnaire.

We should like to know if you have had any medical complaints, and how your health has been in general, *over the past few weeks*. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past. It is important that you try to answer ALL the questions.

HAVE YOU RECENTLY:

a) been able to concentrate on whatever you are doing?

- | | |
|-----------------------------|---|
| <i>Better than usual</i> | 1 |
| <i>Same as usual</i> | 2 |
| <i>Less than usual</i> | 3 |
| <i>Much less than usual</i> | 4 |

b) lost much sleep over worry?

- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |

c) felt that you are playing a useful part in things?

- | | |
|-------------------------------|---|
| <i>More so than usual</i> | 1 |
| <i>Same as usual</i> | 2 |
| <i>Less useful than usual</i> | 3 |
| <i>Much less useful</i> | 4 |

d) felt capable of making decisions about things?

- | | |
|---------------------------|---|
| <i>More so than usual</i> | 1 |
| <i>Same as usual</i> | 2 |
| <i>Less so than usual</i> | 3 |
| <i>Much less capable</i> | 4 |

e) felt constantly under strain?

- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |

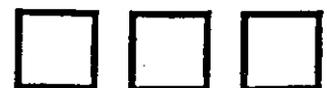
f) felt that you couldn't overcome your difficulties?

- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |

- g) been able to enjoy your normal day-to-day activities?
- | | |
|-----------------------------|---|
| <i>More so than usual</i> | 1 |
| <i>Same as usual</i> | 2 |
| <i>Less so than usual</i> | 3 |
| <i>Much less than usual</i> | 4 |
- h) been able to face up to your problems?
- | | |
|-----------------------------|---|
| <i>More so than usual</i> | 1 |
| <i>Same as usual</i> | 2 |
| <i>Less able than usual</i> | 3 |
| <i>Much less than usual</i> | 4 |
- i) been feeling unhappy and depressed?
- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |
- j) been losing confidence in yourself?
- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |
- k) been thinking of yourself as a worthless person?
- | | |
|-------------------------------|---|
| <i>Not at all</i> | 1 |
| <i>No more than usual</i> | 2 |
| <i>Rather more than usual</i> | 3 |
| <i>Much more than usual</i> | 4 |
- l) been reasonably happy all things considered?
- | | |
|-----------------------------|---|
| <i>More so than usual</i> | 1 |
| <i>About same as usual</i> | 2 |
| <i>Less so than usual</i> | 3 |
| <i>Much less than usual</i> | 4 |

Below you will find a list of statements about feelings. If a statement describes how you **USUALLY** feel, put an X in the column "Like Me". If a statement does not describe how you usually feel, put an X in the column "Unlike Me". There are no right or wrong answers. Begin at the top and mark all 25 statements.

- | Like
Me | Unlike
Me | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Things usually don't bother me |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. I find it very hard to talk in front of a group |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. There are lots of things about myself I'd change if I could |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. I can make up my mind without too much trouble. |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. I'm a lot of fun to be with. |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. I get upset easily at home. |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. It takes me a long time to get used to anything new. |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. I'm popular with persons my own age. |
| <input type="checkbox"/> | <input type="checkbox"/> | 9. My family usually considers my feelings. |
| <input type="checkbox"/> | <input type="checkbox"/> | 10. I give in very easily. |
| <input type="checkbox"/> | <input type="checkbox"/> | 11. My family expects too much of me. |
| <input type="checkbox"/> | <input type="checkbox"/> | 12. It's pretty tough to be me. |
| <input type="checkbox"/> | <input type="checkbox"/> | 13. Things are all mixed up in my life. |
| <input type="checkbox"/> | <input type="checkbox"/> | 14. People usually follow my ideas. |
| <input type="checkbox"/> | <input type="checkbox"/> | 15. I have a low opinion of myself. |
| <input type="checkbox"/> | <input type="checkbox"/> | 16. There are many times when I would like to leave home. |
| <input type="checkbox"/> | <input type="checkbox"/> | 17. I often feel upset with my work. |
| <input type="checkbox"/> | <input type="checkbox"/> | 18. I'm not as nice looking as most people. |
| <input type="checkbox"/> | <input type="checkbox"/> | 19. If I have something to say, I usually say it. |
| <input type="checkbox"/> | <input type="checkbox"/> | 20. My family understands me. |
| <input type="checkbox"/> | <input type="checkbox"/> | 21. Most people are better liked than I am. |
| <input type="checkbox"/> | <input type="checkbox"/> | 22. I usually feel as if my family is pushing me. |
| <input type="checkbox"/> | <input type="checkbox"/> | 23. I often get discouraged with what I am doing. |
| <input type="checkbox"/> | <input type="checkbox"/> | 24. I often wish I were someone else. |
| <input type="checkbox"/> | <input type="checkbox"/> | 25. I can't be depended upon. |



17 Did you have anything else while you were taking/smoking it, or just afterwards? (*Probe for caffeine, tobacco, alcohol, other drugs. Include mixtures of tobacco & marijuana.*)

.....

Typical Use.

18 You've told me about the *last* time you used cannabis, apart from today. Now I want to ask about how it *usually* is for you when you use it. Was that last occasion you've just told me about different from usual?

Yes	1
No	2
Don't know	0

19 If Yes, how was it different?

.....

20 You told me you use cannabisdays a week. Is that correct? (*If not, correct earlier statement*)

22 For how long would you say this has been your typical pattern of use?

Less than one month	1
One month up to six months	2
Six months up to twelve months	3
1 to 5 years	4
More than 5 years	5
Don't know	0

23 And how does that compare with the amount you used to smoke/take?

It's more now	1
Hasn't changed/about the same	2
Less now	3
Other (say what).....	4
Don't know	0

24 How do you usually use cannabis? (*Multiple choice allowed*).

Joint, cannabis only	1
Joint, cannabis/tobacco	2
Bong/ waterpipe	4
Chillum	8
Ate it (cookie, cake, with pasta etc)	16
Other	32
Don't know	0

25 How much or how many (*joints, bongs, cones etc*) do you smoke/take per day? *Specify which. Probe for size of joint, etc.*

.....

26 So how much would you usually use in a week?

.....

27 What kind would that be, usually?

Heads	1
Leaf	2
Hash	4
Mixture of heads and leaf	8
Other (say what).....	16
Don't know	0

28 When do you usually smoke it/ take it? (Prompt: before breakfast; after dinner; reward for task/job finished; with friends/partner; watching TV; lunch break, etc)

29 Do you usually smoke/take it alone or with others?
Alone 1
In company 2
It varies (say how)..... 3
Don't know 0

30 If in company:
With friends, outside home 1
With friends at home 2
At home with immediate family 4
With workmates/colleagues 8
Other 16
Don't know 0

32 And thinking back over the time you've been using cannabis, has that changed?
Yes 1
No 2
Other(say what)..... 3
Don't know 0

33 If Yes: How used it to be?

Reasons for use

34 Why do you currently smoke cannabis? Give up to 3 reasons.

35 Are any of these reasons different from when you first started using it regularly?
Yes 1
No 2
Don't know 0

36 If Yes: Why did you previously use cannabis?

The Experience

37 I know it's hard to describe, but try and tell me in your words what the high you get these days feels like? (Prompt: What do you experience when you smoke/take it?)
Probe for: Mood (elated, giggly, quiet/introspective, etc)
Altered perception of eg. listening to music, eating, sex
Distortion of senses, eg bodily sensations, heaviness of limbs, perceptual changes, time distortion.
.....

38 What do you like most about using cannabis?

- 39 How often do you experience this?
- | | |
|-------------------------|---|
| <i>Hardly ever</i> | 1 |
| <i>Sometimes</i> | 2 |
| <i>Most of the time</i> | 3 |
| <i>All the time</i> | 4 |
| <i>Don't know</i> | 0 |
- 40 What beneficial or therapeutic effects do you experience from using cannabis? (*Prompt: What else?*)
-
- 42 Have you ever used cannabis for medicinal or medical reasons?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 43 *If Yes, Get details*.....
- 44 What do you like *least* about using cannabis?
-
- 45 And in what other ways does marijuana affect you that you don't like or find difficult? (*Do not prompt*)
-
- 46 One thing that has sometimes been said about marijuana use, particularly heavy use, is that it can result in the user not feeling motivated to do much and there can be a loss of interest in achieving. From your own experience, would you say there is any truth in that?
- | | |
|-------------------|---|
| <i>Yes</i> | 1 |
| <i>No</i> | 2 |
| <i>Don't know</i> | 0 |
- 47 Have you observed that cannabis sometimes has that kind of effect on other users?
- | | |
|-------------------|---|
| <i>Yes</i> | 1 |
| <i>No</i> | 2 |
| <i>Don't know</i> | 0 |
- 48 Do you sometimes go about your day-to-day tasks whilst, or just after, you've had some cannabis?
- | | |
|--------------------------|---|
| <i>Never</i> | 1 |
| <i>Occasionally</i> | 2 |
| <i>Sometimes</i> | 3 |
| <i>Often</i> | 4 |
| <i>Most/all the time</i> | 5 |
| <i>Don't know</i> | 0 |
- 49 What (else) do you usually do while you're having/ smoking cannabis?
-
- 53 Do you ever do (other) physical activities when you're high ? (*Prompt: eg swimming, sports, manual labour*).
- | | |
|-------------------------------------|---|
| <i>Never</i> | 1 |
| <i>Occasionally</i> | 2 |
| <i>Sometimes</i> | 3 |
| <i>Often</i> | 4 |
| <i>Most /all the time</i> | 5 |
| <i>Not applicable- don't do any</i> | 6 |
| <i>Don't know</i> | 0 |

54 What effect does that have for you?

.....

55 Does marijuana have different effects on you in different situations?

Yes	1
No	2
Sometimes	3
Don't know	0

56 Tell me about that

.....

57 Do you find that different strains or batches have different effects? (Prompt: What? Get respondent to specify effects)

.....

58 Is the high you get nowadays different from the highs you used to get?

Yes	1
No	2
Sometimes	3
Don't know	0

59 If Yes: How?

.....

60 What does the next day feel like? Is it just like any other day or is it different from times when you haven't been smoking? (Prompt: For example, are you a little wasted or tired? are you more relaxed? jumpy and nervous?)

