

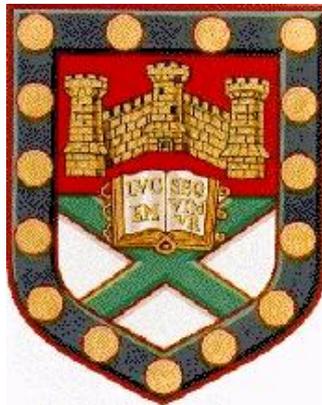
THE NATIONAL DRIVER IMPROVEMENT SCHEME

- A psychological evaluation -

C.N.W.Burgess BSc (Hons) MSc

School of Psychology

University of Exeter



Funded by the
**Department of the Environment,
Transport and the Regions**

ACKNOWLEDGEMENTS:

Sincere thanks are due to the following for their help and advice, and without whose enthusiasm and commitment the project could never have been completed:

Exeter University	Professor Paul Webley
DETR	Matthew Joint (RSD4)
Devon & Cornwall Constabulary	Chief Inspector Ian Aspinall, Inspector Fred Reynolds
Devon Drivers' Centre:	Daniel McCarthy, Peter Gimber, Marion Deacock, Martin Gould
Worcestershire County Council <i>(formerly Hereford & Worcester):</i>	Roger Woodward, Diane Hall
Hertfordshire County Council:	Ian Powell, Guy Bradley
Shropshire County Council:	Colin Pettener, Eileen Taylor
Staffordshire County Council:	Stuart Hallett, Neil Davies
Herefordshire County Council:	Richard Glasspoole
London Borough of Barnet:	Theo Panayi
Bexley Council	Simon Ettinghausen
British School of Motoring:	Ann Nelmes
University of Manchester	Dr Dianne Parker
Metropolitan Police Service	Carolyne Bridgeman

And all the Approved Driving Instructors who teach on the NDIS courses included in the study, and who ensured that their clients completed the questionnaires.

CONTENTS:**EXECUTIVE SUMMARY**

1.1	AIMS OF THE EVALUATION STUDY	6
1.2	CLIENT PROFILES	6
1.3	CLIENTS' MOTIVES AND PERCEPTIONS OF NDIS	7
1.4	ATTITUDE MODIFICATION	7
1.5	BEHAVIOUR MODIFICATION	8
1.6	GROUP DIFFERENCES	8
1.7	LONDON EXTENSION: OPERATIONAL ASPECTS OF SERVICE PROVISION	10
1.8	NON-RESPONDENTS	11
1.9	DISCUSSION	11
	FURTHER RECOMMENDATIONS	12

SECTION TWO: INTRODUCTION

2.1	BACKGROUND TO EVALUATION STUDY	13
2.2	SITE SELECTION	14
2.3	TIME-SCALE	14
2.4	CONTROL GROUPS	15
2.5	METHODOLOGY	15
2.6	RESPONDENTS' INCENTIVE	17
2.7	MEASURES OF COURSE EFFECTIVENESS	17
2.8	CLIENT PERCEPTIONS	18
2.9	OPERATIONAL ASPECTS OF SERVICE PROVISION (METROPOLITAN POLICE AREA)	18

SECTION THREE: PARTICIPANT PROFILES

3.1	SERVICE PROVIDER CONTRIBUTION	19
3.2	RESPONSE RATES	19
3.3	CLIENT PROFILES	22
3.4	SECTION SUMMARY	25

SECTION FOUR: NDIS: CLIENT PERCEPTIONS

4.1	AVOIDING COURT	26
4.2	OPPORTUNITY TO IMPROVE	27
4.3	TREATMENT BY THE AUTHORITIES	28
4.4	AVAILABILITY OF COURSE	28
4.5	SECTION SUMMARY	28

SECTION FIVE: ATTITUDE MODIFICATION

5.1	INTRODUCTION	30
5.2	PRE-COURSE ATTITUDES	30
5.3	SHORT-TERM EFFECTS	32
5.4	LONGER-TERM EFFECTS	35

5.5	SECTION SUMMARY	35
SECTION SIX: SELF-REPORTED BEHAVIOUR		
6.1	INTRODUCTION	36
6.2	INAPPROPRIATE DRIVING BEHAVIOUR	36
6.3	ACCIDENT INVOLVEMENT	39
6.4	SELF-REPORTED NEAR MISSES	39
6.5	SECTION SUMMARY	40
SECTION SEVEN: GROUP DIFFERENCES		
7.1	INTRODUCTION	41
7.2	BASIS FOR CATEGORISATION	41
7.3	GENDER DIFFERENCES	42
7.4	AGE DIFFERENCES	45
7.5	AREA OF RESIDENCE	49
7.6	PROFESSIONAL DRIVERS	51
7.7	RESENTFUL CLIENTS	52
7.8	SECTION SUMMARY	56
SECTION EIGHT: LONDON SERVICE PROVIDERS		
8.1	GENERAL	59
8.2	COURSE PROVISION	60
8.3	POST-COURSE FOLLOW-UP	63
SECTION NINE: NON-RESPONDENTS		
9.1	INTRODUCTION	65
9.2	DEMOGRAPHIC DIFFERENCES	65
9.3	CLIENT PERCEPTIONS OF NDIS	67
9.4	SHORT-TERM EFFECT MEASURES	67
9.5	ACCIDENT INVOLVEMENT (SELF-REPORTED)	69
9.6	SELF-REPORTED VIOLATIONS	70
9.7	SECTION SUMMARY	71
SECTION TEN: DISCUSSION		
10.1	INTRODUCTION	72
10.2	CLIENTS' PERCEPTIONS OF NDIS	72
10.3	ATTITUDE MODIFICATION	72
10.4	BEHAVIOUR MODIFICATION	73
10.5	CHANGES WITHIN SPECIFIC GROUPS	73
10.6	NDIS CLIENTS: DANGEROUS AND CARELESS, OR UNSKILLED AND IMPAIRED?	75
10.7	DRIVING STYLE	76
10.8	CHANGING DRIVING BEHAVIOUR IN THE LONGER-TERM	76
10.9	IMPLICATIONS FOR COURSE DESIGN	77
10.10	SECTION SUMMARY	79
1.5	BEHAVIOUR MODIFICATION	79

10.11	REFERENCES	79
-------	------------	----

SECTION ELEVEN: FUTURE DIRECTIONS

11.1	INTRODUCTION	80
11.2	SOCIAL DESIRABILITY	80
11.3	ISSUES REGARDING CONTROL GROUPS	80
11.4	ATTITUDES TOWARDS SPEEDING OFFENCES AS INDICATORS OF 'SAFE' DRIVING	83
11.5	OBSERVED OUTCOMES	83
11.6	CONCLUSIONS	84
11.7	COMMENT	86
11.8	RECOMMENDATIONS	86
11.9	REFERENCES	87

APPENDIX I: SITE VISITS

APPENDIX II: NDIS CONTROL GROUPS

APPENDIX III: QUESTIONNAIRE SCHEDULES

APPENDIX IV: COVERING LETTER

APPENDIX V: ADDITIONAL STATISTICAL TABLES

APPENDIX VI: DIRECTORY OF PARTICIPATING SERVICE PROVIDERS:

APPENDIX VII: THE DEVON MODEL

SECTION ONE: EXECUTIVE SUMMARY

1.1 Aims of the Evaluation Study

The aims of the Evaluation Study are to:

- Evaluate remedial programmes for driving offences
- Determine the effectiveness of the National Model training methods
- Ascertain the immediate psychological impact of the training methods
- Establish the longer-term behavioural impact of the training methods, including assessment of the incidence of re-offending
- Consider possible changes to the National Model, in the light of new theoretical developments and recommendations based on a review of existing courses

1.2 Client profiles

- 1,821 clients contributed to the study, attending NDIS courses at eight Service Provider sites over a twelve month period.
- Response rate for the first three measures was 90-95%.
- Response rate for the three-month follow-up was good at 40.7%.
- The typical NDIS client is young (over 20% fall into the 17-21 year-old category), male (70% of sample), inexperienced (almost 25% passed their driving test within the last two years) and covers an average of 10,000 miles per year (coinciding with the mean National annual mileage).
- Individuals who drive for a living are over-represented, but they also record a significantly higher annual mileage (27,000 miles, on average, compared with 9,000 for 'domestic and pleasure use' drivers).
- Clients from urban and rural areas appear equally well represented.
- Clients attending NDIS appear to record a significantly higher rate of accident involvement than the general population. However, this is most likely due to the infrequency of such an occurrence, combined with the fact that the sample are largely selected on the basis that they have been involved in an accident (a small proportion are not accident-involved, but have been involved in what police refer to as an 'incident'; for example, a 'near-miss').

1.3 Clients' motives and perceptions of NDIS

- Most clients (over 70%) perceive NDIS as a way of avoiding court prosecution.
- Less than one third of the whole sample felt that they had been treated unfairly by the authorities, and the majority (almost 90%) felt that the course offered them an opportunity to look at areas of their driving that may need attention.
- Of clients attending the three London NDIS courses, half of those who felt that NDIS was "not a reasonable method of disposal for the type of offence of which they were accused", changed their minds after the course.
- Although seen as a way of avoiding a court appearance, and the accompanying likelihood of penalty points and a fine, most drivers were optimistic about the opportunity to improve particular aspects of their driving. It seems apparent that a large proportion of the drivers themselves recognise a need for some form of retraining, particularly those in the older age categories.

1.4 Attitude modification

- The immediate effect of the course on attitudes towards traffic violations is an overall significant improvement in the clients' general safety-orientation. The overall Driving Attitudes Questionnaire score becomes significantly more appropriate when tested immediately after the course.
- Over half of clients demonstrate an improvement in attitudes after the course, but those that do not show an improvement had significantly more appropriate attitudes to begin with.
- Attitudes towards the offences of drink-driving, dangerous overtaking, close-following (tailgating) and speeding were examined. Prior to the course, differences between the perceived seriousness of the four offences are evident. Speeding is not considered to be as serious as drink-driving, dangerous overtaking or close-following.
- Immediately after the course, differences in attitudes towards different offence types are substantially reduced, predominantly due to a significant increase in the perceived seriousness of speeding offences.
- Three months after the course, the change in attitudes towards speeding offences is still significant, with the clients displaying more appropriate, safety-orientated attitudes.

1.5 Behaviour modification

- Significant reductions in the self-reported frequency of commission of lapses errors and violations (see p.14) are evident after the course.
- High correlations between before and after measures suggest that it is largely the same clients who are committing these acts of inappropriate behaviour before and after course attendance, but they are committed less frequently.
- No differences in self-reported near-misses are evident before and after the course.
- A significant reduction in self-reported accident involvement may be an artefact of the method of data-collection. Collisions are extremely infrequent events, so given a longer follow-up period, the effect of this artefact would be substantially reduced, allowing any true effect to be observed. Provision has been made in the methodology for a two-year follow-up.

1.6 Group differences

Gender

- Male clients record roughly double the annual mileage of female clients.
- Male clients' attitudes are less safety-orientated than those of female clients before and immediately after the course, and after three months.
- Improvements in attitude after the course are greater for male clients than for female clients.
- Compared with males, female clients report more frequent lapses before and after the course, while male clients report more violations than do female clients.
- Male clients report less frequent lapses and errors after the course, compared with pre-course measures. Female clients report fewer violations.
- Female clients consider the course to be more of an opportunity to improve their driving than do males.

Age

- Older clients report more appropriate attitudes towards traffic violations before and after course attendance than do younger clients. This difference is reflected mainly in differing attitudes towards speeding and dangerous overtaking offences

- The effects of course attendance on changing attitudes do not vary with age.
- Younger clients report more violations than do older clients.
- Younger clients report more accidents in the two years before course attendance than do older clients.
- Clients in their mid-50s and older appear to be more optimistic regarding the opportunity afforded by the course to improve their driving

Area of residence

- Short-term effects of the course on improving attitudes are stronger for rural clients than for urban clients, although both groups show a significant improvement.
- Rural clients demonstrate an improvement in attitudes towards 'close-following' violations after the course, whereas the attitudes of urban clients become less appropriate towards this type of violation after the course.
- Although both groups demonstrate an improved attitude towards speeding offences, three months after the course, urban clients have retained more of this improvement than rural clients.

