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Young People, Drug Use and Early School Leaving: estimating the prevalence, assessing the impact and assisting policy and planning

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ABSTRACT This paper provides the first estimates of recorded and hidden prevalence of opiate use among young people in Dublin. It explores the nature of other drugs used and their effect on the decision to leave school early. The author implements the first multisource enumeration of opiate use in young people in Dublin in 1996 and 1997. Hidden prevalence is estimated by the capture–recapture methodology. The nature of other drugs used was examined by surveying early school leavers. A minimum of 1528 young people aged between 10 and 20 years were identified as using opiates through three 1996 data sources. Using three samples it was estimated that 4081 (95% CI of 3586–4692) were using opiates in Dublin in 1996. Using two samples it was estimated that 1141 (95% confidence interval (CI) of 901–1381) of these were problematic users. Using the two-sample method it was estimated that this rose to 1315 problematic users in 1997. It was found that 51.1% of those surveyed had tried using drugs before they had left school and 46.5% noted that this use had affected them while they attended school. The implications for policy of the size of the opiate problem among young people of school age is considerable. Introduction and Background

The use of illegal drugs by adolescents has been studied and monitored on a global, European and national scale (UNDCP, 1997; WHO, 1998; EMCDDA, 2001; ESPAD, 1997). The profile of the educational attainment of the world's youth has also been studied for a range of global and local settings, including Ireland. In addition the combined effects of adolescent drug use and education have been discussed in various contexts (Lynskey & Hall, 2000; Bachman et al., 1997; Ferguson et al., 1996; Bendelow, 1993; Morgan & Grub, 1994). The political and strategic response to these global developments has been swift. In June 2000, the European Council of Santa Maria da Feira endorsed the European Union (EU) action plan on drugs as a concrete follow-up to the EU drugs strategy (2000-04). This European drug strategy set six main targets. The first of these was to reduce the prevalence of drug use and recruitment to it, particularly among users under 18 years of age (EMCDDA, 2001). Within Ireland, a recent review of the government's drug policy outlined the nature and extent of the drug problem. This review illustrated that 'cannabis and Ecstasy were the most commonly used drugs with heroin or opiates having by far the greatest impact in terms of harm to the individual and the community' (NACD, 2002, ministerial comment).

These political developments have given rise to a number of welcome developments including the commissioning of new and valuable research in the areas of drug prevalence and treatment. However, to date no study, and in particular no Irish study, has been commissioned to assess the actual and perceived impact of drug use on early school leaving in an Irish context. Given the unique demographic profile of the Irish population within Europe, with almost 50% of the

population under 25 years of age, there is clearly an urgent need from a medical and educational policy and planning point of view to assess the prevalence of drug use in this population and the effect that this drug use has on educational attainment (Central Statistics Office, 1997). In effect, in percentage-of-population terms, compared to the rest of Europe there are far more young people in Ireland and hence there is potentially a much greater social and political problem related to drug use.

Within this paper we pose and answer two globally relevant questions prompted by Irish ministerial comments (NACD, 2002, ministerial comment). First, what is the prevalence of heroin or opiate drug use among those of school-going age? And, second, what other drugs, most notably cannabis and Ecstasy, are being used by young people and does the use of these drugs affect their decision to leave school early?

Background to the Education System

Post-primary or secondary-school education in Ireland takes place between the ages of twelve and eighteen. In brief, secondary education is broken down between a junior cycle, which lasts for three years, and a senior cycle, which may last for two or three years. Pupils undertake Junior Certificate and Leaving Certificate examinations, respectively, at the end of these cycles. For the 1996–97 school year, 53.8% of pupils were enrolled in junior cycles and 46.2% of pupils were enrolled in senior cycles (Department of Education and Science, 1997).

A student in Ireland is defined as having left school early if they leave before the age of fifteen. Information on early school leaving in Ireland is somewhat sparse and according to an Irish Times report, figures for the 1994–95 school year show that 8000 pupils left school immediately after completion of the junior cycle examinations (Foley, 1998). There were also 2700 pupils who dropped out of second-level education before completing junior cycle examinations and 1000 pupils who did not reach second-level education at all. In total, these dropout rates are representative of approximately 2.7% of the entire second-level population or 3.7% of the second-level population aged between twelve and sixteen. For the 1996–97 school year numbers dropping out of education on completion of the junior cycle rose to 8600.