.....

Supply

61 Now I want to ask you some questions about how easy it is for you to get your supplies of cannabis. Over the past year, where have you got most of your supplies of cannabis/ hash?

Grow my own	1
Buy from friends/neighbours	2
Buy from dealers	4
Spouse/partner supplies it	8
Get it as payment for jobs I do for people	16
Swap it for other drugs	32
Gift	64
Other (What?).....	128
Don't know	0

62 If grower: How much of what you use do you grow yourself?

All	1
Almost all	2
Most of it	3
About half	4
Less than half	5
It varies (say how).....	6
Don't know	0

63 If buyer: How easy is it to score/ obtain your supplies of cannabis?

Always available	1
Usually available	2
Seasonal	3
Often have difficulty	4
Other (What?).....	5
Don't know	0

64 *If buyer:* Over the past three months, how much have you paid for how much?

.....

65 What proportion of your total income would you say you spent on cannabis?

.....

Other Drug Use

66 Now I'm going to ask you some questions on your use of other drugs. I'll emphasise again that the information you give me is completely confidential. *Ask respondent:* Have you ever used any of these drugs? (See list below) Each time R. answers 'YES', ask: Have you used it in the last month? If 'Yes, ask: How many times? Do not include use on day of interview.

Drug class	Ever used	In last month	No. of times with cannabis
TRANQUILISERS (valium, serapax, mogadon, benzos)			
COCAINE			
AMPHETAMINES (Speed, uppers, pep pills)			
HEROIN			
OTHER OPIATES (Opium, morphine, methadone)			
INHALANTS (Glue, paint, petrol, thinners, etc)			
HALLUCINOGENS (trips, acid, LSD, magic mushrooms,)			
DESIGNER DRUGS (ecstasy, nexus)			
ALCOHOL (beer, wine, spirits)			

66a **NOW GO THROUGH LIST AGAIN. FOR EACH DRUG SCORED 'YES' ASK:**
How many times have you taken with cannabis in the last month? Write in.

67 Alcohol Use:

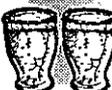
If respondent uses alcohol, ask them to complete Form 1 : AUDIT (overleaf). Audit Score:
Otherwise go to next question.

68 When cannabis isn't so easily available (eg because of a police bust, or your usual supplier isn't available) do you find that your use of other drugs changes? Does it increase, decrease, or stay the same?
(Ask respondent about each drug endorsed 'in last month' in Q:66)

	Increases	Decreases	Same	Don't Know
Tranquilisers	1	2	3	0
Cocaine	1	2	3	0
Amphetamines...	1	2	3	0
Heroin	1	2	3	0
Other opiates	1	2	3	0
Inhalants	1	2	3	0
Hallucinogens	1	2	3	0
Alcohol	1	2	3	0
Tobacco	1	2	3	0
None	1	2	3	0



A STANDARD DRINK CONTAINS 10grams OF PURE ALCOHOL
Each of these is 1 STANDARD drink...

2 MIDDIES LITE Low Alcohol beer.  570ml=1 Standard Drink.	1 MIDDY of ordinary beer.  285 ml=1 Standard Drink.	1 GLASS of WINE  120ml=1 Standard Drink.	1 NIP of SPIRITS  30 ml=1 Standard Drink.	1 GLASS of PORT or SHERRY  60 ml=1 Standard Drink.
--	--	--	---	--

Each of these is equal to 1 1/2 STANDARD drinks...

1 STUBBIE bottle of ordinary beer.  375ml=1 1/2 Standard Drinks.	1 CAN of ordinary beer.  375ml=1 1/2 Standard Drinks.	1 SCHOONER of ordinary beer.  427ml=1 1/2 Standard Drinks.
---	--	---

PLEASE PLACE A TICK IN THE BOX NEXT TO YOUR ANSWER.

- 1** How often do you have a drink containing alcohol?

never
 monthly or less
 once a week or less
 2 to 4 times a week
 5 or more times a week
- 2** How many "standard" drinks containing alcohol do you have on a typical day when you are drinking?

1
 2
 3 or 4
 5 or 6
 7 or more
- 3** How often do you have six or more drinks on one occasion?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 4** How often during the last year have you found that you were not able to stop drinking once you had started?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 5** How often during the last year have you failed to do what was normally expected from you because of drinking?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 6** How often during the last year have you needed a drink in the morning to get yourself going after a heavy drinking session?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 7** How often during the last year have you had a feeling of guilt or remorse after drinking?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 8** How often during the last year have you been unable to remember what happened the night before because you had been drinking?

never
 less than monthly
 monthly
 weekly
 daily or almost daily
- 9** Have you or someone else been injured as a result of your drinking?

no
 yes, but not in the last year
 yes, during the last year
- 10** Has a relative, a friend, a doctor or other health worker been concerned about your drinking or suggested you cut down?

no
 yes, but not in the last year
 yes, during the last year



69 How often do you use cannabis and alcohol on the same occasion?
Daily/most days 1
Once a week or more 2
Once a month or more 3
Less than once a month 4
Never 5 **Go to Q 71.---**
Don't know 0

70 What are the effects of cannabis when you use it with alcohol?

71 Have you ever used cannabis to help you cope with or change the effects of any other drug?
Yes 1
No 2
Don't know 0

72 If Yes, probe for details (Prompts: What about alcohol? Do you find cannabis helps when hanging out for other drugs? Does it help in coming down after speed?):

73 I would now like to ask you some questions about smoking. Do you currently smoke tobacco on its own (other than in a joint)?
Yes 1
No 2 -----> **Go to Q 79**
Don't know 0

74 How old were you when you started smoking tobacco regularly? [][]

75 Do you usually smoke packet cigarettes or roll-your-own cigarettes?
Packet cigarettes 1
Roll-your-own cigarettes 2
Both 4
Other..... 8
Don't know 0

76 How many cigarettes do you usually smoke a day? [][][]

77 Have you ever tried to give up smoking cigarettes?
Yes 1
No 2
Don't know 0

78 Do you smoke more cigarettes when cannabis is in short supply?
Yes 1 }
No 2 } **Now go to Q84-->**
Not applicable/Don't know 0

79 If not current smoker: Have you ever smoked tobacco regularly?
Yes 1
No 2 --> **Go to Q 83 -->**
Don't know 0

80 How old were you when you started smoking tobacco regularly? Age

81 How many cigarettes did you usually smoke a day? Number

- 82 How old were you when you last gave up smoking cigarettes? Age
- 83 Do you smoke cigarettes when cannabis is in short supply?
- | | |
|--|---|
| Yes | 1 |
| No | 2 |
| Not applicable - never in short supply | 3 |
| Don't know | 0 |
- 84 Do you ever smoke joints which have a mixture of tobacco and marijuana?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 85 If Yes: What proportion of all the cigarettes you smoke would be a mixture? %
- 86 Do you smoke a joint like a chillum?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 89 How often do you share a joint or a bong with other people?
- | | |
|--------------------|---|
| Always share | 1 |
| Almost always | 2 |
| Usually | 3 |
| Sometimes | 4 |
| Occasionally | 5 |
| Never | 6 |
| Other (What?)..... | 7 |
| Don't know | 0 |

Self-Control Strategies

- 93 Some people make rules for themselves about when they feel it's alright to use cannabis and when they try to avoid using it. Do you have any rules or guidelines about when it's okay for you to smoke marijuana and when it's not?. For example, do you limit your use in certain situations or on certain occasions?
-
-
-
- 94 Does the amount of cannabis you smoke vary, or is it fairly consistent? (Probe for circumstances when it might vary, eg time of year; after a bust.)
-
- 95 Do you ever go on a cannabis binge?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 96 If Yes: When might that happen?
-

97 Have you found that your usual amount of cannabis has much less effect on you than it once did?
 Yes 1
 No 2
 Don't know 0

If Yes: tell me about that

98 Has your preference changed for particular types of cannabis over the time you've been using it? (Probe for how, eg more potent forms - heads rather than leaf, preference for sensimilla, etc)

99 Do you ever drive a car *while* you're having cannabis? How does that feel ? (If R does not drive, Go To Q103---->)
 Never 1
 Occasionally 2
 Sometimes 4
 Often 8
 Don't know 0

.....

100 Do you ever drive a car *soon after* you've had some cannabis? How does that feel ?
 Never 1
 Occasionally 2
 Sometimes 4
 Often 8
 Don't know 0

.....

101 Do you think using cannabis just before or while you're driving makes any difference to your driving performance? In what ways?

102 In the last three months, how often have you driven a vehicle after having had some alcohol and cannabis together?
 Daily/most days 1
 Once a week or more 2
 Once a month or more 3
 Less than once a month 4
 Never 5
 Don't know 0

103 Have there been times when you've operated machinery (Prompt: eg chainsaw/powertools/gun) when you've been high on cannabis?
 Yes 1
 No 2
 Don't know 0

104 If Yes: Give details:

105 If Yes to 'drive' or 'operate machinery' ask: Have you ever had any accident or mishap on any of these occasions?
 Yes 1
 No 2
 Not applicable 3
 Don't know 0

106 Have you ever had any (other) accident or injury as a result of cannabis use (eg, fall.)?
 Yes 1
 No 2
 Don't know 0

107 If Yes: Get details:

108 Over the past year, when you have been offered some cannabis, have you ever refused it?
 Yes 1
 No 2
 Don't know 0

109 If Yes: Why did you refuse? (Do not prompt - multiple response allowed)
 I wanted to limit my use 1
 I was abstinent at the time 2
 Couldn't afford it 4
 Didn't feel like it/wrong situation/wrong time 8
 Didn't know/was suspicious of the person offering it 16
 Didn't like what was offered (ie quality) 32
 Was driving a vehicle at the time 64
 Was working at the time 128
 Other 256
 Don't know 0

110 What do you do when you run out?

112 Have there been times when you stopped using cannabis altogether?
 Yes 1
 No 2
 Don't know 0

113 If Yes, What was the longest period you stopped for?

114 What were your main reasons for stopping?

115 Why did you start using again?

116 You told me you usually have (amount) of cannabis in a session/day/week? Do you have a limit? What? (Write in).

117 Why?

118 Does the limit vary from time to time?
 Yes 1
 No 2
 Don't know 0

INSTRUCTIONS:

Below is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one

number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask about them.