Professional drivers

- Clients who are professional drivers tend to be male, young and travel further than domestic/pleasure clients.
- Professional driver clients report more frequent violations prior to attending the course, than domestic/pleasure driver clients.
- After course attendance, there are no differences between groups in terms of violation frequency.
- Professional driver clients record a higher rate of accident involvement since passing their driving test and in the two years prior to course attendance.
- Professional driver clients maintain less appropriate attitudes before and after course attendance than other clients, this difference mainly reflected in attitudes towards speeding offences. However, there is no difference between these types of client in terms of the short-term effects of the course on attitudes.

Resentful clients

- Male clients consider NDIS to be less of an opportunity to improve than do female clients.

- Younger clients also consider NDIS to be less of an opportunity to improve than do older clients.
- Clients from urban areas consider that they have been more unfairly treated than clients from rural areas.
- Clients who consider NDIS to be an opportunity to improve commit more frequent lapses, but less frequent violations, prior to course attendance.
- Clients who consider that they have been treated unfairly commit less frequent errors, but more frequent violations prior to course attendance.
- Clients who consider NDIS to be an opportunity to improve have been involved in fewer accidents over the previous two years, and since passing their driving test, than those who do not consider NDIS to be an opportunity.
- Clients who feel unfairly treated have been involved in fewer accidents in the previous three months and since passing their driving test, than those who feel they have been treated fairly.
- Clients who feel unfairly treated, and those who do not consider NDIS to be an opportunity, have less appropriate attitudes towards traffic violations than those who feel fairly treated and optimistic about the opportunity to improve that NDIS offers.

1.7 London extension: Operational aspects of service provision

- 97% of clients reported general satisfaction with the content and structure of the London NDIS courses.
- Over 80% of clients felt that the balance between theory and practical training was 'about right'.
- 68% of London clients were satisfied with the way in which they had been treated by the police, with 14% expressing dissatisfaction.
- 84% of London clients were satisfied with the way in which they had been treated by the Service Provider, with 14% expressing dissatisfaction.
- 94% of London clients felt that their driving had changed since attending the course, with over half of these reporting that it had changed 'a great deal'.

1.8 Non-respondents

- More female clients responded to the follow-up than males.
- Older clients were more likely to respond than younger clients.
- Clients from rural areas were more likely to return the follow-up than those from urban areas.
- Respondents consider NDIS to be more of an opportunity to improve their driving than do non-respondents.
- Although non-respondents have less appropriate attitudes before and immediately after the course than respondents, the course appears equally effective in terms of the degree that the pre-course attitudes are modified.
- Non-respondents report fewer accidents throughout their driving career than respondents.
- Non-respondents report more frequent violations before the course than do respondents.

1.9 Discussion

- It seems apparent that two general types of offender are referred to NDIS; those who have skill deficiencies or impairments which may be addressed by traditional driving instruction methods, and those who demonstrate offending behaviour as a result of inappropriate attitudes, which are better addressed using a more psychological approach. Both of these types of client will benefit from this kind of intervention.
- Significant improvements in both driving-related attitudes and self-reported behavioural measures indicate that the course attendance is having a significant effect on clients' driving-related attitudes and behaviour following course attendance.
- Differential changes in driving-related attitudes and self-reported behaviour between particular contrasting demographic groups indicate that the effect of the course depends upon certain environmental factors.

Further recommendations

- An individual's driving style is largely habitual. Methods to enforce changes in that habitual style may be improved, thus increasing the effectiveness of interventions such as the National Driver Improvement Scheme.
- Pre-course and post-course differences in attitudes towards particular offences (eg: speeding, close-following) between groups of clients (eg: professional and non-professional clients, clients from urban areas and those from rural areas) suggest that course content could be tailored to suit the relevant client base.
- Some form of probationary period after course attendance is recommended to maintain appropriate behaviours for longer, in order that they become routinised. Further changes in course design are recommended, based on current literature.
- Any future study should involve properly-constructed control groups. This would necessitate a greater degree of control over police referral policies in specific geographical areas, in order that similar client groups may be compared for the differing effects of court prosecution and NDIS course attendance.

SECTION TWO: INTRODUCTION

2.1 Background to Evaluation Study

2.1.1 Road Traffic Law Review (1988)

One of the recommendations made in the Road Traffic Law Review (1988) was that:

"A pilot study of one day retraining in basic driving skills as a disposal should be undertaken to determine whether such retraining produces a lasting improvement in the driving skills of the offender undertaking it."

2.1.2 The Devon Experiment

Although the driver improvement experiment was not incorporated into national legislation, Devon & Cornwall Constabulary, Devon County Council's Road Safety Unit and the Crown Prosecution Service met and agreed that such an experiment was worthy of further consideration. The police initially agreed to consider drivers for inclusion in the scheme who had been involved in a blameworthy collision within a clearly defined divisional area, and who fell between "caution plus" and "prosecution minus" in terms of normal disposal.

2.1.3 The National Model

The Devon County Council Road Safety Unit began a programme of research into the content and structure of a driver improvement scheme, and the first experimental course took place at the Devon Drivers' Centre in September 1991. After an initial operational evaluation in 1992, both Police and County Council agreed that the scheme should be made available throughout Devon for offenders facing prosecution for Section Three offences; "driving without due care or consideration".

The content, structure and administrative system of the course became known as the "Devon Model", which has been accepted by the National Service Providers Group as a National Model for all NDIS courses offered elsewhere in the UK.

2.1.4 The Evaluation Study

The National Driver Improvement Scheme Evaluation Study aims to assess the effectiveness of the National Driver Improvement Scheme (NDIS) as an alternative to court prosecution for minor traffic offences.

2.2 Site selection

In mid-1996 there were a limited number of NDIS courses in operation. Only four sites were capable of providing sufficient client throughput to justify inclusion in the study, these being Devon, Hereford & Worcester, Shropshire and Hertfordshire. The course run by Staffordshire County Council commenced shortly before the study was undertaken and was included at late notice.

However, it was set out in the project proposal that the selection of both predominantly rural and urban sites would be necessary, and all the existing four sites fall in the former category. Contact was made with the London Boroughs of Bexley and Barnet, both of whom were about to run their first NDIS course in April 1997. Discussion with these service providers and the Metropolitan Police Service resulted in the inclusion in the Evaluation Study of Barnet, Bexley and Central London area referrals.

The service providers involved in the study are as follows:

- *Devon Driving Centre, Exeter, Devon*
- *Hertfordshire County Council Training Centre, Hatfield, Herts.*
- *Hereford and Worcester County Council Road Safety Unit, Worcester, H&W¹.*
- *Shropshire County Council Road Safety Unit, Shrewsbury, Shropshire.*
- *Staffordshire County Council Road Safety Unit, Stafford, Staffordshire.*

Plus the 'London Extension':

- *Central London (British School of Motoring, BSM).*
- *London Borough of Barnet*
- *London Borough of Bexley*

The author visited to each site. During these visits, a sample course was attended and evaluated for comparability with the Devon Model. Any differences were noted (see Appendix One).

2.3 Time-scale

A data collection period of twelve months commenced in October 1997 and continued until the end of September 1998.

¹ Midway through the data collection period of the study, Hereford and Worcester split into two separate local authorities, Herefordshire and Worcestershire, and now run independent NDIS courses. For the purposes of this report, data from these two centres are treated as if the division had not taken place.

2.4 Control groups

It was established early in the project that suitable control groups should be established in order that the true effect of NDIS course attendance be assessed. The setting up of these controls was not possible due to a number of operational problems. The issue of control requirements and the factors that resulted in the absence of control groups are discussed in Appendix Two.

2.5 Methodology

2.5.1 Questionnaire measures

Four separate questionnaire schedules are used. The schedules pertaining to the London extension are modified versions of those designed for the main study. Copies of all of these schedules may be found in Appendix Three.

The study utilises two scales developed by Manchester University's Driving Behaviour Research Group; the Driving Attitudes Questionnaire (DAQ; Parker et al, 1992) and the Driving Behaviour Questionnaire (DBQ; Reason et al, 1990). The DAQ consists of two counterbalanced scales; DAQ-I and DAQ-II, containing different, but equivalent items. Validation studies have confirmed the equivalence of the two DAQ scales. These scales measure attitudes relating to four specific violations:

- *Drinking and driving*
- *Close-following (tail-gating)*
- *Dangerous overtaking*
- *Speeding*

The DBQ measures frequency of commission for three categories of inappropriate driving behaviour; lapses, errors and violations. These three types may be defined as follows:

- *Lapses* are those behaviours which do not present any immediate danger to other road users, but do not typify efficient or effective driving practice; for example, attempting to drive away with the handbrake still engaged, or forgetting where one parked in a car-park.
- *Errors* have been defined as, "slips and mistakes in the highest risk category" (Reason et al, 1990), and imply a lack of effort or attention rather than a positive act on behalf of the driver. Examples include misjudging an overtaking gap or failing to see an approaching vehicle when pulling out of a junction.
- *Violations*, on the other hand, and considered to be, "deliberate...[and] involving a definite risk to others" (Reason et al, 1990).

- *Schedule One: "Pre-course measure"*

Includes DAQ-I to assess the respondent's attitudes towards four specific driving offences; speeding, close-following, dangerous overtaking and drink-driving, and the DBQ, to get a 'snap-shot' of the individual's driving style, in terms of the frequency of commission of lapses, errors and violations during their normal driving, over the previous three months. In addition, details of accidents, near-misses, offences and convictions are requested for the previous two years and the previous three months.

- *Schedule Two: "Immediate pre-course measure"*

Asks questions related to how respondents feel about their referral to a Driver Improvement course, their perceptions of the course, their treatment, and motives for choosing the course over a court appearance. Those questionnaires intended for the London extension include questions related to operational and administrative matters, in order that the Metropolitan Police Service may assess the service providers' performance in key areas.

- *Schedule Three: "Post-course measure"*

Administers DAQ-II and requests personal details of the respondent, such as age, gender, driving experience etc. Also reveals details of the Free Draw and requests an address to which to send the final questionnaire. London extension questionnaires include items asking about clients' perceptions of the course content and its presentation.

- *Schedule Four: "Three-month follow-up measure"*

Administers the DBQ and DAQ-I, both for the second time. Also asks for details of accidents, near-misses, offences and convictions in the three months since attending the Driver Improvement course.

2.5.2 Administration of measures

Each respondent completed all four schedules around the time of their attendance on a Driver Improvement Scheme course at the participating sites. The timing of these measures was as follows:

- *Schedule One: Approximately 2-6 weeks prior to attendance on the course.*
- *Schedule Two: Upon arrival for the first time at the training centre.*
- *Schedule Three: At the end of the course, prior to departure.*
- *Schedule Four: Three months after completion of the course.*

The first schedule was sent to the client by the service provider through the post, along with other registration forms and a letter explaining the background to the study. This letter (see Appendix Four) requested that they complete the questionnaire and bring it with them on the first day they attend their Driver Improvement course.

The second and third questionnaires were administered by staff at the training centres. The first three schedules from all participants were then sent to the University of Exeter by training centre staff in the Freepost envelope provided.

The fourth, and final schedule was sent by the University of Exeter to the respondent directly, along with a covering letter and Freepost envelope for its return.

2.6 Respondents' incentive

Due to concern about a low response rate for the fourth and final questionnaire, each service provider in the main study (ie: excluding those sites involved in the London extension) agreed to be involved in an incentive scheme. Every client completing all four questionnaires had his/her name entered in a free draw. At the end of the data collection period, a name was drawn at random from those respondents from each site qualifying for the draw. The winner from each service provider received a cheque for £50, paid for by the service providers. This scheme was designed to maximise the return rate for the three-month follow-up measure.

2.7 Measures of Course Effectiveness

The effects of course attendance were assessed by measuring changes in clients' attitudes (as measured by the DAQ) and changes in the number and frequency with which they committed errors and violations (as measured by the DBQ).