Background to Treated Drug Use in Young People

Since 1995, there has been a clear and steady increase in the numbers of young people in Ireland seeking treatment for problem drug use. In 1995, for the Dublin area alone, 8.5% (282) of treatment contacts within the Health Research Board were under the age of fifteen when they first used their primary drug of misuse. A further 64.1% (2123) of treatment contacts were aged between fifteen and nineteen when they first used their primary drug of misuse (O'Higgins, 1996; O'Higgins & Duff, 1997). The numbers of treatment contacts within the Dublin area, increased to 3994 in 1996, of these 29.3% (1170) were teenagers and 3.3% (133) were still attending school. Throughout the whole of Ireland, 83.6% (3692) of treatment contacts had reached second-level education and 57.3% (2494) of treatment contacts had left school on or before the age of fifteen (Moran et al., 1997). Within this grim picture there are some signs of improvement (Moran et al., 2001). Authors illustrate how the percentage of early school leavers among those presenting for their first treatment has in fact dropped from 51.8% in 1995 to 43.2% in 1999. However, while the percentage appears to be dropping, the actual numbers of people who present for their first treatment and have left school early has fluctuated with 969 presenting in 1995, 1011 in 1996, 671 in 1997, 733 in 1998 and 707 in 1999.

Given these known numbers of young people receiving drug treatment and the phenomenon of early school leaving there is a pressing need to provide educational and medical policy makers with estimates of the numbers of young drug users not in treatment and to endeavor to assess the effects of this drug use on the decision to leave school early.

Methods

In order to answer the first of the two key questions posed above, we provide a multisource enumeration of the known number of opiate users among young people. We then implement the

capture–recapture method to provide estimates of the hidden opiate use. That is, we provide estimates of the numbers of young people using opiates and not in contact with any of the main medical or legal services. To assess the use of other drugs and the impact on early school leaving we provide an in-depth survey of early school leavers. Essentially, we combine quantitative and qualitative methods in order to provide the best-possible answers for policy makers.

The first multisource enumeration of drug use in young Irish people is accomplished by bringing together three previously unconnected 1996 data sources: hospital admissions; police records; and the methadone treatment list. We then remove duplicate cases, both within each of the three data sources and between the three data sources. This is, individuals who appear more than once are removed from the count, thus creating a database where each individual who is known to be using opiates is counted once and once only. Within this study this approach is then repeated with two data sources from 1997. A similar approach was taken previously (Comiskey, 2001; Comiskey & Barry, 2001) in enumerating known opiate use among 15 to 54 year olds in Dublin. Once the number of young people using opiates within the three data sources has been observed, and overlaps between the data sources counted, the capture–recapture method can be implemented to provide an estimate of the numbers of Young People and Drug Prevalence 161 young people not observed or counted in any of the three data sources. Thus, we use the capture–recapture method to provide us with an estimate of the hidden prevalence of opiate use among young people.

The capture–recapture method is an indirect method that generates a prevalence estimate based on the degree of overlap between two or more separate samples of the population under study. For example, when working with three samples or data sets, the first sample provides the individuals for marking or tagging and is returned to the population. The second and third samples provide the recaptures. Using the number of individuals caught in two or three samples and the numbers caught in one sample, it is possible to estimate the number not caught in any of the three samples, thus providing an estimate of the total population size. In addition, the method allows the confidence intervals of the population estimate to be calculated. It was originally used in ecological studies to assess the size of animal populations and in human populations to ascertain the completion of census data. In epidemiology, different registers of a disease have been used as ‘capture’ samples, with names or confidential identifiers used to tag unique individuals, to assess the overlap between samples. The method is well documented and details are provided elsewhere (IWGDMF, 1995a;b).

To survey early school leavers is a difficult task. Early school leavers are by their very nature a difficult group to come into contact with and it was decided that a more pragmatic and realistic approach be taken. With this in mind we decided to survey those that had left school early but had returned to further education. The Youthreach organization was contacted and they agreed to assist us with our survey. Youthreach provides an out-of-school programme for young people in the 15 to 18-year age group who have left school early with no qualifications. Prior to the design of the final survey, two centres in Dublin agreed to participate in the pilot stage of the project, one in April 1999 and the other in June 1999. The results that were obtained from the pilot project were used to carry out further refinements to the survey. The final survey instrument consisted of the following details:

Personal details:
date of birth,
age,
gender, and
home postcode.