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	
1	0	1	2	<input checked="" type="radio"/>	4	Bodyaches

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	0	1	2	3	4	Headaches
2	0	1	2	3	4	Nervousness or shakiness inside
3	0	1	2	3	4	Repeated unpleasant thoughts that won't leave your mind
4	0	1	2	3	4	Faintness or dizziness
5	0	1	2	3	4	Loss of sexual interest or pleasure
6	0	1	2	3	4	Feeling critical of others
7	0	1	2	3	4	The idea that someone else can control your thoughts
8	0	1	2	3	4	Feeling others are to blame for most of your troubles
9	0	1	2	3	4	Trouble remembering things
10	0	1	2	3	4	Worried about sloppiness or carelessness
11	0	1	2	3	4	Feeling easily annoyed or irritated
12	0	1	2	3	4	Pains in heart or chest
13	0	1	2	3	4	Feeling afraid in open spaces or on the streets
14	0	1	2	3	4	Feeling low in energy or slowed down
15	0	1	2	3	4	Thoughts of ending your life
16	0	1	2	3	4	Hearing voices that other people do not hear
17	0	1	2	3	4	Trembling
18	0	1	2	3	4	Feeling that most people cannot be trusted
19	0	1	2	3	4	Poor appetite
20	0	1	2	3	4	Crying easily
21	0	1	2	3	4	Feeling shy or uneasy with the opposite sex
22	0	1	2	3	4	Feelings of being trapped or caught
23	0	1	2	3	4	Suddenly scared for no reason
24	0	1	2	3	4	Temper outbursts that you could not control
25	0	1	2	3	4	Feeling afraid to go out of your house alone
26	0	1	2	3	4	Blaming yourself for things
27	0	1	2	3	4	Pains in lower back
28	0	1	2	3	4	Feeling blocked in getting things done
29	0	1	2	3	4	Feeling lonely
30	0	1	2	3	4	Feeling blue
31	0	1	2	3	4	Worrying too much about things
32	0	1	2	3	4	Feeling no interest in things
33	0	1	2	3	4	Feeling fearful
34	0	1	2	3	4	Your feelings being easily hurt
35	0	1	2	3	4	Other people being aware of your private thoughts
36	0	1	2	3	4	Feeling others do not understand you or are unsympathetic
37	0	1	2	3	4	Feeling that people are unfriendly or dislike you

NOT AT ALL

A LITTLE BIT

MODERATELY

QUITE A BIT

EXTREMELY

HOW MUCH WERE YOU DISTRESSED BY:

38	0	1	2	3	4	Having to do things very slowly to insure correctness
39	0	1	2	3	4	Heart pounding or racing
40	0	1	2	3	4	Nausea or upset stomach
41	0	1	2	3	4	Feeling inferior to others
42	0	1	2	3	4	Soreness of your muscles
43	0	1	2	3	4	Feeling that you are watched or talked about by others
44	0	1	2	3	4	Trouble falling asleep
45	0	1	2	3	4	Having to check and double-check what you do
46	0	1	2	3	4	Difficulty making decisions
47	0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
48	0	1	2	3	4	Trouble getting your breath
49	0	1	2	3	4	Hot or cold spells
50	0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
51	0	1	2	3	4	Your mind going blank
52	0	1	2	3	4	Numbness or tingling in parts of your body
53	0	1	2	3	4	A lump in your throat
54	0	1	2	3	4	Feeling hopeless about the future
55	0	1	2	3	4	Trouble concentrating
56	0	1	2	3	4	Feeling weak in parts of your body
57	0	1	2	3	4	Feeling tense or keyed up
58	0	1	2	3	4	Heavy feelings in your arms or legs
59	0	1	2	3	4	Thoughts of death or dying
60	0	1	2	3	4	Overeating
61	0	1	2	3	4	Feeling uneasy when people are watching or talking about you
62	0	1	2	3	4	Having thoughts that are not your own
63	0	1	2	3	4	Having urges to beat, injure, or harm someone
64	0	1	2	3	4	Awakening in the early morning
65	0	1	2	3	4	Having to repeat the same actions such as touching, counting, or washing
66	0	1	2	3	4	Sleep that is restless or disturbed
67	0	1	2	3	4	Having urges to break or smash things
68	0	1	2	3	4	Having ideas or beliefs that others do not share
69	0	1	2	3	4	Feeling very self-conscious with others
70	0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
71	0	1	2	3	4	Feeling everything is an effort
72	0	1	2	3	4	Spells of terror or panic
73	0	1	2	3	4	Feeling uncomfortable about eating or drinking in public
74	0	1	2	3	4	Getting into frequent arguments
75	0	1	2	3	4	Feeling nervous when you are left alone
76	0	1	2	3	4	Others not giving you proper credit for your achievements
77	0	1	2	3	4	Feeling lonely even when you are with people
78	0	1	2	3	4	Feeling so restless you couldn't sit still
79	0	1	2	3	4	Feelings of worthlessness
80	0	1	2	3	4	The feeling that something bad is going to happen to you
81	0	1	2	3	4	Shouting or throwing things
82	0	1	2	3	4	Feeling afraid you will faint in public
83	0	1	2	3	4	Feeling that people will take advantage of you if you let them
84	0	1	2	3	4	Having thoughts about sex that bother you a lot
85	0	1	2	3	4	The idea that you should be punished for your sins
86	0	1	2	3	4	Thoughts and images of a frightening nature
87	0	1	2	3	4	The idea that something serious is wrong with your body
88	0	1	2	3	4	Never feeling close to another person
89	0	1	2	3	4	Feelings of guilt
90	0	1	2	3	4	The idea that something is wrong with your mind

205 The next questions are about use of health services. Have you been admitted to hospital in the last twelve months?
 Yes 1
 No 2 Go to Q208 -->
 Don't know 0

206 If Yes: Not counting any times you just went to the outpatients clinic or casualty, how many times have you been admitted to hospital in the last twelve months?
 Number

207 What medical conditions were you in hospital for?
 (Interviewer: prompt for condition if a treatment or symptom is reported. Write in.)

1
 2
 3

208 The next few questions refer to the last two weeks (apart from when you were admitted to hospital). Have you visited casualty or the outpatients clinic at a hospital about your own health in the last two weeks?
 Yes 1
 No 2 Go to Q212 -->
 Don't know 0

209 How many times have you visited casualty or the outpatients clinic at a hospital about your own health in the last two weeks? (Apart from when you were admitted to hospital)
 Number

210 I want to talk to you about (this/your most recent) visit.
 What medical conditions did you have which caused you to visit casualty or outpatients?
 (Interviewer: prompt for conditions if a treatment or symptom is reported. Write in.)

1
 2

211 How did you feel about the treatment you received there?

212 (Apart from when you (stayed in hospital) (or) (visited casualty or the outpatients clinic), have you consulted a doctor or specialist about your own health in the last two weeks?
 Yes 1
 No 2
 Don't know 0

213 If No: When was the last time you consulted a doctor about your own health?
 Less than 3 months ago 1
 3 months to less than 6 months ago 2
 6 months to less than 12 months ago 3
 12 months ago or more 4
 Never 5
 Don't know 0

214 If Yes: (Apart from when you were in hospital, visited casualty or the outpatients clinic)
 How many times have you consulted a doctor about your own health in the last two weeks?
 Number

215 I want to talk to you about (this/your most recent) consultation. What were all the conditions you had which caused you to consult the doctor? (Interviewer: prompt for condition if a **treatment or symptom** is reported. Write in.).

1

2

3

216 Was the doctor consulted a general practitioner or a specialist?

General Practitioner 1
Specialist 2
Don't know 0

217 How did you feel about the treatment you received there?

.....

218 In the last 12 months have you consulted any of the following people about your own health:

A chiropractor? 1
An osteopath? 2
A naturopath? 4
A herbalist? 8
An acupuncturist? 16
A dietitian? 32
A psychic or spiritual healer 64
None of these 128
Other 256
Don't know 0

219 I want to talk to you about (this/your most recent) consultation. What medical conditions did you have which caused you to consult the (specify OHP from Question above). (Interviewer: prompt for a condition if a **treatment or symptom** is reported. Write in.)

1

2

220 In the last two weeks have you stayed away from your work / from school/college or university because of any illness or injury?

Yes 1
No 2
Not applicable 3
Don't know 0

222 What was the illness or injury? (Interviewer: prompt for condition if a **treatment or symptom** is reported. Write in).

1

2

223 On how many days in the last two weeks did you stay away from (work/school/college or university)?

Number

224 I now have some questions about **long term** conditions, that is, conditions that have lasted, or are likely to last, for **six months or more**. Please include any conditions you may have already mentioned. (Interviewer: If answer is "Yes" to any of the following ask: What condition do you have? Record the condition(s) in the space provided before reading out the next category.)

Have you ever been diagnosed for a psychiatric problem?(eg depression, schizophrenia, manic depressive psychosis)

- Yes 1
- No 2 Go to Q 227----->
- Don't know 0

225 If Yes: What?

226 If Yes: Have you ever been admitted to a mental hospital?

- Yes 1
- No 2
- Don't know 0

227 Do you have any long term conditions that recur from time to time such as asthma or hayfever?

- Yes 1
- No 2
- Don't know 0

228 If Yes: specify

229 (Do you have) any conditions which you have had for a long time and may have adjusted to such as arthritis or back problems?

- Yes 1
- No 2
- Don't know 0

230 If Yes: specify

232 (Do you have) any conditions which are under control because you are having long term treatment or taking medication. For example, needing glasses or having high blood pressure?

.....

233 Do you have any other conditions you have'nt already mentioned ?

.....

234 I now want to ask you about the cause of the condition(s) you have told me about (specify condition). Was it/ any of them caused by an accident?