2.7.1 Short-term attitude modification

Attitudes toward the four violations were measured two to six weeks before the course (DAQ-I) and then immediately after the course finished (DAQ-II), to assess the short-term effects of the teaching material and methods.

2.7.2 Longer-term attitude modification

The three-month follow-up (DAQ-I for the second time) assessed the longer-term impact of the course on clients' attitudes.

2.7.3 Self-reported Behaviour modification

Actual driving behaviour was assessed using the DBQ. Schedule One asked for self-reported measures of lapses, errors and violations over the previous three months. Schedule Four asked for this information in the three months since attending the course.

2.7.4 Accident involvement

Clients were also asked to report their accident involvement in the three-month period before attending the course (pre-course) and in the three months following the course

(follow-up). In addition, accident involvement in the two years before the course, and since the clients passed the driving test was requested in the pre-course measure. Finally, clients were asked how many times in the three-month period that they narrowly avoided being involved in an accident (a 'near-miss').

It was expected that no changes in the number of slips or lapses would be recorded, as this type of inappropriate driving is neither illegal nor generally dangerous, and is thus not explored during the course. However, a reduction in the number and frequency of errors and violations was expected, although it was considered that this change would be small.

It should be noted that accidents and convictions for violations are infrequent events. Consequently, it is difficult to reasonably calculate significant effects over short periods of time; even over the three month follow-up period. There is an option designed into the Evaluation Study to follow up the information collected for this project after two years. The Driver numbers of all participants have been recorded and it should therefore be relatively easy to contact those NDIS clients involved and to collect further information regarding collision involvement, convictions, attitudes towards violations, changes in exposure and further training requirements.

2.8 Client perceptions

Clients' motives for attending the course and their perceptions of the scheme are investigated. The degree of resentment experienced by clients regarding their treatment since their offence took place could radically alter the effects of course attendance on their driving. Clients are asked if they opted to attend the course simply to avoid going to court, how they felt they had been treated by the authorities and whether they consider NDIS to be an opportunity to improve their driving. The effects of these variables on the effects of course attendance are then investigated.

2.9 Operational aspects of service provision (Metropolitan Police area)

The Metropolitan Police Service (MPS) was requested by the Metropolitan Police Authority to assess the operational performance of service provision for the National Driver Improvement Scheme within its jurisdiction. Clients' views about various aspects of course provision were recorded for the three Service Providers who receive referrals from Metropolitan Police decision-makers.

SECTION THREE: PARTICIPANT PROFILES

In this section, the sample of clients attending the eight NDIS courses is described.

3.1 Service Provider contribution

<i>Service Provider</i>	<i>First course</i>	<i>Last course</i>	<i>Number of courses</i>	<i>Number of clients</i>
<i>Devon</i>	09/01/98	24/07/98	20	303
<i>Hereford & Worcester</i>	28/11/97	24/07/98	20	281
<i>Hertfordshire</i>	07/11/97	31/07/98	24	374
<i>Shropshire</i>	05/12/97	31/07/98	21	283
<i>Staffordshire</i>	31/10/97	21/08/98	29	396
<i>London Borough of Barnet</i>	20/10/97	14/08/98	11	102
<i>London Borough of Bexley</i>	14/10/97	21/08/98	11	61
<i>Central London (BSM)</i>	17/11/97	01/05/98	7	21
Totals			143	1,821

Table 3.1: Service Provider contributions to data collection

Over the twelve month data-collection period, measures were taken from 1,821 clients attending 143 separate courses at the eight Service Provider sites. Table 3.1 shows the contribution from each Service Provider involved in the Evaluation Study. ‘First course’ refers to the date of the first course during which clients were asked to complete the evaluation questionnaires. ‘Last course’ refers to the date of the most recent course included in this report. The ‘number of clients’ refers to the number of clients returning at least one of the evaluation questionnaires.

3.2 Response rates

Response rates for the first three schedules are very high at 90-95%. This is most likely due to the questionnaires being linked with the official course paperwork, although a full explanation of the study appears on the cover of every schedule. The response rate for the final schedule is also high. Out of 1,579 three-month follow-up questionnaires sent out, 638 were completed and returned; a response rate of 40.7%.

It was considered likely that the ‘client incentive’, described earlier, would have had an effect on response rates, encouraging clients to complete and return the final questionnaire. However, this scheme was not adopted by the three London Service

Providers, and the response rates for the follow-up measure do not differ significantly from the remaining five service providers. It should be noted that some significant differences were found between those clients returning the follow-up questionnaire and those failing to do so. It is fair to assume that those returning the questionnaire are representative of the whole sample (any differences are discussed in Section Nine).

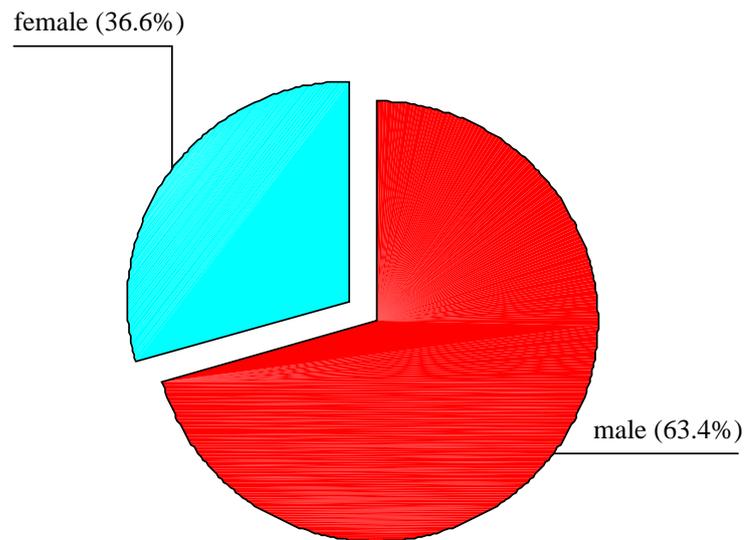


Figure 3.2: Gender distribution

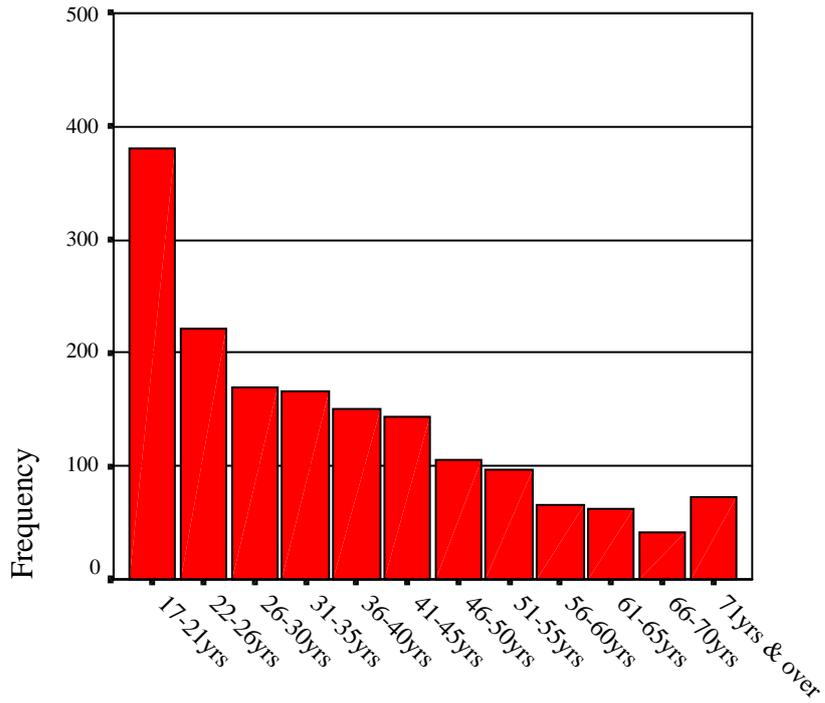


Figure 3.3: Age category distribution of clients

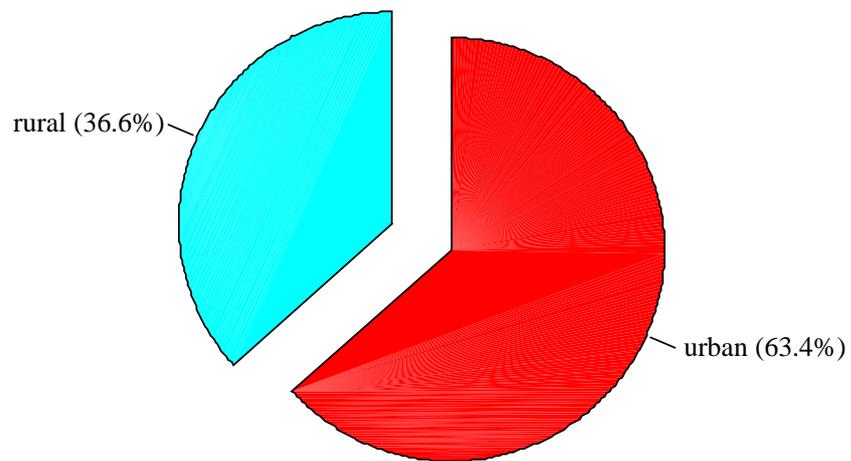


Figure 3.4: Figure Clients' area of residence

3.3 Client profiles

3.3.1 Gender

As Figure 3.1 shows, there are significantly more males (63.4% of sample) referred to NDIS courses than females (36.6%). This pattern is observed at all eight courses surveyed.

3.3.2 Age

One third of NDIS clients are under the age of 26 years, and one half of the sample are less than 35 years-old. There is quite obviously a bias towards the younger driver. A similar age distribution (Figure 3.2) was observed at all eight sites. This compares closely with the generally-observed rates of driver offending by age-group.

3.3.3 Area of residence

The type of area in which the clients live is predominantly urban (Figure 3.3). Variation between sites was evident, with 80-90% of clients from the London sites living in mainly urban areas, whilst at the other end of the scale, in Devon and Shropshire clients were evenly split between urban and rural areas.

3.3.4 Job-related driving

Approximately half the sample considered that the majority of their driving is related to their work (Figure 3.4). This pattern is shared across all sites (between 47% and 54% responding that most of their driving is work-related) except Hereford & Worcester (41% work-related) and Barnet (33% work-related).

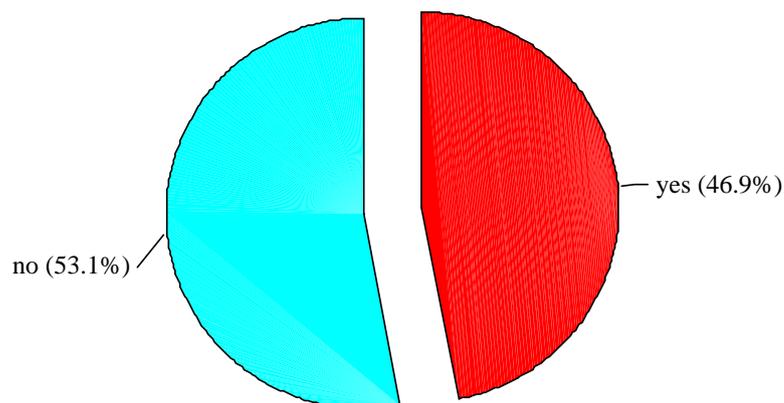


Figure 3.4: Driving work-related?

3.3.5 *Driving experience*

Clients' driving experience, measured in years since passing their driving test, is displayed in Figure 3.5. A peak at around the one-year point indicates that newly-qualified drivers are at higher risk than more experienced drivers. The peaks towards the right-hand end of the distribution are likely to be a statistical anomaly caused by a smaller number of experienced clients attending courses, compared with inexperienced clients.

3.3.6 *Annual mileage*

The graph of reported annual mileage of clients attending the surveyed NDIS courses (Figure 3.6) reveals a number of distinct peaks. Clients' annual mileage appears to be slightly higher than the general population, with the average driver in the UK covering approximately 9,000 miles annually. This is likely to be as a result of the high proportion of 'professional' drivers attending the courses. It seems fairly clear that the regular intervals are as a result of response sets (clients' estimates will always be rounded up or down to the nearest reasonable 'interval'), rather than any real effect.

