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LICIT AND ILLICIT DRUG USE IN AMSTERDAM II

Report of a household survey in 1994 on the prevalence of drug use among the population of 12 years and over

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Representativeness

10.1 Introduction

In our previous report (Sandwijk et al. 1991) a lot of attention was paid to the data-quality issue. In that report, special attention was given to the variety of 'solutions' chosen by researchers who are trying to solve their methodological problems, in particular their non-response problems. In discussing the latter, we elaborated upon strategies for approaching the persons in the sample, as well as the weighting and statistical imputation strategies applied in many surveys, and focused in some detail on the statistical imputation methods that were applied in the US National Household Survey on Drug Abuse. Reasons were also given for our decision to calculate only the so-called 'logical' imputation scores (missing values were replaced by real values if these real values could be deducted logically) and to refrain from statistical imputation of 'unknown' values on the basis of the known 'other' characteristics of the response group. We will not repeat all the reasons here, but instead will focus on the new information gathered and on some additional methodological investigations. In doing so, we will illustrate the fact that both the Ministry and the University regard highlighting the data-quality issue a matter of major concern. In this report we will pay attention to two data-quality aspects that we did not investigate before. Chapter 11 will deal with the effects of the application of different approaches to obtain the information. In Chapter 12, which can be regarded an extension of Chapter 10, we will deal with the non-response problem in depth. The Registration Commission of the Municipality of Amsterdam (whose job it is to protect the privacy of the City's inhabitants) made an exception to its usual rule and granted us permission to re-approach those who were initially interviewed in our survey project but who refused to cooperate. Since the best method to overcome the non-response problem is a re-approach method, the response-information of this non-response category is extremely important. It offers the opportunity to estimate the specificity of the non-response group relative to the response group, and to get a better view of the representativeness of the response group.

But first we will look at the basic information on response and non-response. In Section 10.2 we will present a total scheme of information regarding the theoretical and empirical population, the gross and net sample, frame errors, the response and non-response and the categories we distinguished within the response and non-response groups. In Section 10.3 the (dis)similarities between the response

and non-response groups will be discussed. The overview will be concluded in Section 10.4, where we will (again) pay attention to the consistency of the instrument we applied and to the importance of it in the context of analyses of the dynamics of the use of drugs.

10.2 Population, sample, response and non-response groups

The sample was drawn from the Municipal Population Registry of Amsterdam, as was done in former years. While that frame may be of relatively good quality compared to other sample frames, it is well-known that metropolitan population registers are increasingly 'contaminated'. Sometimes incidents occur which reveal some of the failures of such registries. A recent example of such an incident occurred in Amsterdam Bijlmermeer a few years ago, when an aeroplane crashed into a pair of residential apartment blocks. It turned out to be extremely difficult to find out who had lived in those blocks on the basis of the population registry. It must be pointed out, though, that the blocks involved were known as being places in which many illegal, non-registered persons (such as asylum-seekers who had been refused a residence permit) could find a place to live. Often it is estimated that about ten per cent of the population registry would not parallel the real situation. The information given in Table 10.1 shows us some empirical information about these aspects.

Table 10.1 shows us the frame errors that were encountered during the survey carried out in Amsterdam in 1994, and also some information about the response and non-response groups.

Something over ten per cent of the addresses appeared to be invalid in one way or another, and had to be labelled as frame error. Of course a number of these errors, perhaps as much as half, had nothing to do with the bad quality of the population registry, but must be ascribed to the time lag between the moment the gross sample was drawn and the moment of planned interviews. Even though we worked with a team of some one hundred interviewers, we could not of course approach the approximately 4,500 persons we planned to interview face-to-face in just a few weeks. It took in fact about four months (April-August 1994) to obtain the results presented in this paper. Earlier research had shown that the time of year interviews are held is unrelated to the type of response (Sandwijk et al. 1991).

The most elementary information in this respect shows a response rate, after corrections for frame errors and non-used addresses, of just over 50 per cent. Of all valid addresses, 30 per cent refused to cooperate, and 14 per cent was repeatedly not at home. The response percentage is the result of a supreme effort to achieve an as high as possible percentage. Repeated attempts to interest as many persons as possible, in which we tried to reach persons at different times of the day (morning, afternoon, evening) and on several days over a period of a couple of weeks, did not result in really satisfactory response percentages. The