- Yes 1
- No 2 Go to Q238----->
- Don't know 0

235 You said that your(condition) was the result of an accident. When did this/ the most recent accident happen?

- Less than 2 weeks ago 1
- 2 weeks to less than 4 weeks ago 2
- 4 weeks to less than 12 weeks ago 3
- 3 months to less than 6 months ago 4
- 6 months to less than 12 months ago 5
- 1 year to less than 5 years ago 6
- 5 years or more ago 7
- Don't know 0

236	Did this accident happen:	
	At work	1
	During sport, exercise or recreational activities	2
	At your home or at the home of friends or relatives	4
	On a path, road or highway	8
	At a school or other educational institution	16
	None of these	32
	Don't know	0

237	Were you taking, or had you just taken some cannabis when the accident happened?	
	Yes	1
	No	2
	Don't know	0

238	Apart from when you have had colds, has your chest ever sounded wheezy or whistly?	
	Yes	1
	No	2
	Don't know	0

239	Do you have, or have you ever had, a persistent cough or bronchitis?	
	Yes	1
	No	2
	Don't know	0

240	If Yes: When did this last occur?	
	Less than one year ago	1
	1 year to less than 3 years ago	2
	3 years to less than 5 years ago	3
	5 years or more ago	4
	Don't know	0

242 Going back to ... (any medical condition(s) respondent described), what effect has cannabis had on this illness/condition? (If several, ask for effect on three most recent).

.....

.....

243 When did you first notice this effect? (Relate to onset of condition)

244 What (other) treatments/medications have you used for the condition/three most recent conditions?

.....

245 Have you any children under 16 years in your full-time or part-time care?

Yes	1
No	2 Go to next Section (Q 250)——>
Don't know	0

247 If Yes: The next few questions are designed to measure the degree of contentment you have in your relationship with your child. There is no right or wrong answer. Answer each item as carefully and accurately as you can by choosing one of these categories (show Sheet 6 overleaf). In answering, I want you to think about how it is with any one of your children.

Child relationship score:

Section 4: Family & Social Background/Context

- 250 How do you spend your leisure time?
- 251 Do you take an interest in politics?
Yes 1
No 2
Don't know 0
- 252 *If Yes: What kind?*
Party politics 1
Local (council) politics 2
"Green"/environmental issues 4
"Legalise marijuana" group 8
Other (Specify) 16
Don't know 0
- 253 Do you play an active part eg: go to meetings, or participate in other ways?
Actively involved 1
Interested only 2
Don't know 0
- 254 Have you had any *new* activities or interests of any kind in the last three months?
Yes 1
No 2
Don't know 0
- 255 *If Yes: What?*
- 256 Do you participate in any groups, clubs or organisations?
Yes 1
No 2
Don't know 0
- 257 *If Yes: What?*
- 258 What proportion of your time do you spend time by yourself? %
- 259 What do you do then?
- 260 Do you meditate?
Yes 1
No 2
Don't know 0
- 261 *If Yes: What kind of meditation is that?.....*
- 262 *If Yes: What effect does cannabis have on your meditation?.....*
- 263 What are your goals for the future?

264 Do you do any voluntary work; that is, work you don't get paid for ? (Excluding domestic duties.)

Yes 1
No 2
Don't know 0

265 If Yes: What kind of work is it?

266 How did you become involved in it? (Prompt: was it through a community service order?)

CSO 1
Voluntary 2
Other (Specify) 3
Don't know 0

267 Is there somewhere you like to go regularly to be with friends?

Yes 1
No 2
Don't know 0

268 If Yes: Where do you go?

Pub 1
Club (RSL etc) 2
Friend's home 4
Organised group 8
Evening/tech course 16
Other (Specify) 32
Don't know 0

269 Might you smoke marijuana when you're there?

Yes, usually/often 1
Sometimes 2
Occasionally/rarely 3
No/never 4
Don't know 0

270 Are you currently in a relationship?

Yes 1
No 2
Don't know 0

271 If Yes: Does your partner/spouse/boy/girl-friend use cannabis?

Yes 1
No 2
Don't know 0

272 If Yes: How often does he/she use it?

Occasions per week

273 When you are with your partner/ friend, how often do you use/ smoke cannabis together?

Never 1
Rarely 2
Sometimes 3
Usually/all the time 4
Don't know 0

274 If uses with partner: Do you share the same joint/ bong/ etc? How often would that happen?

Never 1
Rarely 2
Sometimes 3
Usually/all the time 4
Don't know 0

- 275 Do you have any children aged 16 or under living with you at present?
 Yes 1
 No 2 **Go to Q289 -->**
 Don't know 0
- 276 *If Yes:* Does having children living with you make a difference to your own cannabis use?
 Yes 1
 No 2
 Don't know 0
- 277 *If Yes:* In what way?
- 278 Do you ever use cannabis in their presence?
 Yes 1
 No 2
 Don't know 0
- 279 Have they ever expressed concern to you about your cannabis use?
 Yes 1
 No 2
 Don't know/Not applicable (too young) 0
- 280 How have you explained your cannabis use (and other drug use) to them?
 [II]
- 282 Do your children use cannabis?
 Yes 1
 No 2 **Go to Q 289 -->**
 Don't know/ Not applicable (too young) 0
- 283 *If Yes:* How do you feel about that? [II]
- 284 Do you ever give your children any?
 Yes 1
 No 2
 Don't know 0
- 285 Do you/have you taught your children to moderate their use?
 Yes 1
 No 2
 Don't know/ Not applicable (too young) 0
- 286 *If Yes:* probe for detail: [II]
- 287 Has your child/children ever been caught for using cannabis at school?
 Yes 1
 No 2
 Don't know/ Not applicable 0
- 288 What did you do/say? [II]

- 289 Does anyone (else) in your current family group use drugs of any kind (including cannabis)?
 Yes 1
 No 2
 Not applicable - lives alone 3
 Don't know 0

- 290 *If Yes: Who? (Multiple choice)*
- | | Who | Substance(s) |
|--------------------------------|------------|---------------------|
| Partner/Spouse | 1 | ..... |
| Child/children | 2 | ..... |
| Other relative | 4 | ..... |
| Living-in friend, boarder etc. | 8 | ..... |
| Other..... | 16 | ..... |
| Don't know | 0 | |
- 292 What substances do they use? (*Enter appropriate code above*)
- | | |
|---|---|
| Cannabis | 1 |
| Alcohol | 2 |
| Tobacco | 4 |
| Other drug(s) (<i>State what</i>) | 8 |
| Don't know | 0 |
- 293 How much does he/she use? Would you say they were drug/alcohol dependent?
-
- 294 When you were growing up, was there anyone in your immediate family who was drug or alcohol dependent?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 295 Who? What substances? For what period of subject's development?
-
- 296 Do any of your (other) friends use marijuana?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 297 *If Yes: What proportion of them use it?*
- %.
- 298 Do you have friends or groups of friends who are fairly heavy users? (That is, they smoke most days)
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 0 |
- 299 Are you more likely to use marijuana when you're alone, or around friends?
- | | |
|----------------|---|
| Alone | 1 |
| Around friends | 2 |
| No difference | 3 |
| Don't know | 0 |
- 300 How often do you use cannabis when you're around strangers? (*If "never" prompt:*) What about a gig/concert/dance?
- | | |
|--------------|---|
| Never | 1 |
| Occasionally | 2 |
| Sometimes | 3 |
| Often | 4 |
| Don't know | 0 |
- 302 *If Yes: When would you feel okay about doing that?*
-

303 Now I want to ask you some questions about work.
 Are you employed or self-employed in paid work, or have you been in the last 2 years ?

Yes	1
No	2
Don't Know	0

304 What about unpaid or voluntary work?

Yes	1
No	2
Don't Know	0

If respondent has not been in paid work for the last 2 years , Go To Question 320->
If respondent is not currently working, but has in the last 2 years, ask about the last job.

306 Thinking about your present job/the last job you did:
 Do/did you like your job?

Yes	1
No	2
Don't know	0

307 Do/did you do well at it?

Yes	1
No	2
Don't know	0

308 What kinds of things about it are/were easy for you?

309 What things about your job give/gave you trouble?

310 How well do/did you get on with people at work/ with your boss or supervisor? Would you say:

Very well	1
Fairly well	2
Not so well	3
Not at all well	4
Not applicable - self employed	5
Don't know	0

312 Why did you leave your previous job?

314 The next few questions are about smoking or using cannabis at work or while you're working:
 Do you sometimes have a joint/bong while you're working, or at breaks? What about...*(Read out choices and circle):*

Just before work	1
While I'm working	2
At breaks	4
Just after I've finished work	8
Depends on the nature of the job	16
Don't use at work	32
Other (Specify).....	64
Don't know	0

317 Do/ did any of your workmates smoke cannabis while they're at work?

Yes	1
No	2
Don't know/Not Applicable	0

318 If Yes: Do/did you usually smoke with them?

Yes	1
No	2
Don't know/Not Applicable	0

319 Would you usually share a joint/bong with them?

Yes	1
No	2
Don't know/Not Applicable	0

320 Does your use of cannabis ever lead to problems with your family/ friends/ at work?

Yes	1
No	2
Don't know	0

321 If Yes: Which of these?

Family	1
Friends	2
At work	4
Other (Specify).....	8
Don't know	0

322 If Yes: What kind of problems?

.....

.....

323 Did you continue to use/ did it make any difference to your use?

It made no difference	1
Continued to use, but more disceetly/differently	2
Cut down my use	4
Stopped	8
Other (Specify).....	16
Don't know	0

324 Would you say you have given up or neglected other pleasures or interests in favour of using marijuana?

Yes	1
No	2
Can't say/Don't know	0

Section 5: Attitudes

I want to ask you now for your opinions about drugs and the law.

350 To what extent would you support or oppose...? (Read out choices.)

	<i>Strongly support</i>	<i>Support</i>	<i>Neither</i>	<i>Oppose</i>	<i>Strongly oppose</i>
the personal use of Marijuana/Cannabis being legal	1	2	3	4	5
the personal use of Heroin being legal	1	2	3	4	5
the personal use of Amphetamines being legal	1	2	3	4	5
the personal use of Cocaine being legal	1	2	3	4	5

352 To what extent would you support or oppose increased penalties for the sale or supply of the following drugs? Read out.