3.3.7 *'Career' accident involvement*

Manchester University's Driving Behaviour Research Group estimates the 'mean' rate for accident involvement in the UK to be one accident in every nine years (0.11 accidents per annum). If the 'career' accident involvement frequency (ie: since passing the driving test) is examined in relation to the number of years since passing the test, we can see that NDIS clients record a mean accident frequency per annum of 0.414, or roughly one accident for every five years. Furthermore, over 70% of clients record a higher rate than the estimated National average.

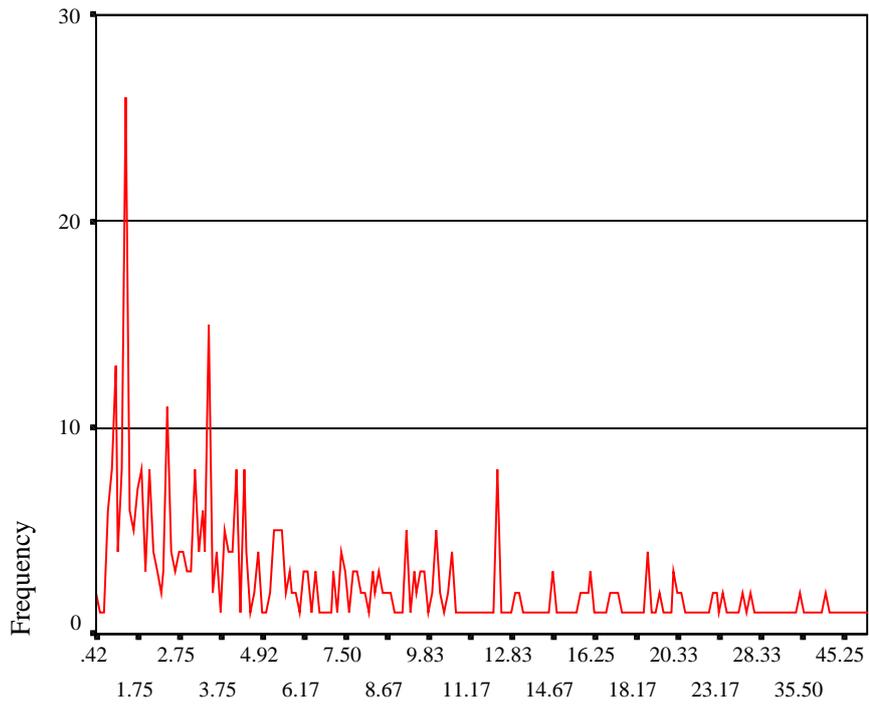


Figure 3.5: Years since passing driving test

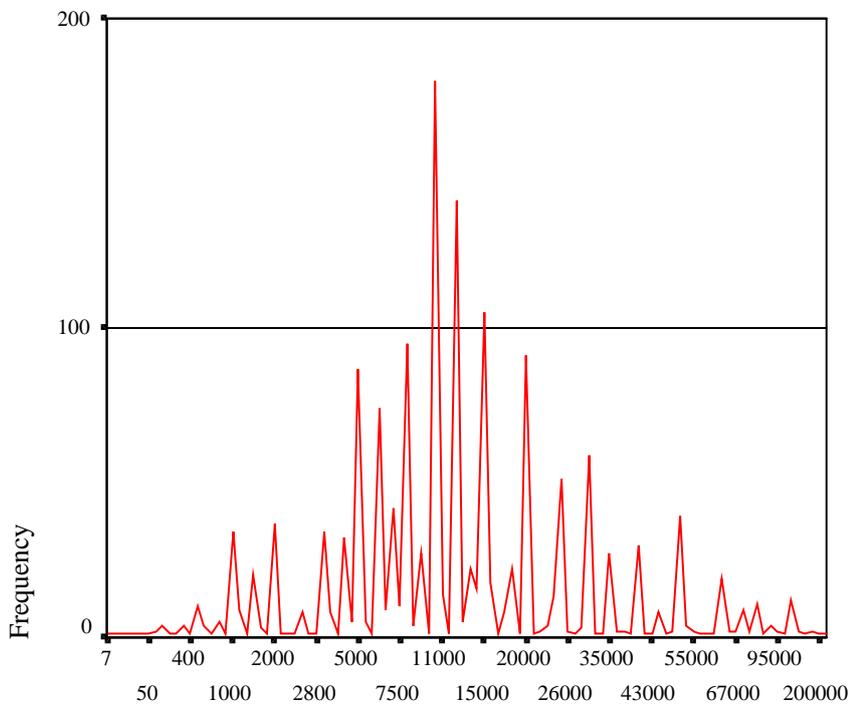


Figure 3.6: Annual mileage

However, NDIS clients are significantly younger and less experienced than the wider population, and a large proportion of clients will have been involved in an accident in the months leading up to their course attendance (this being the reason that they have been referred to such a course). Therefore, if the calculation of mean accident involvement per annum omits any accidents that have taken place in the three months prior to course attendance, the resulting value will be more realistic. This method of calculation shows that 55% of NDIS clients have a mean accident involvement per annum of less than 0.11. In other words, NDIS clients do not appear to be distinguished, in terms of their accident involvement, from a general UK population sample.

3.4 Section summary

- 1,821 clients contributed to the study, attending NDIS courses at eight Service Provider sites over a twelve month period.
- Response rate for the first three measures was 90-95%.
- Response rate for the three-month follow-up was good at 40.7%.
- The typical NDIS client is young (over 20% fall into the 17-21 year-old category), male (70% of sample), inexperienced (almost 25% passed their driving test within the last two years) and covers an average of 10,000 miles per year (coinciding with the mean National annual mileage).
- Individuals who drive for a living are over-represented, but they also record a significantly higher annual mileage (27,000 miles, on average, compared with 9,000 for 'domestic and pleasure use' drivers).
- Clients from urban and rural areas appear equally well represented.
- Clients attending NDIS appear to record a significantly higher rate of accident involvement than the general population. However, this is most likely due to the infrequency of such an occurrence, combined with the fact that the sample are largely selected on the basis that they have been involved in an accident (a small proportion are not accident-involved, but have been involved in what police refer to as an 'incident'; for example, a 'near-miss').

SECTION FOUR: NDIS: CLIENT PERCEPTIONS

In this section, clients' motives for attending the course (as opposed to opting to go to court) and their perceptions about the scheme in general will be reported.

4.1 Avoiding court

Clients were asked how strongly they agreed or disagreed with the statement, 'I am attending the Driver Improvement course to avoid a court prosecution'. It may be assumed that the dominant motive in choosing NDIS is to avoid court, and so those clients disagreeing with this statement may be considered to be 'faking good' and their other responses should be treated with caution.

It should be noted that in the following results sections, it will be specifically reported where these 'suspect' clients' responses differ significantly from the rest of the sample. Otherwise, it may be assumed that the 'faking good' has not occurred.

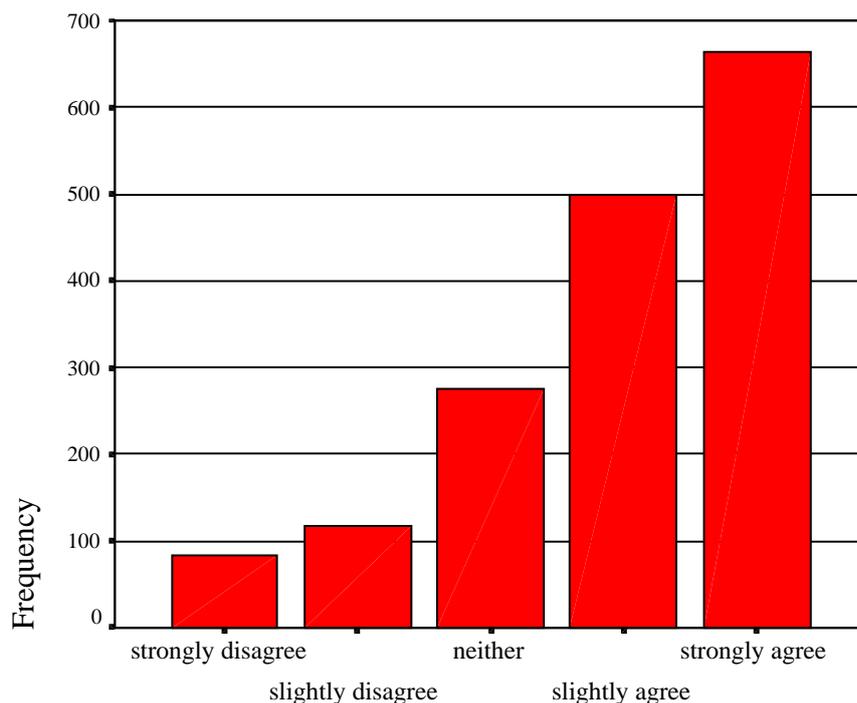


Figure 4.1: Avoiding court prosecution?

Over 70% agreed with the statement to some degree, while only 12% disagreed. Differences on this measure between the clients passing through each Service Provider were small, with between 61% and 81% agreeing with the statement to some extent, while between 10% and 17% disagreed (Figure 4.1).

4.2 Opportunity to improve

When asked how strongly they agreed or disagreed with the statement, ‘I see the course as an opportunity for me to look at my driving and improve those aspects that

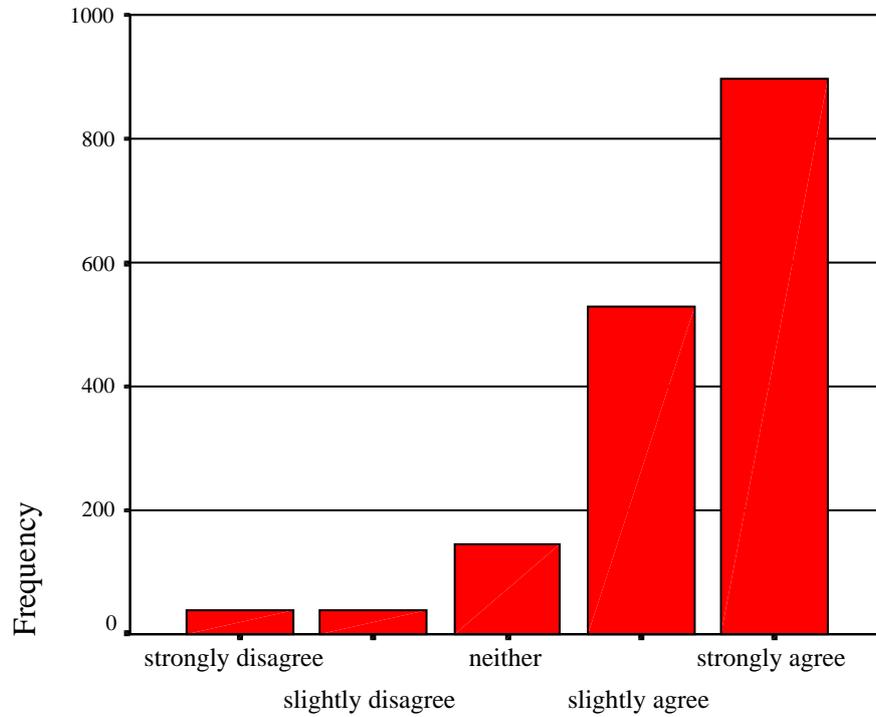
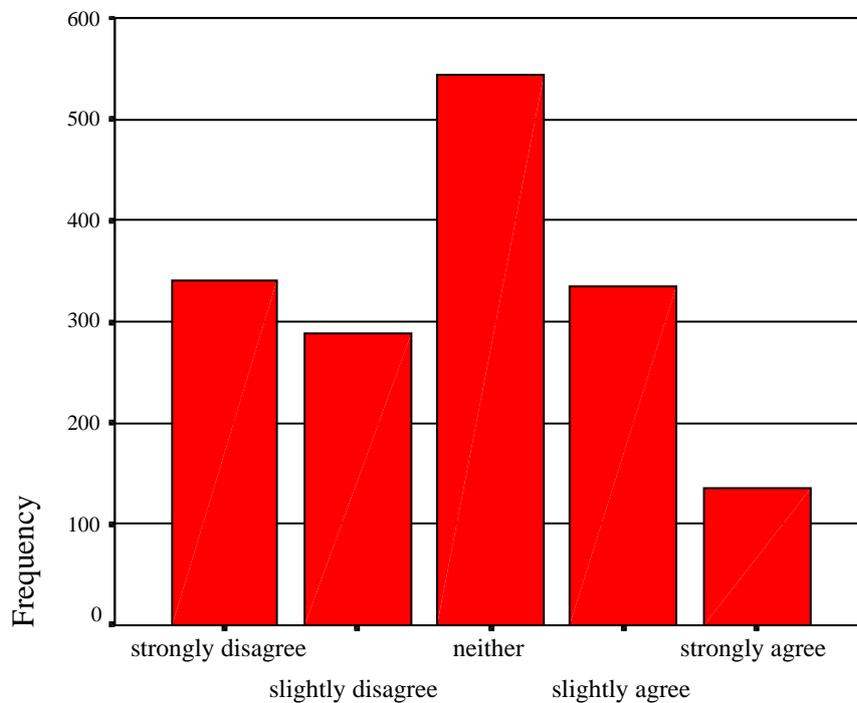


Figure 4.2: Opportunity to improve?