Details concerning education:

- location of second-level school,
- number of years in attendance at second-level school,
- year of leaving school,
- age on leaving school,
- qualifications obtained in school,
- reasons for wanting to leave school,
- frequency of absenteeism and being in trouble at school,
- any history of early school leaving by siblings, and
- reasons for wanting to return to education.

Details concerning drug use:

- perceived usage of drugs by peers in school,
- type of drugs were being used,
- if the respondent has tried using drugs what was the year of and age at first use,
- how frequently did the respondent try using different drugs,
- effect of drug usage on the decision of the respondent to leave school, and
- present drug usage of the respondent.

Subsequent to the refinement and amendment of the pilot survey form, a further thirteen centres in Dublin City and County were contacted and asked to participate in the survey. The surveys were posted to the centres and were given to the clients to complete in October/November 1999. All information provided was confidential and it was not possible to link any completed survey form with any individual. The completed surveys were then collected by the centre and returned by post. A total of 112 surveys were completed and returned. The results of the survey and estimates of the numbers of opiate users among young people are provided below.

Results

Multisource Enumeration

Data on opiate use in Dublin were obtained from three sources for 1996. These data sources included data from hospital admissions, data from the central methadone treatment list and data from police records. Information regarding date of birth, gender, first name and surname initials and home postal code were obtained in order to determine overlaps between the data sets. We found that 98 young people aged between 10 and 20 years of age in 1996 in Dublin were hospitalized for opiate use. Within the police records 1118 young people of the same age had opiates noted on their records and 524 young people were in receipt of methadone treatment. There was, however, some overlap between these data sources, with 20 people appearing in all three data sets. The number of unique individuals identified and counted between the three data sources was 1528. That is to say that in 1996 in Dublin a minimum of 1528 young people of school-going age (from 10 to 20 years of age) were using opiates and were in contact with one of the legal, medical or social services. Of these 1528 young people, 364 were female and 1164 were male. The overlaps between the three 1996 data sources are illustrated in Figure 1 below.

Data on heroin and opiate use were obtained from two sources in 1997, hospital admissions and the central methadone treatment list. No data from police records were available for 1997. Information on date of birth, first name and surname initials and gender was again available in order to determine overlaps between the data sets. We found increases in the numbers, with 106 people aged between 10 and 20 being hospitalized in 1997 as a result of opiate use, an increase of 8% from 1996. Interestingly, a much larger increase was observed within those being treated with methadone. Numbers rose from 524 in 1996 to 670 in 1997 (a 28% increase). It can be seen that 776 contacts were noted and 722 unique individuals were identified from these two data sources in 1997, as opposed to 622 contacts and 577 unique individuals in 1996. This gives an overall increase of 25% from 1996 to 1997. Figure 1 illustrates the overlaps clearly.