	<i>Strongly support</i>	<i>Support</i>	<i>Neither</i>	<i>Oppose</i>	<i>Strongly oppose</i>
Marijuana/Cannabis	1	2	3	4	5
Heroin	1	2	3	4	5
Amphetamines	1	2	3	4	5
Cocaine	1	2	3	4	5

353 As it stands, the possession and/or growing of even a small amount of cannabis for personal use can result in a criminal record and possibly a jail sentence if convicted. Do you think that the law relating to cannabis in NSW should be changed?

<i>Yes</i>	1
<i>No</i>	2
<i>Unsure</i>	3
<i>Don't know</i>	0

354 If Respondent says Yes ('the law should be changed'), ask: Why do you say that?

.....

355 If cannabis were to be legalised or decriminalised, would that make any difference to your use?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

356 If No: Why do you say that?

357 If Yes: What kind of difference?

358 I'd like to read you a list of actions that governments have suggested might be undertaken with regard to cannabis. For each one, I'd like you to tell me whether you agree or disagree. (If initial response is agree or disagree, prompt to obtain strength of view.)

Providing factual health education about cannabis to young people in high schools

<i>Strongly disagree</i>	1
<i>Disagree</i>	2
<i>Neutral</i>	3
<i>Agree</i>	4
<i>Strongly agree</i>	5
<i>(Respondent has reservations about the validity of this concept</i>	6)

359	Police to check for cannabis use by drivers (similar to breath-testing)	
	<i>Strongly disagree</i>	1
	<i>Disagree</i>	2
	<i>Neutral</i>	3
	<i>Agree</i>	4
	<i>Strongly agree</i>	5
360	Counselling for cannabis users who have problems or have difficulty quitting	
	<i>Strongly disagree</i>	1
	<i>Disagree</i>	2
	<i>Neutral</i>	3
	<i>Agree</i>	4
	<i>Strongly agree</i>	5
	<i>(Respondent has reservations about the validity of this concept</i>	<i>6)</i>
362	Programs similar to stop smoking programs for cannabis users who want to stop but have trouble quitting.	
	<i>Strongly disagree</i>	1
	<i>Disagree</i>	2
	<i>Neutral</i>	3
	<i>Agree</i>	4
	<i>Strongly agree</i>	5
	<i>(Respondent has reservations about the validity of this concept</i>	<i>6)</i>
363	General community education about the health effects of cannabis	
	<i>Strongly disagree</i>	1
	<i>Disagree</i>	2
	<i>Neutral</i>	3
	<i>Agree</i>	4
	<i>Strongly agree</i>	5

364 Do you know any children or adolescents (that is, under 16) who use cannabis?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

365 From a health angle do you think *regular* use by a teenager is OK?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

366 Why do you say that?

367 From a health angle do you think *occasional* use by a teenager is OK?

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

368 Why do you say that?

Section 6 : Legal/Crime Variables

- 400 Does the fact that cannabis is illegal make any difference to your use ?
- | | |
|-------------------|---|
| <i>Yes</i> | 1 |
| <i>No</i> | 2 |
| <i>Don't know</i> | 0 |
- 402 *If Yes:* What kind of difference?
- 403 *If No: (prompt)* Does it affect amount; where you use it; how you feel around people who don't use it?
.....
- 404 Have you ever come under notice by the police in connection with cannabis?
- | | |
|-------------------|---------------------------|
| <i>Yes</i> | 1 |
| <i>No</i> | 2 Go to Q420--> |
| <i>Don't know</i> | - 0 |
- 405 How many times?
- 406 *If more than once, say: Tell me about the most recent occasion.
Probe for when, where, in connection with other matters, result of surveillance by DEA, reported by neighbors,
operation Noah, etc)*
- 407 Thinking of the most recent occasion, what did the police do?
.....
-
- 408 Was it the local police, DEA, Major Crime Squad or Federal police that were involved?
- | | |
|--------------------------|----|
| <i>Local police</i> | 1 |
| <i>DEA</i> | 2 |
| <i>Major Crime Squad</i> | 4 |
| <i>Federal police</i> | 8 |
| <i>Other</i> | 16 |
| <i>Don't know</i> | 0 |
- 409 Was this initially about cannabis, or was it in connection with another matter and they came across it?
- | | |
|---------------------------------|---|
| <i>Cannabis</i> | 1 |
| <i>Another matter initially</i> | 2 |
| <i>Both</i> | 3 |
| <i>Don't know</i> | 0 |

410 *If R. reports several cannabis-related incidents, record details of the most recent below. Then ask: Apart from this (most recent) incident, what was the most serious (in terms of outcome) cannabis- related offence? Record below:*

Offence	Charged		Finding			Outcome (*=most recent)
	Yes	No	Guilty	Not Guilty	Pending	
Possession/Use	1	2	1	2	3	.....
Supply/traffic	1	2	1	2	3	.....
Cultivate	1	2	1	2	3	.....
Import	1	2	1	2	3	.....

412 How long ago was that/what was the most recent occasion? Where did it happen?

413 How were you treated personally when you were involved with the police? Probe: Do you have any criticism or complaint about how you were treated?

414 If 'treated badly': Did you feel that you had grounds for a complaint against the police?
 Yes 1
 No 2
 Don't know 0

415 If Yes: What did you do about it?.....

416 How did that particular involvement with the police affect your cannabis use?
 Made no difference to my use 1
 I used less 2
 I reduced my consumption at first, not later 4
 I was more careful about where/how I used 8
 I stopped, at least for a time 16
 I changed to/increased use of other substances (say what) 32
 Don't know 0

417 Do you think you were treated fairly by the courts?

418 Have you ever taken a charge for someone else in relation to cannabis? (eg husband, wife, friend etc)
 Yes 1
 No 2
 Don't know 0

419 If Yes: Why?

420 Have you ever been apprehended on any drug-related charge apart from cannabis?
 Yes 1
 No 2
 Don't know 0

421 If several, ask for details of the most recent incident and record below. Then ask: Apart from this (most recent) incident, what was the most serious (in terms of outcome) drug- related offence? Record below:

Offence	Charged		Finding			Outcome (*= most recent)
	Yes	No	Guilty	Not Guilty	Pending	
Possession/use	1	2	1	2	3	.....
Supply/traffic	1	2	1	2	3	.....
Import	1	2	1	2	3	.....
Other drug offences	1	2	1	2	3	.....

422 How long ago was that/what was the most recent occasion?.....

423 *If 'Yes' to apprehended for cannabis or other drugs ask: What were the consequences for you of this experience(s)?*

<i>A personal sense of shame</i>	1
<i>Stigmatisation by friends & acquaintances</i>	2
<i>Loss of job/reputation/affected my business/risk to future job prospects</i>	4
<i>Kids got harrassed at school</i>	8
<i>Suffered anxiety/depression/stress</i>	16
<i>Makes overseas travel difficult - visa problems etc.</i>	32
<i>Now known to police so under surveillance/ future apprehension more likely</i>	64
<i>None/ Made no difference to me</i>	128
<i>Other</i>	256
<i>Don't know</i>	0

424 *Have you ever been apprehended for any offence other than drug-related ones?*

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

If Yes, get details for the most recent and the most serious:

Offence	Charged		Finding			Disposal (* = most recent)
	Yes	No	Guilty	Not Guilty	Pending	
Theft/steal	1	2	1	2	3	.....
Robbery/Assault	1	2	1	2	3	.....
Drink driving	1	2	1	2	3	.....
Other Offences	1	2	1	2	3	.....

425 *If respondent has been on probation/CSO (refer to answer at Questions 410,420,423), ask:*

What effect did this have on your cannabis use?

<i>No difference/had no effect</i>	1
<i>Reduced consumption at first, not later</i>	2
<i>I cut down my consumption</i>	4
<i>I stopped</i>	8
<i>I became more careful but didn't reduce my consumption</i>	16
<i>I changed to/ increased my use of other substances (Say what)</i>	32
<i>Don't know</i>	0

426 *Have you ever been the victim of a drug rip-off?*

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

427 *If Yes: What happened?*

428 *If appropriate, ask:*

(a) *Did you make a report to the police?*

<i>Yes</i>	1
<i>No</i>	2
<i>Don't know</i>	0

429 (b) *If Yes: What happened?.....*

430 (c)If No: Why not?.....

431 You told me earlier that you grow/supply cannabis. What sentence would you be likely to get if you were caught/ caught again?

Discharge/ no sentence	1
Caution	2
Fine	4
CSO	8
Probation	16
Jail	32
Other	64
Don't know	0

432 Have any of your friends or members of your family come under notice by the police for possessing, selling, using or growing cannabis?

Yes	1
No	2
Don't know	0

433 If yes: Who? What relationship? (Circle all that apply):

Partner/Spouse	1
Child/children of respondent	2
Other relative	4
Living-in friend, boarder etc.	8
Friend	16
Other	32
Don't know	0

434 What happened ? (If more than one police-related event is mentioned, ask about the most recent one).

Police interrogation/ search	1
Charged	2
Court appearance	4
Sentence (say what).....	8
Other	16
Don't know	0

435 What effect did this (most recent) event have on your own possession and use of cannabis?

No difference/had no effect	1
Reduced consumption at first, not later	2
I cut down my consumption	4
I stopped	8
I became more careful but didn't reduce my consumption	16
I changed to/ increased my use of other substances (Say what)	32
Don't know	0

436 If more than one event is reported in Qs 432-434 above,ask:

Did any (other) of these police-related events have any effect on your own possession and use of cannabis?

Yes	1
No	2
Don't know	0

437 If Yes, ask for details: which one(s), what the effect was and why..... -

.....

.....

Section 7: Demographics/Employment

I would like to ask you some questions to ensure that we have spoken to a good cross section of people.

450 First some questions about what work you are mainly doing now. Which of these categories best describes you at the moment? :

<i>At school, university or in a full time training program</i>	1
<i>Working full time for pay</i>	2
<i>Working part time for pay</i>	4
<i>Unemployed or laid off and looking for work</i>	8
<i>Benefits/Pension</i>	16
<i>Retired</i>	32
<i>Home duties</i>	64
<i>Other (Specify)</i>	128
<i>Don't know</i>	0

451 How old are you?

<i>Under 21</i>	1
<i>21 - 30</i>	2
<i>31 - 40</i>	3
<i>41 - 50</i>	4
<i>51 or over</i>	5
<i>No information</i>	0

452 You told me that you: (have never worked in a paid job) *or* (are/used to be employed in a paid job). Is that correct?