Figure 4.3: Treated unfairly by the authorities?



need attention', almost 87% agreed to some extent, while less than 6% disagreed (Figure 4.2). Again, little variation between Service Providers is evident, with 80-90% of clients agreeing with the statement to some degree, and 5-12% disagreeing.

4.3 Treatment by the authorities

Clients were asked how strongly they agreed or disagreed with the statement, 'I feel as though I have been treated unfairly by the authorities'. While one third of the sample did not express an opinion either way, 38% disagreed (considering that they had been fairly treated) and 29% agreed that they had been unfairly treated. Those who considered that they had been treated fairly were stronger in their belief than those who did not. (Figure 4.3).

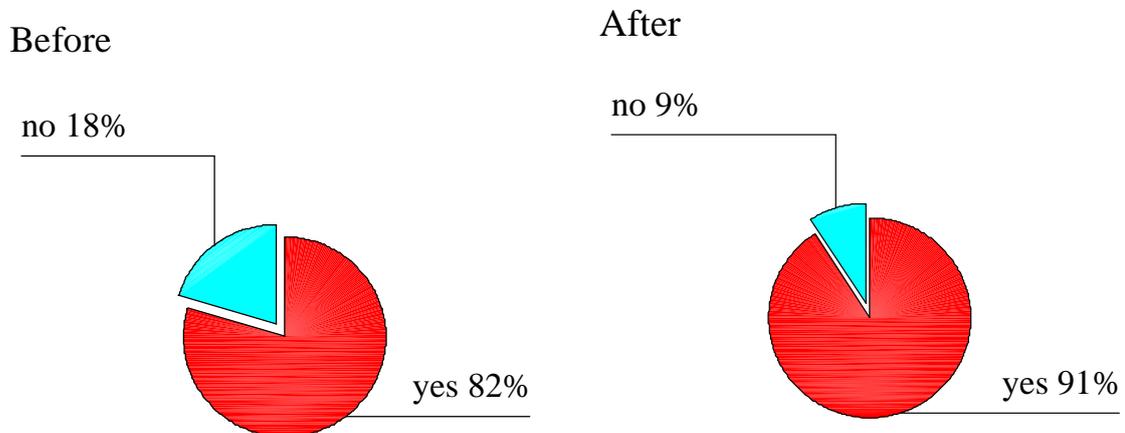


Figure 4.4: NDIS offered to similar offenders? (Before/after course)

4.4 Availability of course

Prior to the course, the clients attending the three London sites (n=129) were asked if they felt that NDIS should be offered to all drivers who commit offences similar to their own. Eighty-two percent of clients considered that it would be a good idea. When asked the same question after completing the course, this figure had increased to over 91% (Figure 4.4). It would appear that only a small minority is still resentful of their treatment after attending the course.

4.5 Section summary

- Most clients (over 70%) perceive NDIS as a way of avoiding court prosecution.
- Less than one third of the whole sample felt that they had been treated unfairly by the authorities, and the majority (almost 90%) felt that the course offered them an opportunity to look at areas of their driving that may need attention.

- Of clients attending the three London NDIS courses, half of those who felt that NDIS was "not a reasonable method of disposal for the type of offence of which they were accused", changed their minds after the course.

SECTION FIVE: ATTITUDE MODIFICATION

5.1 Introduction

The Driver Attitudes Questionnaire (DAQ) was used to measure clients' attitudes towards traffic violations. The DAQ considers respondents' attitudes towards the four most common traffic offences; drink-driving, close-following, dangerous overtaking and speeding. Three measures of attitudes were taken; pre-course, immediate post-course and three-month follow-up.

When assessing the short- and longer-term effects, it is worth considering the environment in which clients completed the three attitude measures. Social desirability may have been an issue if clients felt obliged to respond in a particular way. Clients completed the pre-course measure prior to attendance on the course, and were thus away from the NDIS training centre. The second attitude measure was taken immediately after the end of the course, and therefore the clients were at the training centre. The final attitude measure was sent out from and returned by post to Exeter, and was hence again completed by the clients at their homes, away from the training centre.

Each of four item responses, making up each violation attitude scale, is scored between one and five. Scales for the individual violations therefore range from 4 to 20, with higher scores indicating a more appropriate (safety-orientated) attitude towards the offence. The general attitude scale thus has a range of 16 to 80, being a sum of the four subscale scores.

5.2 Pre-course Attitudes

Attitudes assessed by the first measure reveal significant differences between clients' attitudes towards the four violations ($F_{3,4599}=505.296$; $p<0.001$) prior to attendance on the course (figure 5.1, overleaf).

Planned and ad-hoc contrast analyses reveal that significant differences exist between clients' attitudes towards all four violations, except between drink-drive and close-following (figure 5.1). However, the largest difference is between attitudes toward speeding offences, and the rest combined ($F_{1,1533}=1574.95$, $p<0.001$).

Given the relatively large sample, it is not surprising that fairly small differences between attitude scores achieve significance. However, it is clear from Figure 5.1 that speeding offences are perceived differently to the rest, this type of violation considered by clients to be by far the least serious.

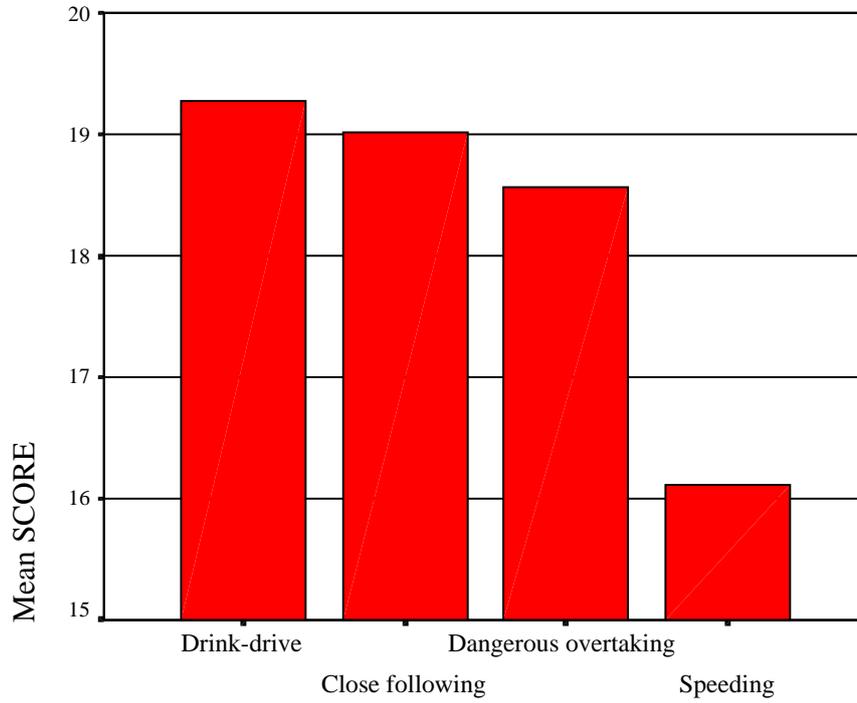
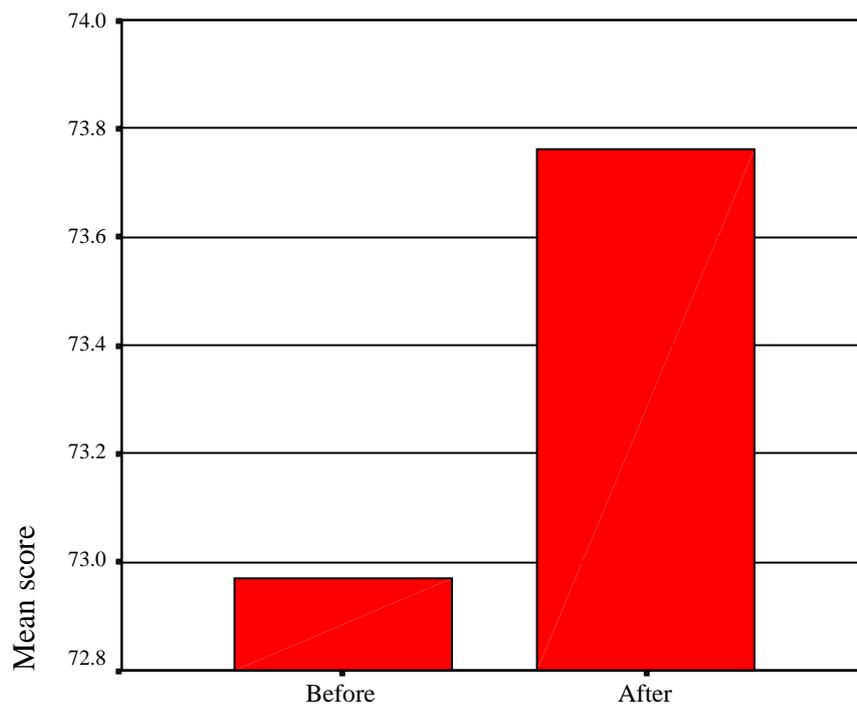


Figure 5.1: Pre-course attitudes towards violations

(higher scores indicate more appropriate attitudes)



*Figure 5.2: General driving-related attitude score
pre-course vs post-course
(higher score indicates more appropriate attitude)*

5.3 Short-term effects

The short-term effects of the course were assessed by comparing the pre-course measure with the immediate post-course measure. The clients (N=1,439) were therefore at the training centre when completing this questionnaire.

5.3.1 General Attitudes

The sum of the four subscales may be considered to be a measure of general driving-related safety-orientation (Figure 5.2). A significant improvement in clients' attitudes is evident immediately after the course (n=1,439, $t=-3.586$, $p<0.001$).

Over half of clients attending NDIS (52.1%) demonstrate an improvement in general attitudes at the end of the course ('positive effect'). Those clients whose attitudes remain constant, or who show an inappropriate change ('negative effect') differ in some important ways from the rest of the sample.

Clients reporting a 'negative effect' record significantly higher pre-course attitude scores on all attitude measures than those reporting a 'positive effect' (see Appendix Five, Table A). It is reasonable to assume that part of the reason that these clients do not show an improvement is that they have particularly 'safe' attitudes to begin with. These 'negative effect' clients also report a significantly lower frequency of accident involvement prior to ("RTA involvement since passing driving test": 2.10 vs 2.42, $t=-3.466$, $df=1404$, $p<0.001$) and in the three month period following the course (0.01 vs 0.30, $t=-2.431$, $df=595$, $p=0.015$). A lower frequency of commission of the dangerous acts of inappropriate driving behaviour (ie: errors and violations, not lapses) is also reported by 'negative effect' clients both before and after course attendance (see Appendix Five, Table B). There is a slightly higher proportion of female than male clients in this 'negative effect' group (a pattern reflected by female clients' more appropriate attitudes towards traffic offences), although no differences exist in terms of age, annual mileage or experience (since passing test).