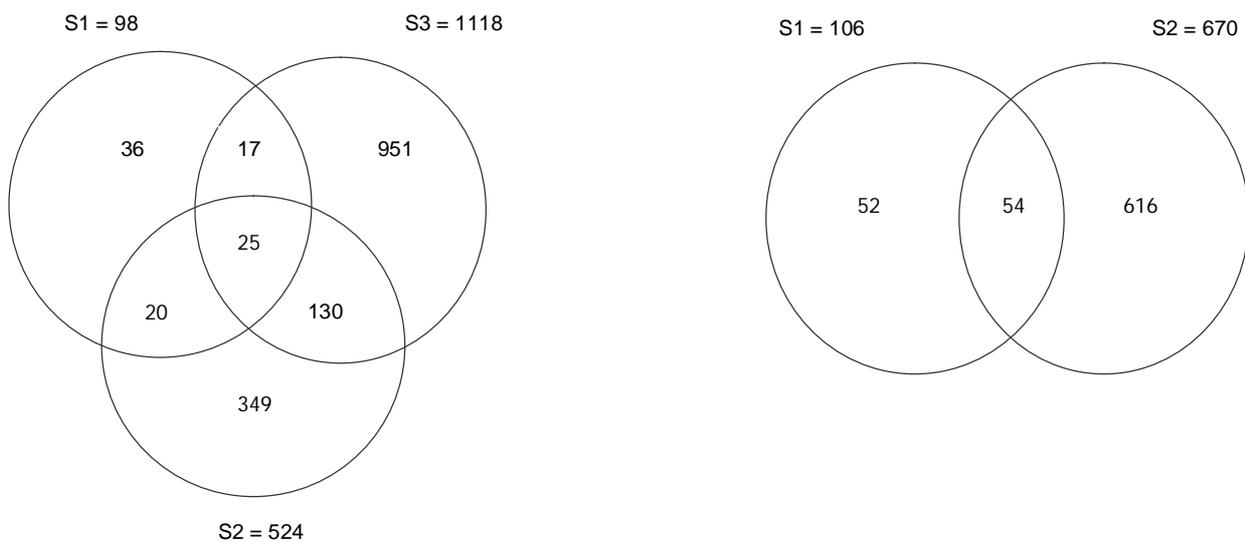


Figure 1. Overlaps for 1996 and 1997 data sources. S1, data source 1, hospital admissions; S2, data source 2, methadone treatment list; S3, data source 3, police records.

Capture–recapture Estimates of Hidden Prevalence

Using the data in Figure 1, and log-linear methods for the estimation of unknown populations, as described elsewhere (IWGDMF, 1995a;b), estimates for the number of opiate users may be obtained. Looking at the 1996 data sources a minimum of 1528 young people aged between 10 and 20 years were identified as using opiates through the three data sources. Estimates of the number of hidden opiate users varied depending whether the two-sample or three-sample capture–recapture method was used. Using three data sources gave a wider and more general definition of opiate use as a non-medical source was used. We estimated that approximately 4081 (95% CI of 3586–4692) young people aged between 10 and 20 years were using opiates in Dublin in 1996. Using only two samples we estimated that 1141 (95% CI of 901–1381) were problematic users. As stated earlier, in the raw data alone we identified 1528 general opiate users of which 577 could be defined as problematic users. We were unable to derive a three-sample estimate for 1997, but we were able to identify an increase in the numbers. In 1997, 722 problematic opiate users were identified through the raw data alone and using the two-sample capture–recapture method we estimated that there were 1315 problematic users in 1997. A summary of results for known and hidden prevalence of opiate use in 1996 and 1997 is provided in Table 1 below.

It is interesting to note that the estimated total number of young problematic opiate users in Dublin increases by approximately 15% from 1141 in 1996 to 1315 in 1997. This increase may be due to an increase in the provision of treatment places available or may reflect a general international trend. However, as the known number has also increased we can see that the percentage hidden has decreased slightly from 564–1141, or 48%, in 1996 to 593–1315, or 45%, in 1997. This has positive implications from a planning viewpoint and it is encouraging to see the hidden population decrease. More details of the statistical models and their goodness of fit with gender distributions are available (Comiskey & Miller, 2000)

Table 1. Summary of the three- and two-sample capture–recapture estimates of the known and hidden numbers of young opiate users in Dublin in 1996 and 1997 between 10 and 20 years of age

| Year/number of samples | Definition of use | Known number | Estimated number | Estimated total | 95% CI for total |
|------------------------|---|--------------|------------------|-----------------|------------------|
| 1996/3 | All opiate users | 1528 | 2553 | 4801 | 3586–4692 |
| 1996/2 | Problematic opiate user only ^a | 577 | 564 | 1141 | 901–1381 |
| 1997/2 | Problematic opiate user only ^a | 722 | 593 | 1315 | 1075–1555 |

^A A problematic opiate user is defined as a user who is at medical risk.

Survey Results

A total of 112 surveys were completed and returned. Of the thirteen centres contacted, five took part in the final survey giving a response rate of approximately 47%. Each centre that made a return was given a unique number and within that each individual survey form was then numbered. Information from the survey was then coded and entered into the statistical analysis package SPSS 9.0. A total of 9520 data items were entered and validated. Basic descriptive statistics were computed to provide an overview of those who completed the survey forms.

The numbers of males and females responding to the survey were 45 and 63 respectively (4 missing), giving a ratio of 0.7 : 1. The mean age of the respondents was 17.48 years with a standard deviation of 2.05 years and a range from 14 to 23 years. The mode was 16 years. Respondents resided in all postal areas of the city. With regard to leaving school early, 79.1% of the male respondents and 62.5% of the female respondents had left school on or before the age of 15 years. The mean ages for leaving school were 14.8 years for males and 15.0 for females. Of those who left school on or before the age 15 it was observed that 76% had left school without any qualifications. Reasons for leaving school, which varied, are illustrated in Figure 2. Respondents were also asked their reasons for returning to education. Responses varied, however the majority (50) stated that they wished to get a job.