If respondent has not been in paid work for the past 2 years, go to question 454.

Otherwise ask: What kind of work are you doing now/ did you do when you last worked? Please give the full job title, and as much detail as you can.

.....

453 For whom do/did you work?

<i>Self employed</i>	1
<i>Employed by private company or business</i>	2
<i>Employed by Federal/State Government</i>	4
<i>Employed by Local Government</i>	8
<i>Employed in family business/farm</i>	16
<i>Other (State what).....</i>	32
<i>Don't know</i>	0

454 What is your present living situation?

<i>House/ Flat in Urban area</i>	1
<i>House/Flat in Suburban area</i>	2
<i>House/Flat in rural area: Sole dwelling</i>	4
<i>House/Flat in rural area: Shared dwelling (dual occ.,etc)</i>	8
<i>Multiple Occupancy</i>	16
<i>Caravan/ Tourist Park</i>	32
<i>Squat/ No fixed address</i>	64
<i>Other (State what).....</i>	128
<i>No Information</i>	0

455 Which of these best describes your household?

<i>Couple with children</i>	1
<i>Single parent with child(ren)</i>	2
<i>Unrelated adults with child(ren)</i>	4
<i>Couple with no children</i>	8
<i>Single person living alone</i>	16
<i>Unrelated adults sharing, no children</i>	32
<i>Other(Specify).....</i>	64
<i>Don't know</i>	0

- 456 Are you studying full or part time?
- No - not studying 1
 - Yes - full time 2
 - Yes - part time 3
 - Don't know 0
- 457 What is the highest level of formal education you have obtained?
- Primary school only 1
 - Secondary school 1-2 years 2
 - Secondary school 3rd year 3
 - Secondary school 4th year 4
 - Secondary school 5th year 5
 - Secondary school 6th year 6
 - Trade qualifications 7
 - Tertiary qualifications other than University degree 8
 - University 1st year 0
 - University 2nd year 10
 - Bachelors degree 11
 - Post-graduate qualification 12
 - Other (specify) 13
 - Don't know 0
- 459 Which of these categories would you use to describe yourself?
- Australian born non-Aboriginal 1
 - Australian born Aboriginal 2
 - Torres Strait Islander 3
 - Born outside Australia 4
 - Don't know 0
- 460 Where were you born? Record location.
- 462 What is your main source of income?
- Job (including self employed) 1
 - Austudy 2
 - Benefits/Jobsearch/Newstart/Pension 4
 - Supported by partner/ family 8
 - Other (say what)..... 16
 - Don't know 0
- 463 Do you earn any money from selling cannabis?
- Yes 1
 - No 2
 - Don't know 0
- 464 If Yes: What proportion of your income would that be?
- All/almost all 1
 - Three quarters 2
 - About half 3
 - One quarter 4
 - Very little 5
 - Don't know 0
- 465 Tell respondent that that is the end of the interview, but ask: Is there anything else you'd like to tell me that we haven't covered? Record below(or on back of page).
-
-

Section 8 : Quality of Interview Data

470

NUMBER

471

Postcode:

472 Area of residence.....

Say to Respondent: Thank you for your time in conducting this important survey.

RECORD WHO WAS PRESENT DURING THE INTERVIEW:

- 500 Respondent only 1
- Spouse 2
- Parent(s) 3
- Relative (adult) 4
- Other (Specify)
- Don't know 9

- 502 Did this inhibit the honesty of the interview?
 - Not applicable- only respondent present 1
 - Yes - a great deal 2
 - Yes - to some extent 3
 - Yes - a little 4
 - Not at all 5
 - Don't know 9

- 503 How open do you think the respondent was?
 - Completely 1
 - Not completely 2
 - Not at all 2
 - Refused to answer(some questions) 3
 - Respondent was/appeared to be stoned during the interview. 4
 - Don't know 9

NOW WRITE A BRIEF SKETCH OF THE RESPONDENT ON THE PAGE OPPOSITE.

INTERVIEWER DECLARATION

I have conducted this interview. It is a full and to the best of my knowledge, an accurate recording and has been completed in accordance with my interview guidelines.

Signed

Interviewer Name:

Time interview started: completed:

Interview length: Hours Minutes

Date of interview:

APPENDIX F: DERIVATION OF DSM-III-R CANNABIS DEPENDENCE CRITERIA

The DSM-III-R Criteria for cannabis dependence (American Psychiatric Association, 1987) require that at least 3 of the following criteria are met:

1. Substance often taken in larger amounts or over a longer period than the person intended
2. Persistent desire or one or more unsuccessful efforts to cut down or control substance use
3. A great deal of time spent in activities necessary to get the substance (e.g., theft), taking the substance (e.g., chain smoking), or recovering from its effects.
4. Frequent intoxication or withdrawal symptoms when expected to fulfil major role obligations at work, school, or home (e.g., does not go to work because hung over, goes to school or work "high", intoxicated while taking care of his or her children), or when substance use is physically hazardous (e.g., drives when intoxicated).
5. Important social, occupational, or recreational activities given up or reduced because of substance use.
6. Continued substance use despite knowledge of having a persistent or recurrent social, psychological or physical problem that is caused or exacerbated by the use of the substance (e.g., keeps using heroin despite family arguments about it, cocaine-induced depression, or having an ulcer made worse by drinking).
7. Marked tolerance: need for markedly increased amounts of the substance (i.e., at least a 50% increase) in order to achieve intoxication or desired effect, or markedly diminished effect with continued use of the same amount.
8. Characteristic withdrawal symptoms
9. Substance often taken to relieve or avoid withdrawal symptoms.

Some symptoms of the disturbance had to have persisted for at least one month, or have occurred repeatedly over a longer period of time.

Each of these criteria was approximated as follows.

Criterion 1 was assumed to have been met if the respondent answered "yes" to Q156. Data was considered missing for Criterion 1 if Q156 was unanswered.

Criterion 2 was met if the respondent answered "yes" to Q165. Data were considered missing for Criterion 2 if data were missing for Q165.

Criterion 3 met if answered "yes" to Q157. Data considered missing for Criterion 3 if data missing for Q157.

Criterion 4 was met if the respondents answered at least "often" to Q48 or Q53, or if they answered "often" to Q99 or Q100. Data were considered missing for Criterion 4 if data were missing for all 4 questions.

Criterion 5 was met if the respondent answered "yes" to Q324. Data were considered missing for Criterion 5 if data were missing for Q324.

Criterion 6 was met if the respondent answered "yes" to Q152 or Q154, or "it made no difference" to Q323. Data were considered missing for Criterion 6 if data missing for all 3 questions.

Criterion 7 was met if the respondent answered "yes" to Q97. Data were considered missing for Criterion 7 if data were missing for Q97.

Criterion 8 were met if the respondent answered "yes" to Q167. Data were considered missing for Criterion 8 if data were missing for Q167.

Criterion 9 were met if the respondent answered "yes" to Q168. Data were considered missing for Criterion 9 if data were missing for Q168.

A respondent was considered dependent if they met 3 or more criteria.

Data for a DSM-III-R diagnosis of dependence was considered missing if less than 3 criteria were met and data was missing on at least one criteria.

It should be noted that not all questions reflected the exact wording of the DSM-III-R criteria. For example, the question used to assess criterion 1 only inquired about use for longer than intended, not larger amounts than intended; it did not specify how 'often'; and it only asked about the last 12 months.

Other changes were as follows: **criterion 2** only asked about persistent desire to use in the last 12 months. **Criterion 3** was inquired about only over the past 12 months. **Criterion 4** was assessed through a combination of several questions. The questions used to assess criterion 5 was more generally worded than the criterion and made no specific mention of work. **Criterion 6** was also assessed through combination of questions, and the question about health problems only asked about the last 12 months. The question for **criterion 7** implied recent use, and the questions for **criteria 8 and 9** only inquired about the last 12 months.

APPENDIX G: COLLATERAL INTERVIEW GUIDE

1. What is it like to live/ be with someone who habitually smokes or takes marijuana?
What are the good and the bad aspects of it?
What is it like to be around him(her) when he has been smoking/taking it ?
2. How do you relate together: does your partner or friend's use of marijuana affect the way you relate to each other and other people?
(In general, would you say it improves or impairs your relationship? In what ways?)
3. Do you ever talk together about his/her using?
4. (If R mentions negatives):
(a) How do you cope with this/these?
(b) Does he agree with your perception of how it is? How does he respond to that?
5. Do you ever feel envious of his/her use? (If Yes: Why don't you use it?)
6. Why do you think he/she uses cannabis?
7. Do you think he/she is dependent on or addicted to cannabis? Why do you say that?
8. Have there been times when he/she hasn't used at all? How is that ?
9. How does it affect the division of household chores/tasks? What about looking after the children?
10. How is it for the children, that he/she uses cannabis?
11. Do you find that your partner/friend's use of cannabis is a problem for you in relation to friends or acquaintances?
12. What about legal aspects - does it affect you, being around an illegal activity?
13. Have there ever been times when you've used cannabis as heavily as he/she has?
14. If appropriate: Have you noticed any difference in ... (primary respondent) since their interview?

APPENDIX H: COMPOSITE PROFILES OF INDIVIDUAL CANNABIS USERS

The following profiles are composites of individuals who were interviewed in the study. They are meant to illustrate the variety of people who smoke cannabis, and the different roles it plays in their lives. These profiles do not represent individual people. Although they may appear to be portraits of recognisable individuals, they are simply composites of the characteristics and patterns of use that were shown by participants in this study. This has been done to protect the privacy of respondents.

PROFILE 1

A lives in a multiple occupancy (MO) close to a small village. She has children who attend the local school, and a toddler whom A hopes will go to preschool for a few days a week next year.