Table 10.1 Frame errors, unused addresses, responses and non-responses

gross sample	abs.	perc.
frame errors	1 078	10.8
non-used addresses	236	2.4
response	4 364	43.6
non-response	4 322	43.2
total gross sample	10 000	100.0

net sample	abs.	perc.
response	4 364	50.2
non-response	4 322	49.8
total net sample	8 686	100.0

frame errors	abs.	perc.
moved	360	33.4
unknown at address	279	25.9
vacancy	52	4.8
address not found	104	9.6
deceased	47	4.4
other	236	21.9
total frame errors	1 078	100.0

non-response categ.	abs.	perc.	perc. of valid adresses
refusal	2 627	60.8	30.2
not-at-home	1 233	28.5	14.2
illness	101	2.3	1.2
language problems	48	1.1	0.6
other	313	7.2	3.6
total non-response	4 322	100.0	49.8
total response	4 364		50.2
total valid addresses	8 686		100.0

figures that were realized four years ago were: just over 55 per cent response, 25 per cent refusals, and almost 13 per cent not at home. The differences between the results obtained in 1987 and 1990 on the one hand and 1994 on the other could not be ascribed to differences in terms of strategies applied, since in general they were identical to those employed in 1987 and 1990 (Sandwijk et al. 1988; Sandwijk et al. 1991). Nevertheless, the results are a little worse compared to four years ago. The only important factor we think may have affected the response was the slightly different group of interviewers we used - due to the hiring of a different bureau to manage the day-to-day activities related to the fieldwork - and the level of payment to these interviewers. Compared to former years, the group of interviewers consisted of somewhat older persons, a higher degree of whom dropped out and had to be replaced. Furthermore, there appeared to be a close relation between the level of incentives offered to the interviewers and the efforts they were prepared to make. This is the reason why the incentives were raised the moment it became clear that the response rate tended to be very low.

Although the results in terms of response percentage remain relatively disappointing, they were not alarming, as we will see later on in this and the following chapters. Of course, we were happy to be able to pay a lot of attention to the non-response issue proper. In Chapter 12 we will give the results of the intensive, non-response research follow-up project, carried out in the autumn of 1994 among a sample of those who were repeatedly not at home and those who refused to cooperate in the first run.

In the next section, however, we will first show the information we used to judge the representativeness of the response group relative to the sample and to the population in general using information derived from the population registry

itself. The non-response survey that forms the basis for the analyses in Chapter 12 may be of some help in refining the estimation of the representativeness of the response group.

10.3 Representativeness of the response group

The registry-sample-response relation is shown in Table 10.2. As noted before we aimed at a total response of approximately 4,400 persons. To reach that goal, some 8,700 valid addresses had to be approached and some 9,800 persons had to be randomly selected from the population registry (in fact 10,000 persons of 12 years or older were selected, but of these over 200 were not used). The sample we compared with the population numbered 8,686 persons. The final response was 4,364. The data compare the population, sample and response group for various items. These items are age, gender, residential district, marital status, household status, settlement date, and various ethnically defined classifications.
The comparison is based on the information as recorded in the population registry. For example, the category 30-34 years old constitutes 13.0 per cent (N=81,778) of the entire Amsterdam population of 12 years and older. In the sample that was drawn, this age category constituted 13.5 per cent (N=1,173). In the response group we calculated a percentage of 13.0 (N=576). Age was not derived from information supplied by the interviewee, but from that recorded in the registry.
As can be concluded from the information presented in Table 10.2 the differences between the sample and the population are only minor. Despite the relative low response rate, the same conclusion can be drawn with respect to the response-sample and response-population relations. The response group appears to be a good representation of the population. There are only some (small) under- or over-representations. People aged 25-29 are slightly over-represented in the response group (compared to the sample, but not if compared to the population), and those 20-24 and 50-59 years old are slightly under-represented. The spatial distribution of the response group across Amsterdam nicely fits the distribution of the population. And even rather detailed information, such as the percentage of divorced persons, reveals only very small differences between the population (10.2%), the sample (10.3%) and the response group (10.1%).
In fact, the only substantial differences concerned the field of country of origin/ birth. People originating from non-Dutch countries (from Turkey and Morocco, and from Surinam or the Antilles in particular) are under-represented in the response group. The under-representation rate for people from Surinam/Antilles is ten per cent, for people from Turkey and Morocco approximately thirty per cent. Since Moroccan and Turkish persons make up only 7.6 per cent of the entire population of 12 years or older, and almost five per cent in the response group, we decided not to weigh the data-set on the basis of this, overall, small effect. The other important reason why we did not do that is that ethnic bias described here does not differ from that measured four years ago, when we also decided not to weigh.

Table 10.2 Population according to registry, sample and response group, by age group, gender, residential district, marital status, household status, country of birth, nationality, ethnicity and year of settlement