5.3.2 Driving Attitudes Subscales

Changes in attitudes towards individual offences (DAQ subscales) may be seen in Figure 5.3. It should be noted that there is significant variation in scores between violation types at the first measurement point, prior to attendance on the course (see Section 5.2). Clients' pre-course attitudes toward speeding offences are significantly less safety-orientated, when compared with the remaining three types of violation ($F_{1,1533}=1574.949$, $p<0.001$).

Attitudes relating to speeding offences show a large and significant improvement following the course ($t=-21.578$, $p<0.001$), whereas attitudes towards close-following

become significantly *less* appropriate immediately after the course ($t=9.892$, $p<0.001$). Attitudes towards drink-drive and dangerous overtaking do not change significantly. Short-term changes in attitudes towards these specific offences may be seen Appendix Five, Table C.

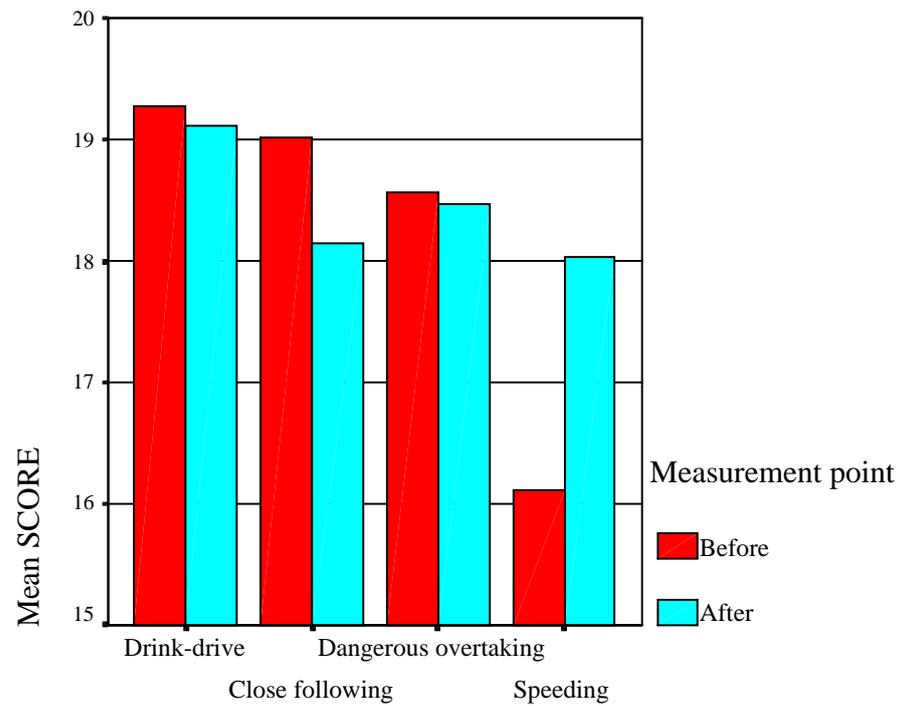


Figure 5.3: DAQ subscale scores; pre-course vs post-course
(higher score indicates more appropriate attitude)

Graph 5.4: General driving-related attitude score: pre-course vs follow-up
(higher score indicates more appropriate attitude)

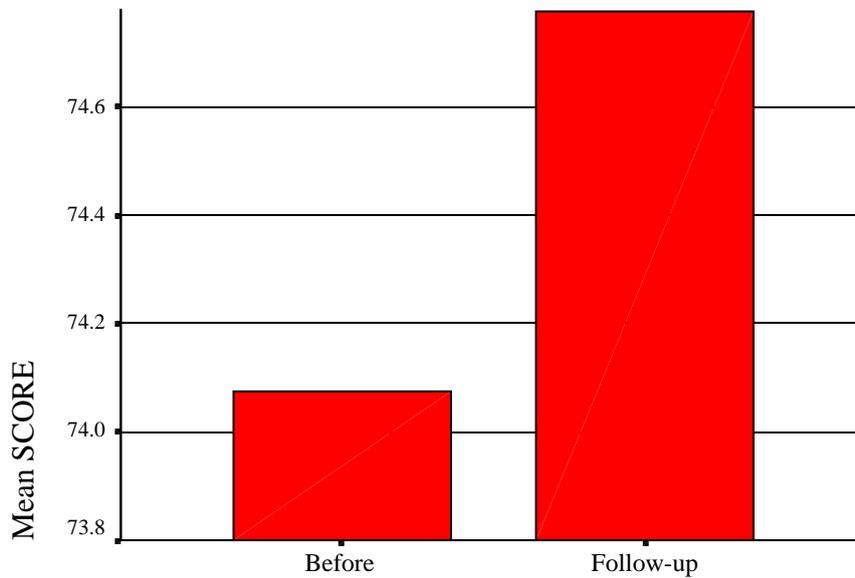
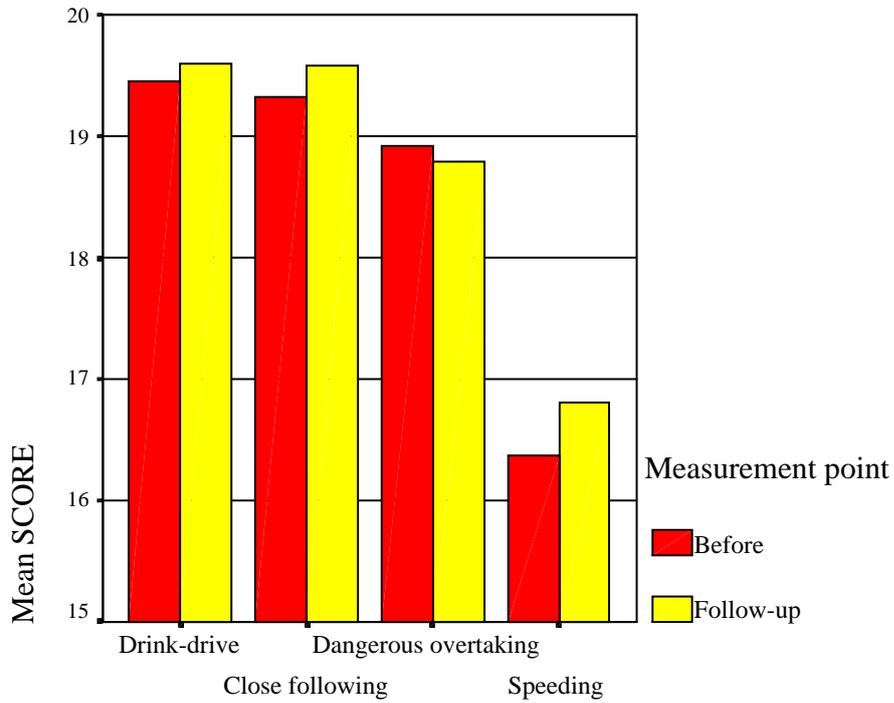


Figure 5.5: DAQ subscale scores; pre-course vs immediate post-course
(higher score indicates more appropriate attitude)

5.4 Longer-term Effects

The longer-term effects of the course were assessed by comparing the pre-course measure with the three-month follow-up measure. The clients (N=601) were therefore away from the training centre (ie: at home/work) when completing this questionnaire.

5.4.1 General attitudes

A significant improvement in clients' general attitudes is still evident three months after the course ($t=-2.121$, $df=608$, $p=0.034$).

5.4.2 Driving Attitudes Subscales

Attitudes relating to speeding offences show a large and significant improvement maintained three months after the course ($t=-3.797$, $df=608$, $p<0.001$). Attitudes towards close-following are also significantly more appropriate three months after the course ($t=-1.984$, $df=608$, $p=0.048$). Attitudes towards drink-drive and dangerous overtaking do not change significantly (see Graph 5.5).

5.5 Section summary

- The immediate effect of the course on attitudes towards traffic violations is an overall significant improvement in the clients' general safety-orientation. The overall Driving Attitudes Questionnaire score becomes significantly more appropriate when tested immediately after the course.
- Over half of clients demonstrate an improvement in attitudes after the course, but those that do not show an improvement had significantly more appropriate attitudes to begin with.
- Attitudes towards the offences of drink-driving, dangerous overtaking, close-following (tailgating) and speeding were examined. Prior to the course, differences between the perceived seriousness of the four offences are evident. Speeding is not considered to be as serious as drink-driving, dangerous overtaking or close-following.
- Immediately after the course, differences in attitudes towards different offence types are substantially reduced, predominantly due to a significant increase in the perceived seriousness of speeding offences.
- Three months after the course, the change in attitudes towards speeding offences is still significant, with the clients displaying more appropriate, safety-orientated attitudes.

SECTION SIX: SELF-REPORTED BEHAVIOUR

6.1 Introduction

Self-reports of acts of inappropriate driving behaviour, accident involvement and 'near-misses' were collected before attendance on the NDIS course. These self-reports related to the frequency with which each act was committed in the three-month period immediately prior to the course. The same measures were taken at the three-month follow-up and related to the period since completion of the course. In addition, measures of accident involvement over the previous two years and since passing the driving test were requested.

6.2 Inappropriate driving behaviour

The DBQ measures inappropriate driving behaviour using a scale that assigns a score of 0-5 to response options, "Never" through to, "Nearly all the time". This results in a score for lapses, errors and violations ranging from 0-40. As can be seen in Figure 6.1 (overleaf), the frequency with which these behaviours are committed all decrease between pre-course and follow-up. These changes are all significant (Table 6.1).

<i>type</i>	<i>Pre-course</i>	<i>Post-course</i>			
<i>Lapses:</i>	7.47	7.16	t=2.062,	df=608,	p=0.04,
<i>Errors:</i>	4.64	4.14	t=4.097,	df=608,	p<0.001,
<i>Violations:</i>	3.93	3.70	t=1.911,	df=608,	p=0.050,

Table 6.1: Inappropriate driving behaviour; mean scores and significance (pre-course vs follow-up)

The frequencies of commission show strong correlations between the measurement points (Table 6.2). This indicates that it is the same clients committing these behaviours both before and after the course. The significance of the decrease in all three behaviours indicates that although it is largely the same drivers committing the acts, they are less frequent in the three months following the course than in the same period before it.