A's home was built by A and the father of her children over the years they have lived in the MO. A says that the unfinished house was a problem when the older children were babies, but that she has really been able to enjoy her youngest child as she now has electricity, can run a pump for water and a water heater. A is better off financially since she and her partner split up, but she feels that there is still a high level of stress in her life. Her house is still not finished and her ex-partner has moved in with another woman who lives nearby. While this makes sharing the responsibility and care for the children a whole lot easier, it also causes a certain amount of angst for A.

A is a trained teacher, and has started looking around for refresher courses or other courses she could do now so that she will be able to get back into the work force within the next few years. However she has not been able to find anything yet and worries that she is so out of date she will not be able to compete with new graduates or more experienced teachers.

A lights up her first joint of the day after she sees her children off on the school bus and while her youngest child watches Sesame Street. She may have another during the day if a friend drops in or if she has monotonous tasks to do like weeding her vegetable garden. Then, she will often have a joint while she walks over to see the sun set behind the mountains, and one or two more after her children have gone to bed.

A smokes heads from the few plants she grows each year in the bush. She sells most of the leaves to friends in town and this gives her some money for extras like Xmas presents for the kids and her plants which she loves to grow. She also likes to swap her fruit and vegetables for services from friends, like massages or music lessons for her daughter.

A says that smoking marijuana is now so much part of her life she could not imagine not being a smoker. She says that most of her friends are smokers. A doesn't smoke tobacco and refuses joints which have tobacco in them. She rarely has an alcoholic drink, as she feels that it is an expense she can easily do without. A enjoys smoking cannabis. She likes the way it makes her feel relaxed, takes her mind off the frustrations about the unfinished house and lets her mind wander when she sits on the verandah listening to her favourite tapes late at night.

PROFILE 2

B is in his thirties. When he finished high school he travelled around Australia doing odd jobs and learning skills in building, fishing and farm work. B has been smoking marijuana since he was fifteen, although, he says, with a big smile on his face, that his parents would have killed him if they found out. B says he did a lot that his parents didn't know about. By the time he left school he had tried LSD and speed, and while working as a fisherman he developed a heroin habit which he managed to lose five years later in a detox unit.

B describes himself as a feral. He has long dreadlocks and very few personal possessions. He lives in a variety of places. Sometimes he lives with friends; sometimes he uses his car as a home. He says he is happiest when he is living in a forest blockade. He feels that saving ancient forests from being logged is the most important work that anyone can do. B is very committed environmental activist. He has a good working knowledge of state regulations about logging and knows his rights if he is apprehended by police. B does regular voluntary work and is also skilled in writing submissions to government departments and politicians and organising rallies and demonstrations.

B has periods of heavy smoking, when he will smoke throughout the day and well into the night. However, he says that there are times when he does not smoke at all, days, weeks and even months, depending on where he is and what he is doing. He says that he doesn't smoke if he wants a clear head for a job, but does if he is carrying out more physical tasks as marijuana often makes it more enjoyable and more of a social thing. B does not smoke cigarettes, although he won't knock back a joint just because it has tobacco in it.

B is very proud of the healthy state of his body. He looks very fit and has clear sparkling eyes. He says that he goes for a 5 km jog every day, meditates and keeps to a strict vegan diet. B says that never gets sick. He says that marijuana is just another herb, but one that can help you see nature with different eyes, and can give you a feeling of oneness with your friends.

PROFILE 3

C and D have been together for many years. They met when they were university students and decided to start a family and a new way of life. They are now in their mid forties. One of their children has left home to go to university, and the second child attends the local high school. C works in a professional occupation. D was also a professional, but, when she left work to have the children she became interested in art.

C and D live in an big old wooden house with verandahs with views over the surrounding countryside. They are well known for their community work over the years.

C has smoked marijuana since he was a student. He used to smoke large quantities when he could get it and was also quite a drinker in his earlier days. Now, he says, he self medicates with almost homoeopathic quantities. He says the first toke will often be enough now to lift him into a mildly euphoric state. So he doesn't see any point in having any more than that. He will sometimes have a toke in the morning if he feels like it, or at lunch time, but more often than not, he will have his first toke when he comes home at the end of the day, and will have a few more after dinner. He usually has a glass of wine with dinner as well.

D did not smoke at all in the early days. She says she got quite depressed after the birth of one of her children, and looking back, she now recognises that she had post natal depression, although, neither she nor C recognised it at the time. She was also suffering from a lot of pain from a chronic complaint. When a local doctor suggested putting her on Valium, C suggested that she try smoking marijuana first to see if that helped. D has been smoking ever since, but, like C, smokes very small quantities. D prefers to smoke from a minute pipe. She finds it particularly helpful when she is arranging a craft exhibition or planning a class. She says it stimulates her creativity and opens up different perspectives which she doesn't have when she is straight.

Both C and D talked about their children's smoking. They both feel that they have taught their children to moderate their use. They say that it was difficult for them when their children started using at a much younger age than they were themselves. They would be upset by even younger children being stoned on their way to school. But they say they never hid their smoking from their children. They trusted that, if they were open and honest with them, they could talk to their children about their smoking if they thought it was getting out of hand, and yes, they had to do that. Quite a few times.

C says he would be very paranoid if he grew his own plants, so he buys small quantities from a friend who is a commercial grower.

PROFILE 4

E is in his twenties but he has been a regular marijuana smoker for ten years. E grew up on the North Coast and found that marijuana was always available. E has been playing in a band since he left school, but recently decided to study music. He still plays most weekends.

E lives in a student household. Everyone in the house smokes cigarettes and marijuana and considerable quantities of beer are also consumed by them and their friends.

E says that smoking marijuana has got him into quite a lot of trouble over the years. He was in trouble at high schools because of being caught smoking. He has a criminal record because he tried to sell a few joints to an undercover cop who pretended he was a tourist who didn't know where to score. He says the police treated him very badly and the magistrate didn't believe him when he said he wasn't a dealer. He is especially angry about having a criminal record as he had the opportunity to travel overseas with a rock band last year, but he couldn't get a passport because of his record.

E says that he thinks it is time he gave up smoking. He often finds it hard to get started in the morning and tends to skip morning classes. And he often finds it difficult to learn for exams. His memory is not as good as it was when he did his HSC. But he feels that he is caught in a cycle. All the guys in his band are heavy users. And E knows that they do play their best music after a few smokes and as long as they are not too stoned. E really loves it when they play well. Part of E's problem is that they pool their gig payments for dope and sometimes even get paid in dope. Then, on top of that, everyone in E's house smokes, and drinks, and E says that even if he makes up his mind to stop or at least cut down, he finds himself having a joint when he wakes up, along with whoever else is in the kitchen at the time.

E is especially aware of his smoking at the moment because he has a new girlfriend, or at least an old girlfriend from school who has come back into his life. She complains that he is only half there for her. She says that he has become a real dope head and sits around all night with his mates getting stoned and talking about all the great things they are going to do and all the great ideas they have. Sometimes E thinks she's right.

PROFILE 5

F is a tradesman who moved to the area some years ago with his wife and young children. He was drawn by the lifestyle, the surf and the quality and availability of the cannabis. He has good years when there is a building boom on the coast, and also has some slack years as the coast has attracted a lot of other tradesmen and there is keen competition for work. This state of affairs quite suits F. He has a very easy going nature, goes surfing when the work is scarce, and earns a bit of money on the side, selling for some of his old mates who are growers.

F's wife has not been so easy going. She does not smoke, and F's smoking and especially dealing has been a constant strain for her. She does not want E to be caught by the police. She does not want to be giving messages to their children that it is OK to smoke marijuana let alone deal. There have been times when she has taken the children and left F, but has always come back. She says that she does love him, he is a good man, does not drink and is never violent. Part of her problem is that she remembers only too well how it was for her, at eighteen, being caught by the police when she got mixed up with a teenage crowd who stole cars for joy rides. She said that she thinks F has no idea of how horrible it can be, to be arrested and kept in a police cell overnight, terrified about court and being sent to jail. She worries that he has just been lucky up till now. F's wife also said that it was difficult for her, too, because most of the women she knew smoked, although usually not nearly as much as the men. F's wife said that she often felt out of place because she didn't smoke.

F never smokes before or during work, but he does smoke every day, after work and often at night, and just loves having a smoke before riding his surf board. Most of F's friends smoke, too. They are also in the building trade, too, except for the few who have bought farms up in the hills and grow enough plants to provide for their families. F gets his supplies as commission for selling. This suits F. He likes to know where his dope comes from and how it is grown.

PROFILE 6

H is a woman in her thirties who lives with her lesbian partner. Both are in professional occupations. They have been together for a few years now and have a wide circle of gay and heterosexual friends whom they have met at work and at the various activities they do in the town.

H is well aware of the health risks of smoking anything, but compared to tobacco, she feels that the risk is low, especially in small amounts. She first started smoking when she was 20, which, she says was quite old compared to most people, and first used cannabis because she had heard that it was good for relieving PMT symptoms. H also found that it was great for socialising, and helped her relax and have fun. She says that her own family were very dull and that most of her childhood rewards came from being a high achiever.

H's partner, however, had quite a different adolescence, and has been smoking since she was thirteen. H's partner has used a variety of drugs including too much alcohol when she was a student, and gave up her packet a day tobacco habit when she moved in with H.

Both H and her partner are very careful about not being caught out. They enjoy and value their jobs. They buy all the marijuana they need from friends or friends of friends and are careful to smoke indoors with the windows shut so that the neighbours are not suspicious. They often make a batch of cookies on a Saturday morning, to last them a whole week.

H uses several times a week, usually at night, and a bit more on the weekends, especially if she goes to dances or parties. H says she has no trouble when she can't use, like when she visits her family or around friends who are more straight. She and her partner are saving up to go overseas later this year, and neither of them intend to smoke at all for the two months or so they will be away.

APPENDIX I: REASONS FOR CANNABIS USE

The following are a selection of verbatim responses to the questions indicated.

Q34 Why do you currently use cannabis?