age group	(N=629 064) popul.	(N=8 686) sample	(N=4 364) response
12 - 14 years	2.6	2.1	2.4
15 - 19 years	4.9	4.8	5.7
20 - 24 years	9.4	8.2	8.1
25 - 29 years	13.5	11.9	13.1
30 - 34 years	13.0	13.5	13.0
35 - 39 years	10.2	10.4	10.6
40 - 49 years	16.0	16.6	16.8
50 - 59 years	10.2	10.9	9.6
60 - 69 years	8.6	8.9	8.8
70 years a.o.	11.6	12.6	11.9
chi square	58.8 ***	23.6 **	
gender	popul.	sample	response
male	48.9	47.6	46.4
female	51.1	52.4	53.6
chi square	5.5 *	2.7	
residential district	popul.	sample	response
A binnenstad	11.7	10.9	11.5
B west.haven	0.0	0.0	0.0
C spaarnd.b.	4.6	4.3	4.5
D oud west	4.9	5.1	4.8
E pijp	5.1	5.4	6.0
F oost	4.6	4.6	4.1
G indische b.	4.0	4.2	4.0
H bos & lommer	4.3	4.0	3.5
J admiral.b.	5.1	5.0	4.7
K zuid	7.6	7.6	8.1
L rivierenbuurt	4.0	4.3	4.7
M watergr.meer	3.3	3.5	3.4
N noord	11.7	11.8	11.8
P slotermeer	4.9	4.6	4.8
Q osdorp	5.0	4.4	4.2
R slotervaart	4.8	5.5	5.1
S buitenveldert	2.8	2.9	2.7
T zuidoost	11.6	11.7	12.1
chi square	30.6 *	18.0	
marital status	popul.	sample	response
unmarried	46.6	44.6	46.6
married	36.3	38.0	36.6
divorced	10.2	10.3	10.1
widowed	6.9	7.2	6.7
chi square	15.6 **	7.7	

Table 10.2 Population according to registry, sample and response group, by age group, gender, residential district, marital status, household status, country of birth, nationality, ethnicity and year of settlement (continued)

household status	popul.	sample	response
head of family	22.9	24.0	23.9
partner	16.4	17.3	17.0
child	10.9	10.6	11.1
single/other	49.8	48.0	48.0
chi square	15.9 **	1.2	
country of birth	pop.	sample	response
Netherlands	72.2	74.4	78.1
Surinam/Antillean	8.0	8.0	7.2
Morocco	4.4	3.8	2.9
Turkey	3.2	3.1	2.0
other	12.2	10.6	9.8
chi square	28.8 *	41.5 ***	
nationality	pop.	sample	response
Dutch	84.5	82.1	86.0
Surinamese	0.9	0.7	0.5
Moroccan	4.0	3.5	2.6
Turkish	2.9	2.7	1.7
other	7.7	11.0	9.2
chi square	136.2 ***	48.6 ***	
ethnicity	pop.	sample	response
Dutch	72.2	75.1	79.6
Surinamese	8.0	7.7	6.9
Moroccan	4.4	3.5	2.6
Turkish	3.2	2.8	1.8
other	12.2	11.0	9.2
chi square	41.8 ***	54.1 ***	
settlem. date	pop.	sample	response
before 1969	36.5	42.3	42.2
1969 - 1978	17.0	15.1	15.0
1979 - 1988	23.8	22.3	22.6
1989 - 1994	22.7	20.3	20.1
chi square	129.8 ***	0.6	

Significance test used: Chi square (with sample frequencies as expected frequencies)

* $p < .05$ ** $p < .01$ *** $p < .001$

10.4 Conclusion: still a consistent instrument

In 1987, when we carried out the first project aimed at measuring the prevalence and incidence of drug use, we already knew we would have to be patient for a while. We would have to wait until 1990 and beyond, to 1994, before we would we really be able to report something of value about drug-use behaviour.
Any empirical 'evidence' resulting from measurements even if using such large-scale instruments as the survey applied here must be regarded a pale shadow of the real world. Any survey can ultimately be criticized for its moderate response, its instruction strategy, the approach, frame-errors, the way questions are asked, the people involved, and so forth. And although we again tried to operate as conscientiously and as carefully as possible to avoid all such criticism, in the end we agree with such a notion.
For that reason, already in 1987 we decided to pay attention to not only the quality of the instrument itself, but also to the consistency of the instrument in the long run. We therefore tried to keep the instrument as it was in former measurements. In short: a constant, unchanged, consistent instrument had to be applied. The instrument may be somewhat biased, but as long as it has not been changed - and assuming the bias is unchanged too - we at least can tell something about the changes going on.

Of course it is an illusion to think the instrument can really be kept unchanged in all its details. Sometimes a researcher, who played an important role in instructing interviewers, will no longer be able to join the project, or perhaps a new fieldwork organization has to be hired. On top of this, the interviewers who were involved in former years may not be the same as those who played a role in later years. Also specific events may have occurred, that may effect the results, and so on. We referred to some of these changes as possibly affecting the response rate.
Overall, however, we assume these fluctuations will not have disturbed too greatly the consistency of the entire instrument applied. A comparison of the biases in the response-sample relation between 1990 and 1994 gives us an example of the consistency of the instrument, and also of its biases. In both 1990 and in 1994 the response-sample-population relations and deviations were most comparable. The only under-representation worth mentioning appeared to be of those who were born outside the Netherlands. The under-representation in 1994, however, was not different from that of 1990.
We can therefore conclude that the instrument is more or less constant, and that the biases too are probably constant. The changes in the use of drugs are therefore expected to be real changes, that must be ascribed to age cohort effects and other factors rather than to the instrument applied.

At this stage we think we should point out that only registered persons were included in the research. Tramps, street-persons, drug tourists and prisoners are not registered in the population registry, and therefore were not included in the survey.