<i>Lapses:</i>	r=0.609,	p<0.001
<i>Errors:</i>	r=0.594,	p<0.001
<i>Violations:</i>	r=0.691,	p<0.001

Table 6.2: Inappropriate driving behaviour; correlation between pre-course and follow-up measures (with significance level)

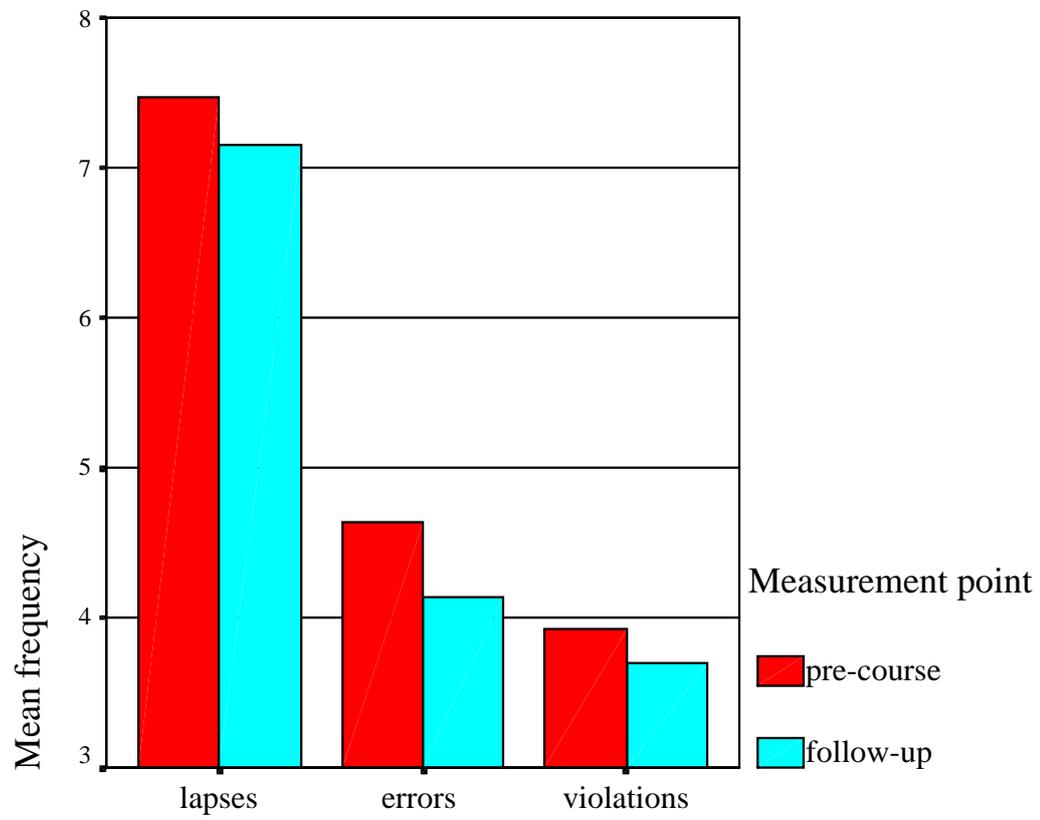


Figure 6.1: Inappropriate driving behaviour (pre-course vs follow-up)

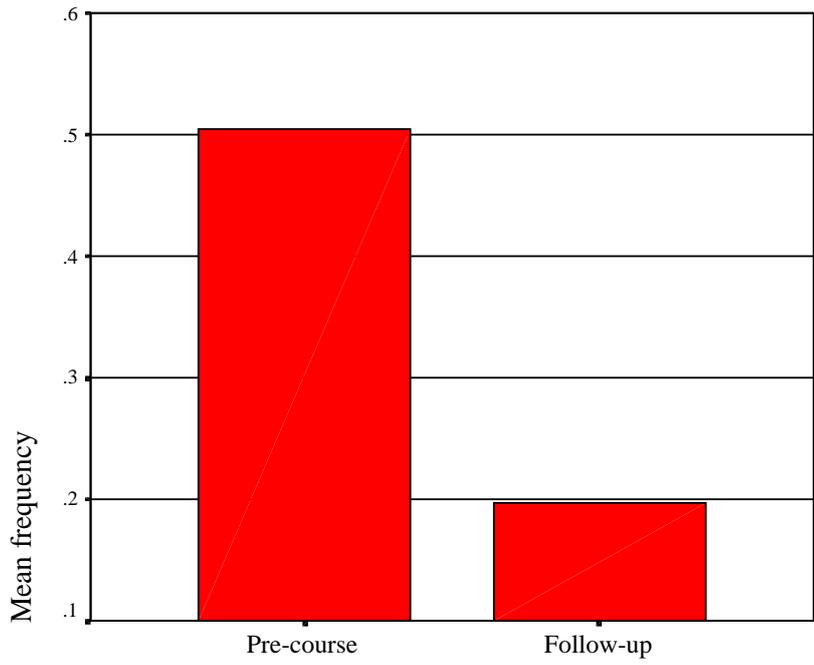


Figure 6.2: Self-reported accident involvement (pre-course vs follow-up)

6.3 Accident involvement

Asked to report on accident involvement in the three months before the course, compared to the three months following the course, a significant difference was observed ($t=5.945$, $df=616$, $p<0.001$).

The correlation between the two measurement points ($r=-0.012$, not significant) shows almost 'chance' level. In other words, there is no consistent relationship between those clients who were involved in collisions before the course and those involved in collisions following the course. This result is most likely due to the low reported frequencies of accident involvement at both measurement points.

It is worth making an observation at this point. A large proportion of clients will have been involved in an accident in the preceding three months, and this event will have led to their referral to NDIS. All clients were requested not to include this particular accident in their questionnaire, but some confusion over this issue may have led to the result observed here.

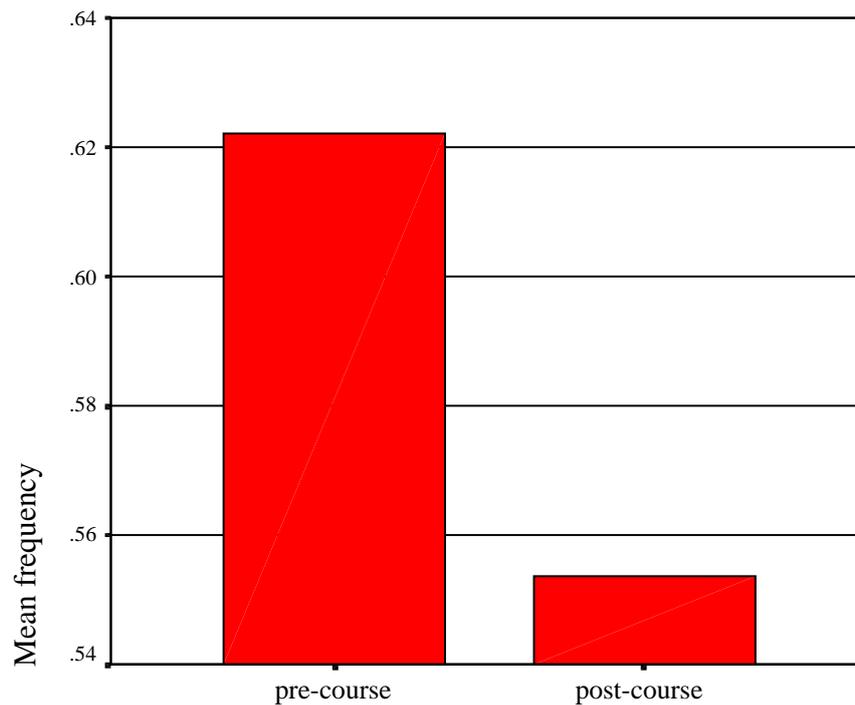


Figure 6.3: Self-reported 'near-misses' (pre-course vs follow-up)

6.4 Self-reported Near Misses

When asked to report the number of times that the client felt that they had narrowly missed being involved in an accident (Figure 6.3), no significant difference was evident between the two measurement points ($t=1.205$, $df=605$, n.s.). Comparison with

UK population norms would be useful at this stage, but no data is currently available for mean 'near-miss' involvement for a wider sample.

6.5 Section summary

- Significant reductions in the self-reported frequency of commission of lapses errors and violations (see p.14) are evident after the course.
- High correlations between before and after measures suggest that it is largely the same clients who are committing these acts of inappropriate behaviour before and after course attendance, but they are committed less frequently.
- No differences in self-reported near-misses are evident before and after the course.
- A significant reduction in self-reported accident involvement may be an artefact of the method of data-collection. Collisions are extremely infrequent events, so given a longer follow-up period, the effect of this artefact would be substantially reduced, allowing any true effect to be observed. Provision has been made in the methodology for a two-year follow-up.

SECTION SEVEN: GROUP DIFFERENCES

7.1 Introduction

Particular training methods, content and delivery may not be equally effective for every client participating in NDIS. The following sections describe some of the significant differences in the degree to which different categories of client benefit from participating in NDIS, and how their attitudes and behaviour differ before and after attending the course.

7.2 Basis for categorisation

- *Gender and age category*

Males have been found to be higher sensation-seekers than females; that is, males display higher levels of the personality trait that dictates the degree to which an individual will behave in a 'risky' manner. This trait tends to be stronger in males and in younger individuals. Although affecting the amount of risk that an individual finds acceptable, it does not directly affect the way in which an individual views constraining effects of the law. It is thus particularly important how males and young clients perceive NDIS, and what effect it has on their attitudes and behaviour.

- *Area of residence*

The environment in which an individual drives will significantly affect that individual's driving style. Urban and rural drivers encounter very different pressures and obstacles in their everyday activities. It is likely that the approach used by NDIS will have differing effects on attitudes and behaviour on this basis.

- *Professional drivers*

Degree of exposure to the driving environment has long been recognised as a significant factor in determining an individual's driving style. Professional drivers record higher annual mileage than other road-users, and are likely to adopt a differing driving style to domestic/pleasure drivers. Thus there may be differences between these two groups.

- *Resentful clients*

In addition, clients who feel themselves to have been unfairly treated by 'the authorities' as a result of their referral to NDIS may perceive their experiences differently to those clients who were satisfied with the decision to refer them to a retraining course. Whether or not a client considers the course to be an opportunity to improve their driving may also determine the relevant outcomes. Clients who see no benefit in the course may not change their attitudes or driving style as much as clients who are more enthusiastic about the potential benefits of NDIS.

Therefore it is likely that there will be differences between males and females, across age-categories, between professional and domestic/pleasure drivers and between clients from urban, compared with rural areas. It is also likely that the degree of resentment that clients feel upon referral to NDIS will affect the way in which the course influences their attitudes.

7.3 Gender differences

7.3.1 Demographic differences

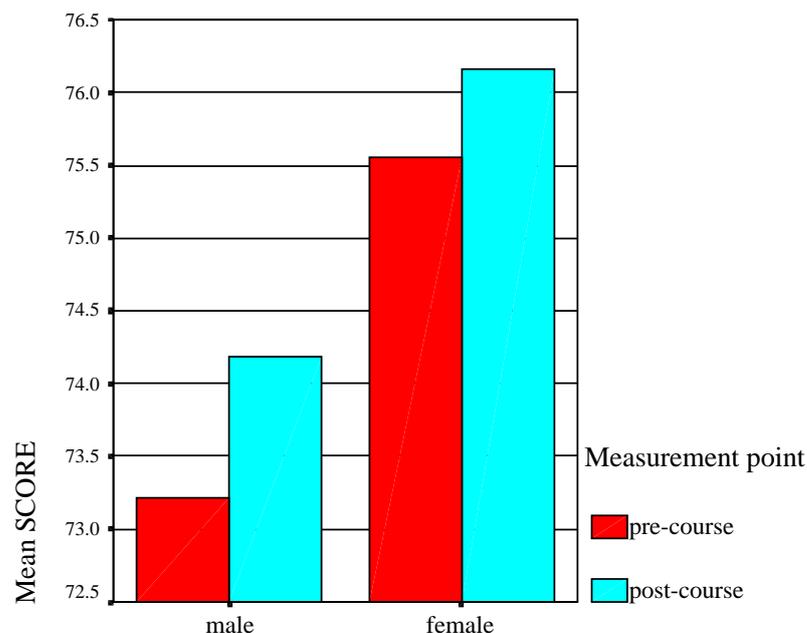
Exposure

Male clients travelled roughly twice as many miles annually as female clients (approximately 20,000 miles compared with 10,000 miles for females, both exceeding the mean UK annual mileage of approximately 9,000 miles per annum).

7.3.2 Short-term effect measures

General attitudes

Female clients display significantly more appropriate attitudes toward violations than males prior to, immediately after and three months after the course. However, the change in attitudes as a result of the course was greater for men than for women, though only approaching significance ($t=1.745$, 1401, $p=0.081$). This effect is most likely due to the fact that the female clients' scores were already relatively high prior to the course (a 'ceiling' effect, see Figure 7.1).



*Graph 7.1: General attitudes; pre-course vs post-course (by gender)
(higher scores indicate more appropriate attitudes)*

Driving attitudes subscales

A similar pattern is evident for the four individual violation subscales, with male clients displaying a significantly less appropriate attitude towards the offence before, immediately after and three months after attending the course than female clients. There were no significant differences between males and females in terms of changes in attitudes relating to the four violations.

7.3.3 Longer-term effect measures

General attitudes and driving attitude subscales

Other than the differences in pre-course, post-course and follow-up scores reported above, there were no differences in the longer-term effect on attitudes between the sexes. Both males and females recorded significant improvements in general attitudes, resulting from significant improvements in attitudes towards close-following and speeding.