Number of respondents

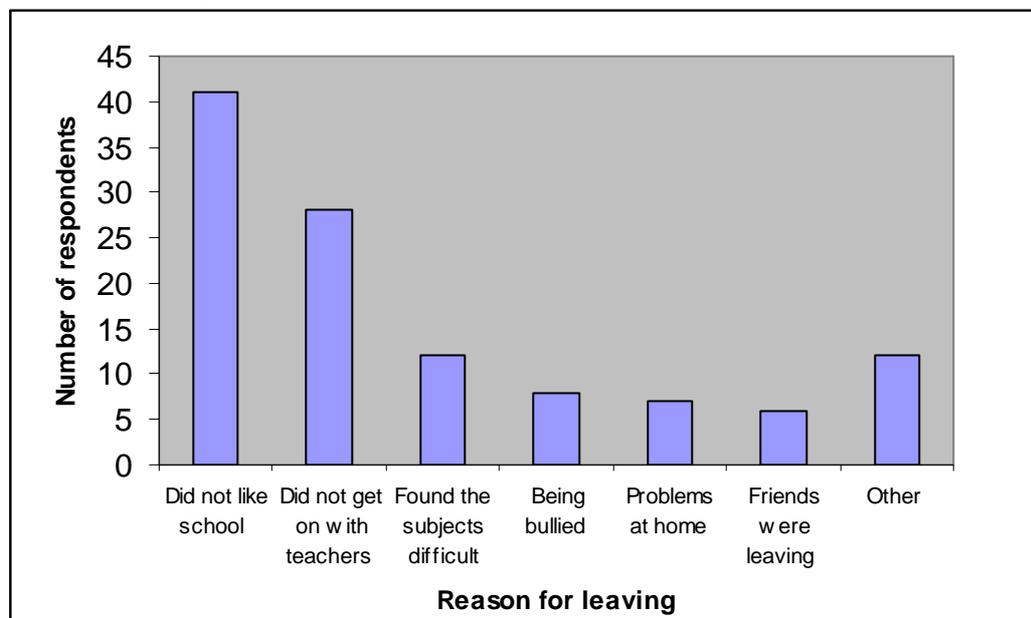


Figure 2. Reasons for leaving school before the age of 16 years.

Prior to questions on individuals' drug use, respondents were asked about drugs used by their peers. It was found that 32% of males and 18% of females reported drug use as very common among their peers. In addition, 59% of males and 53% of females said that at least half of their

friends were using drugs during their time in school. The two most common drugs being used by peers were cannabis (used by 82.5% of peers) and Ecstasy (used by 46.6% of peers).

In response to questions on whether the respondent themselves had ever tried using drugs 76% of males and 64% of females said that they had tried drugs. The mean age at which respondents had first tried drugs was 13.7 years (SD 1.75 years.) for males and 14.7 years (SD 2.17 years) for females. The medians were 13 and 15 years respectively. With regard to using drugs before they had left school 75% of males and 57% of females had used drugs prior to leaving school. Of those pupils who had tried using drugs before they had left second-level school, 46.5% of respondents noted that their drug use affected them, at least sometimes, while they attended school. However, only six respondents said that their drug use had a secondary effect (that is, it was not the main reason) on their decision to leave school whereas two respondents said that it had a definite effect. When asked if they had ever tried using drugs since leaving school 89 respondents answered with 37 (41.6%) saying yes, they had used drugs a few times, and 26 (29.2%) saying that they were currently using drugs of some sort.

Respondents were then asked about the types of drugs that they were currently using and how often they were using them. A summary of the results from this question are provided in Table 2 below. A total of 91 respondents answered each of these questions. In order to check the validity of the answers supplied the name of a non-existent drug was included in the list. Only one respondent said that they had used this drug.