- 'The world becomes amazing. My mood and my thought patterns lift: the bliss of the world.'
- 'The leaps of imagination, the surprises of the mind, the adventuressness of my thinking'.
- 'It calms me down and gives me creative inspiration'.
- 'Takes me out of left brain, makes me appreciate nature and gives me stronger integration with life.'
- 'To motivate me: if I begin to do something and then have a smoke, I really get into it.'
- 'I feel it's the only way I can cope with life. I hang onto the belief that it stimulates my creativity and gives me more juice.'
- 'It helps me switch off from things. I can blank out anything that may be disturbing'
- 'I can escape from day to day problems'.
- 'I started using cannabis because I was becoming dependent on alcohol. What I was looking for I could find through dope. Otherwise I'd have been a classic alcoholic'.
- 'I use it as a great aid for sales repping. I always get better orders - I am more relaxed, friendly and funny'.
- 'I can't go to sleep if don't have cannabis.'
- 'It is so available I can't stay away from it.'
- 'I see myself as a nicer person when I smoke.'
- I couldn't take the doctors' medication (tranquillisers), those drugs were totally mind-altering. So I went to cannabis and things went much better'.
- 'I use a maintenance dose to maintain reality. Otherwise I get argumentative with people. I get angry easily: I have a short fuse'.
- 'I use dope to keep the lid on my controversial points of view about a lot of things. It makes me less argumentative, less competitive'.
- 'It keeps the lid on other addictions like alcohol. Otherwise I'm a mongrel'.
- 'It helps me cope with a genetically acquired very high level of energy'.
- 'A lot of heavy things have happened in my life and I can push things down with cannabis. I don't want to deal with them and I don't dwell on things'.

Q37 What does the high feel like?

- 'The mind - it gets rid of the junk. It gets rid of the irrelevancies'.
- 'It is euphoric if strong enough'.
- 'Physically, sometimes I get more energy, sometimes less energy . It magnifies the physical state'.
- 'It's like being tipsy without the headache and nausea'.
- 'It mellows my temper, I am calm and relaxed. (But) in the past few years I get paranoid for the first half hour'.
- 'I am more sensitive to nature, have marvellous ideas when stoned'.
- 'When I'm stoned I have a heightened perception to natural beauty. If I see a sunset I will see it lightly through adoring eyes'.

'I respond to my environment more, for example, if it is quiet I can hear the crickets and the birds. I feel in tune and I feel a sense of belonging - it's all right. Cannabis undoes a knot in my chest. There is a sense of freedom to be happy'.

'Cannabis cuts off my vigilance to the outside world and allows quiet introspection. I tend to hear things like music, voices and sounds clearer'.

'It enhances my sensitivity to things around me, particularly natural things, for example, the sunset or watching birds. It has changed the way I see things and has opened me to the significance of things'.

'In nature, I connect totally with everything'.

'It's euphoric; nothing beats good heads when I'm off my face & in a safe place. Everything is beautiful, my body & everything feels good, colours & sounds. The nuances of life come alive. It's the heartbeat of the entire world'.

'The world's a nicer place. The horrible things are easier to bear'.

'I like my first (of about 7) stone of the day. I get a good rush, altered consciousness and a mind chatter flow. And the last one at night - I drift off into sleep/wake consciousness'.

'I don't get a high these days. It is the memory of the joys I used to get out of it. I hope I'll go back to that'.

'It puts all the stress factors on hold'.

'Now the effects have become so natural it is hard to differentiate between stoned and unstoned'.

'It merely heightens the mood I'm in. If serious, then I become pedantically serious. If I'm in a bad mood I don't smoke because it will just become heightened'.

'I see it as an escape from reality'.

Q40 Beneficial or therapeutic effects of cannabis.

'I feel cannabis helps me to keep the lid on things. I think cannabis is part of my non-handling of my family issues by avoidance & escape'.

'It allows me to look unemotionally at what's happening, eg relationship problems'.

'You can discuss problems without feeling the feelings and it opens a forum to speak'.

'Reducing stress - I'd be on valium otherwise'.

'I was in a violent relationship and it helped me cope with a violent husband and a young baby'.

'I can handle the daily agendas of life'.

'When I get very emotional then it is very useful and it lets me sit back and assess without jumping to conclusions'.

'It doesn't solve problems but gives me relief from them'.

'It can make me make contact again'.

'Made me less rash and more likely to consider other points of view'.

'Because of a medical condition I must rest every day so cannabis helps to make the compulsory rest time more bearable'.

Q42 Medicinal reasons for cannabis use.

'I have a clinically diagnosed psychosis. Cannabis lets me relax into what's happening so I can go through it quietly. It's better than stellazine which leaves a bad feeling. I don't take stellazine unless cannabis isn't available'.

'I believe that cannabis improves my immune system and keeps me healthier than the rest of

my family where there is a high incidence of cancer and heart diseases'.

'It makes colds go away if I'm getting a cold'.

'I was in hospital for 6 months on intravenous morphine for four months, and went onto cannabis then for pain control. They wanted to put me on methadone, but I insisted that they let me try cannabis so they put me in a room in the hospital and let me smoke joints'.

APPENDIX J: NEGATIVE EFFECTS OF CANNABIS USE

The following are negative effects of cannabis use given in response to the specified questions.

Q44 and 45 What don't you like about cannabis?

'I can be quiet, happy, things going smoothly yet be instantly paranoid the moment the phone rings, someone is at the door or a car pulls up. When I was younger I could conquer the world and the paranoia wasn't there. Yet now it feels it's 'raining on my parade'.

'I hate the third day syndrome - after smoking. I'm irrational, moody, neurotic, sensitive, emotionally snappy & I refuse to acknowledge that it's because I haven't had a smoke'.

'My mind wanders, I can't concentrate on conversations. Someone's talking and I'm off with the fairies'.

'Lethargy - It's pretty hard if stoned to get off the couch'.

'Association with drug dealers - big stigma, criminal status'.

'I have to drive myself more - I have to discipline myself to be directed'.

'It interferes with my dream recall'.

'Paranoia - do my peers know I'm stoned?'

'It suppresses the emotions by cutting you off from society'.

'When I have been straight life does really go smoother, it just seems better on cannabis'.

'When I bong I want cigarettes and I like to smoke. It makes me pathetically slack. It gives me the munchies and I want the wrong things and bad food'.

'Paranoia on occasions - like someone will arrive and intrude in my space'.

'The paranoia. After 4 - 6 weeks of constant daily use I start experiencing paranoia when stoned. This stops as soon as I stop using'.

'I don't really believe it's good for relationships. Cannabis seems a common link in every failed relationship I've seen'.

'I don't like the physical effects - inhaling a burning substance isn't good for anyone'.

'It tends to make me procrastinate'.

'I don't like the feedback and flack I receive from my partner about my flippant comments'.

'It's ruining my short term memory. It's hard to make decisions and I lack self confidence which I suspect is due to cannabis'.

'My deep desire is to stop'.

Q46 What demotivating effects does it have for you?.

'Cannabis motivates you to do something you want to do and doesn't stop you from doing things you have to do but it definitely interferes with you doing the things you don't want to do and don't have to do'.

'If I feel slack and have a bong it makes me feel more slack and if feeling energetic then feel more energy'.

'If I had a joint I would be tempted to say "get stuffed" to work'.

'I don't smoke if I need to get things together. When I'm stoned ideas flow but to activate those ideas I need to be straight. So I choose to be stoned when I don't have much to do'.

'Maybe I'd get more done if I didn't smoke, but I've got heaps happening in my life. M is a little luxury. If this is the only way I can make myself sit down, that's fine'.

'If you asked my wife whether it demotivates me she would say definitely yes'.

'I've used cannabis to put a lid on myself, to prevent positive change. I've had experience when I was younger, that I was punished for lifting the lid. A lot of people are scared of their own power and consequences'.

'I do a lot of electronic work and I have found that it is very difficult to concentrate with the degree of precise pragmatic logic that is necessary. If I'm really stoned I tend to become more involved in where the electrons are going and how they are getting there. I haven't come anywhere near to solving the problem which is usually just a question of simple mathematics. So basically, I don't get involved in electronic design or repair when I'm stoned'.

APPENDIX K: EXPERIENCES WITH THE LEGAL SYSTEM

Respondents who had been involved with the police were highly motivated to describe their experiences. For many, this was a very important part of the interview. Although the experiences were anecdotal and varied, approximately half the respondents commented that the police treated them courteously and half indicated they were treated badly.

Some typical positive comments by respondents about their treatment by police were:

"They took my hydro and said I wasn't a bad bloke. No animosity. Treated OK. But they also took all my books on plant genetics and tissue culture which upset me" (male, 54).

"The police were alright, OK. Got respect for the coppers. Got bashed and knifed in jail (did 12 months for dealing hash). Had more dope in jail than anywhere else" (male, 44)

"They barged in and arrested me and took me to the police station, but they were quite polite. I knew them well as they had arrested me before" (male, 45).

"I was not cheeky so the police were quite informal and casual. I think the police should have waived it. It was such a small amount (0.8 grams leaf)" (male, 28).

"Police treated me formally" (female, 29).

Other examples of comments that were more negative were:

"They treated me like a social leper. I was told I was no better than a murderer. Rough handling and body search. Pushing, shoving, dragging, no regard for feelings" (female, 36)

"The old officer was very offensive, threatened physical violence and said we were scumbags, but the younger policeman protected us by standing in front of some resin on the bench in the kitchen. The police were bastards. They were rude, arrogant and used foul language, very aggressive and put across they could hurt us and get away with it, but didn't" (male, 30)

"The police kicked down the door and punched me and dragged me out of bed at 5.00 am ... I have 3 month-old child" (male, 34)

"They pulled guns on me when they arrived, intimidated me and threatened me to own up to selling, or my wife would be implicated" (male, 43)

"After I was charged I was awaiting bail in jail for 7 days...Below the courts in the lockup you cease to be human and are treated more to the status of the animal kingdom. Whether you murdered someone or had a petty fine, you were deemed the same. They had lack of communication skills and education in human relations" (male, 46)

Some typical comments about treatment by the courts were:

"The courts are correct, but the law is wrong" (male, 45 years-old)

"My particular charge should never have been a jailable or custodial offence. I was put in jail with hardened criminals and saw things I should never had seen" (male, 46)

"I consider it's all bullshit. It's a victimless crime and a waste of time, and my and the taxpayers' money" (male, 36).

"The \$700 was excessive. No supply, no profit .. only personal quantity" (female, 36).