Table 2. Frequency and type of drug that respondents were using at time of survey

| Type of drug | Use once a day | Use once a week | Use once or twice a month | Use a few times a year | Tried once | Zero or never use |
|----------------|------------------------|-----------------|---------------------------|------------------------|------------|-------------------|
| Cannabis | 43 (47.3) ^a | 10 (11.0) | 4 (4.4) | 3 (3.3) | 4 (4.4) | 27 (29.7) |
| LSD | 0 (0.0) | 0 (0.0) | 3 (3.3) | 6 (6.6) | 4 (4.4) | 78 (85.7) |
| Ecstasy | 0 (0.0) | 15 (16.5) | 6 (6.6) | 4 (4.4) | 6 (6.6) | 60 (65.9) |
| Amphetamines | 0 (0.0) | 1 (1.1) | 6 (6.6) | 6 (6.6) | 1 (1.1) | 77 (84.6) |
| Tranquilizers | 1 (1.1) | 0 (0.0) | 1 (1.1) | 1 (1.1) | 2 (2.2) | 86 (94.5) |
| Inhalants | 1 (1.1) | 2 (2.2) | 0 (0.0) | 3 (3.3) | 4 (4.4) | 81 (89.0) |
| Cocaine/crack | 1 (1.1) | 2 (2.2) | 4 (4.4) | 1 (1.1) | 3 (3.3) | 80 (87.9) |
| Heroin/opiates | 1 (1.1) | 1 (1.1) | 3 (3.3) | 1 (1.1) | 1 (1.1) | 83 (92.3) |
| Methadone | 1 (1.1) | 0 (0.0) | 0 (0.0) | 3 (3.3) | 1 (1.1) | 86 (94.5) |
| Steroids | 0 (0.0) | 1 (1.1) | 1 (1.1) | 1 (1.1) | 1 (1.1) | 87 (95.6) |

^a Number (and percentage) of respondents.

Discussion

While this survey reveals some very interesting results on the nature and extent of drug use both prior and subsequent to the decision to leave school early it must be remembered that the survey is based on a small sample size and we cannot say with certainty that this is a representative sample of the population. In addition, this sample was drawn from a group of students who had returned to further their education and thus was not necessarily the most chronic or inaccessible group. However, we can say that this survey does provide a good initial picture of drug use in this difficult-to-target population. As stated earlier, drug use by its very nature is a difficult thing to measure and early school leavers are a difficult group to contact once they have left school. For those reasons it was decided to target people who had left school early but had subsequently decided to return to further education. This fact alone separates this particular group from the wider group of all early school leavers. In spite of these limitations, some very interesting results emerged from the survey.

It is interesting to note that when asked if they were currently using drugs 89 respondents answered the question and only 26 (29.2%) said that they were currently using drugs. However,

this contrasts with replies given by respondents when they were then asked what types of drugs they were currently using and how often, 91 of the 112 respondents answered this question. While the majority of the respondents were not using drugs 64 (70.3%) had used cannabis with 43 (47.3%) of these students using cannabis on a daily basis. This is a much higher figure than the number given in the earlier question and leads one to believe that using cannabis is not considered to be 'using drugs'. This suggests that further qualitative studies may be required to look at students' perceptions and interpretations of the meaning of 'drug use'.

It is also interesting to note that 15 (16.5%) of the students were using Ecstasy on a weekly basis, which may be related to the club or dance drug scene. With regard to the more serious drug use we found that two different individuals (2.2% of those who responded) were using heroin, opiates or methadone on a daily basis. This prevalence rate of 2.2% is similar to estimates of opiate use derived elsewhere by Comiskey (2001), in her multisource enumeration of known opiate use among 15 to 54 year olds living in Dublin in 1996. The author found a known prevalence of 1% in 15 to 54 year olds with this rising to 2.5% in males aged 15 to 24.

Finally, in the light of results of both known and estimated prevalence of opiate use in this study and the survey results discussed above there is clearly a need for further study into the links with drug use and early school leaving. Results from this study and in particular within the survey, suggest a possible link, but not an obvious one of which students themselves are aware. When students were asked directly their reasons for leaving school early none mentioned drugs, but they tended to mention the fact that they did not like school or the teacher (Figure 2).

However, when asked explicitly if drug use effected their decision to leave school early we saw that several students answered in the affirmative. This, coupled with a known minimum prevalence of 1528 young people of school-going age (from 10 to 20 years of age) using heroin or opiates and in contact with one of the legal, medical or social services in Dublin in 1996, indicates the scale of the problem and the necessity for further research and clarification on the true relationship between drug use, young people and early school leaving.

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