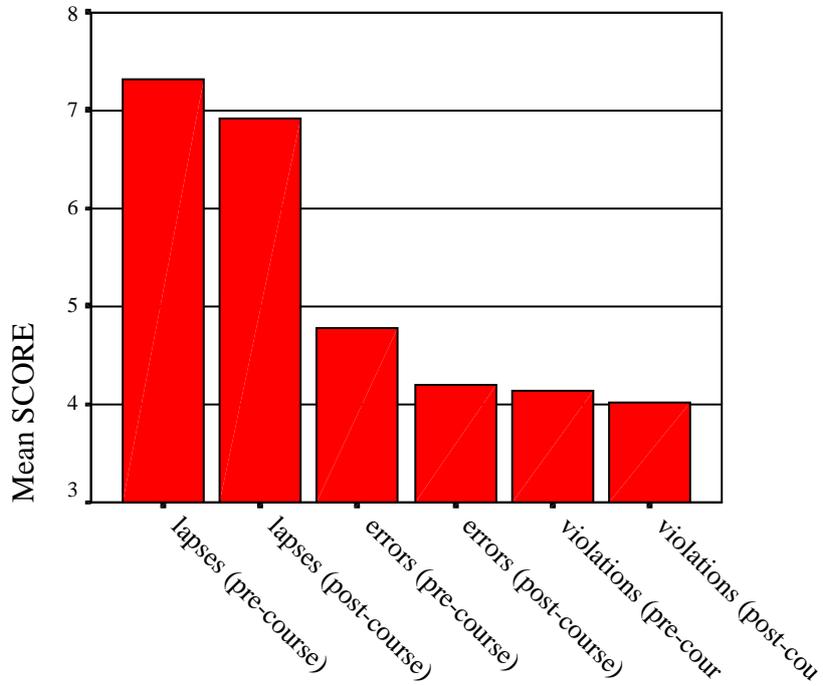
Inappropriate driving behaviour

Female clients reported the commission of significantly more lapses than males in the three months preceding the course ($t=-3.649$, $df=1404$, $p<0.001$), while male clients reported more frequent violations than females over the same period ($t=4.890$, $df=1404$, $p<0.001$). This pattern remained after the course, with females reporting more lapses than males in the three months following the course ($t=-2.021$, $df=602$, $p=0.044$) and males reporting more frequent violations than females ($t=2.800$, $df=602$, $p=0.005$). No significant differences are evident between the longer-term effects of the course on the commission of errors.

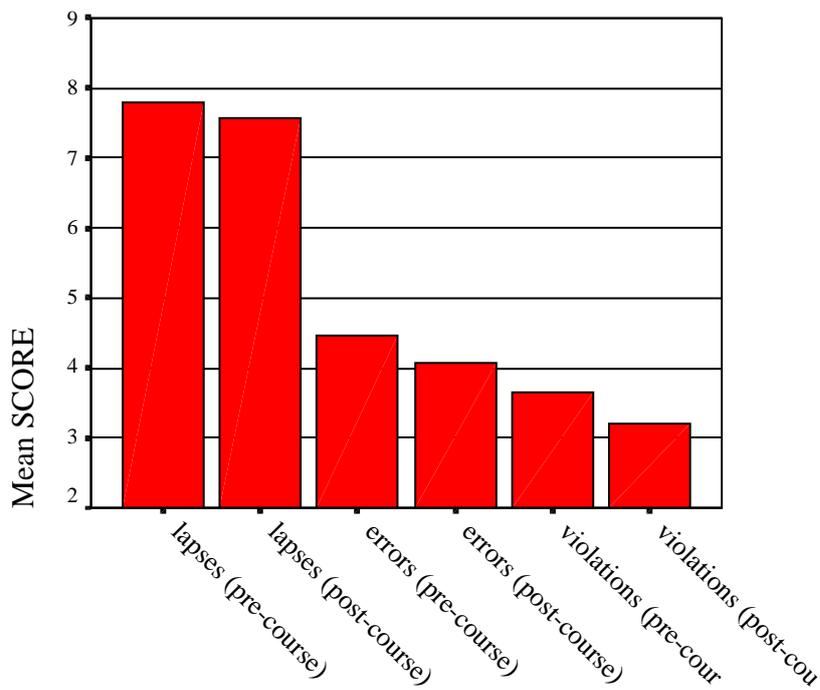
Splitting the sample by gender, these effects may be clarified further. Males report significantly fewer lapses ($t=2.313$, $df=365$, $p=0.021$) and errors ($t=3.817$, $df=365$, $p<0.001$) in the three months following the course. The reported difference in frequency of the commission of violations is small (although it is a decrease) and not significant. Female clients, however, report a small and non-significant decrease in the number of lapses committed, while reporting a significant decrease in frequency of commission of violations ($t=2.377$, $df=206$, $p=0.018$) and a decrease in errors that approaches significance ($t=1.837$, $df=206$, $p=0.068$). These results may be seen in Graphs 7.2 and 7.3.

An opportunity to improve

Female clients were significantly more optimistic about the opportunity afforded by the course to improve aspects of their driving which required attention.



Graph 7.2: Male clients' inappropriate driving behaviour (pre-course and three-month follow-up)



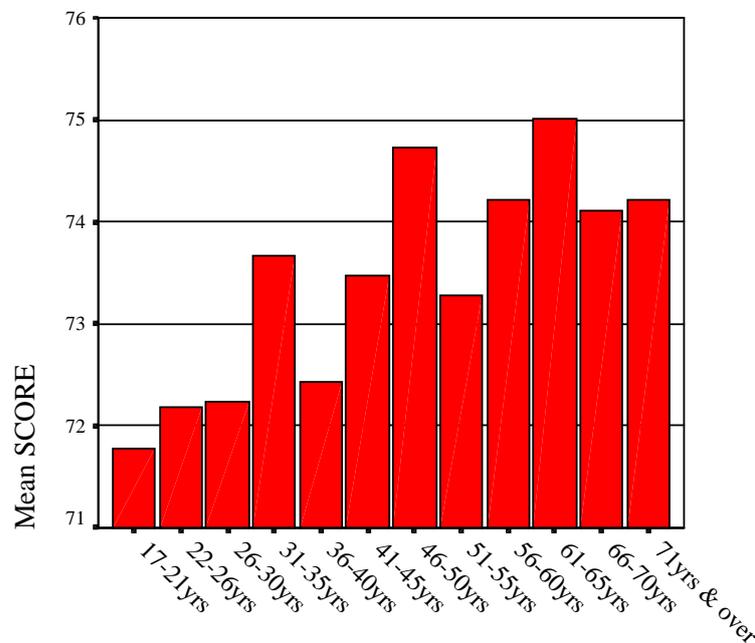
Graph 7.3: Female clients inappropriate driving behaviour (pre-course and three-month follow-up)

7.4 Age differences

7.4.1 Short-term effect measures

General attitudes

Older drivers tend to maintain more appropriate attitudes towards driving in general prior to the course (Figure 7.4), and immediately after it, although the effects of the course in changing attitudes do not vary with age.



*Figure 7.4: Pre-course general attitudes (by age category)
(higher scores indicate more appropriate attitudes)*

Driving attitudes subscales

The differences in general attitudes are explained mainly in terms of attitudes towards speeding offences ($F_{1,1414}=12.526$, $p<0.001$; see Figure 7.5) and dangerous overtaking ($F_{1,1414}=12.146$, $p=0.001$; see Figure 7.6), with older drivers considering them to be more serious than younger drivers. Significant differences exist in the effects of the course on moderating attitudes towards speeding offences, with the effect being smaller for younger drivers than for older drivers.

Inappropriate driving behaviour

Younger drivers report committing significantly more traffic violations than older drivers in the three months prior to the course ($F_{1,1414}=85.444$, $p<0.001$). Interestingly,

the very young (<30yrs) and the very old (70yrs plus) report *more* violations after the course. However, this may be an indication of increased awareness of what constitutes a violation and of their own behaviour, rather than a real effect. Further clarification of this effect in future research could have implications for the development of courses aimed at specific age-groups (e.g.: older drivers, newly-qualified drivers).

Older clients also report more lapses than younger clients, although it is only after the course that this difference becomes significant ($F_{1,11}=12.812, p<0.001$).

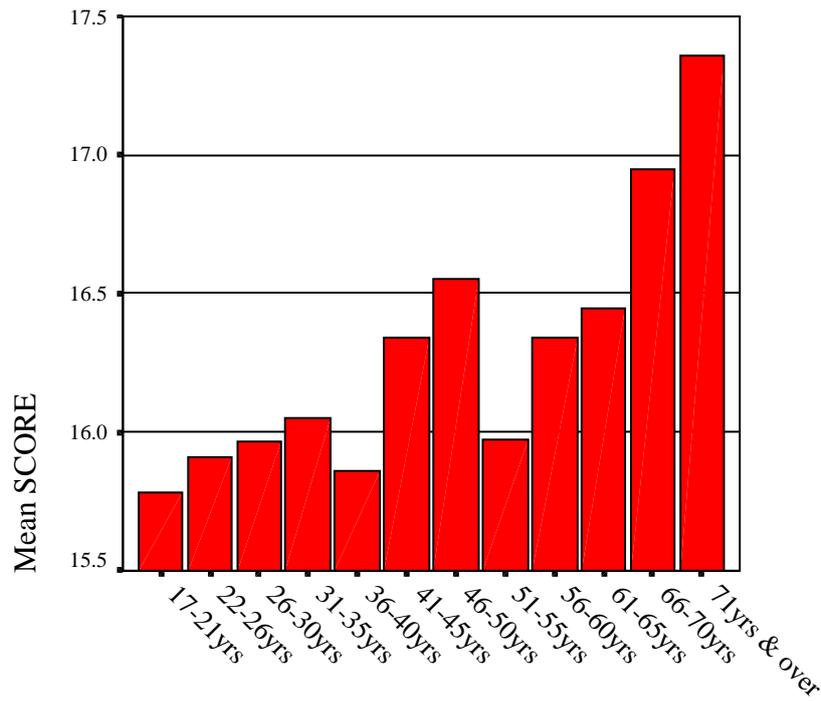


Figure 7.5: Attitudes towards speeding offences (by age category)

(higher scores indicate more appropriate attitudes)

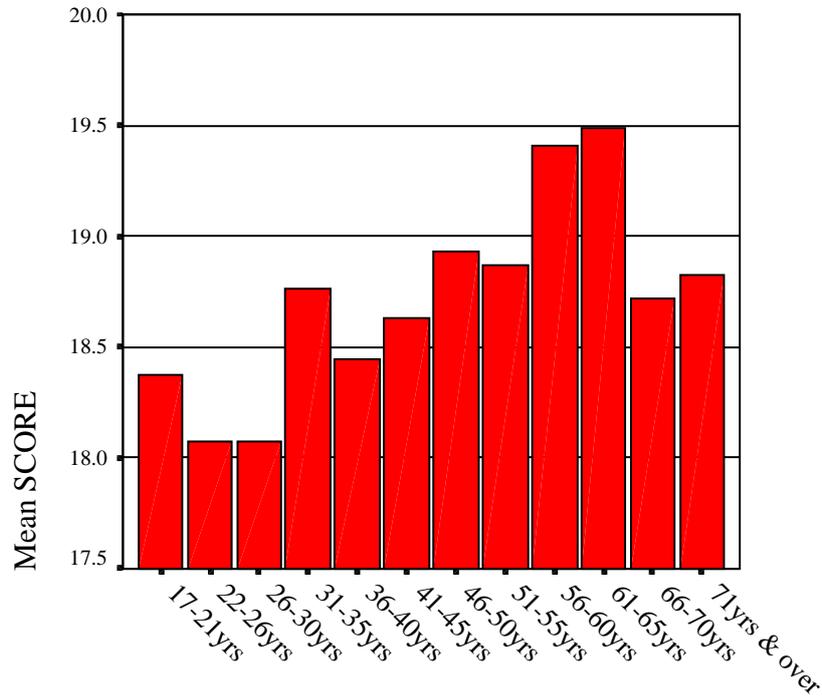
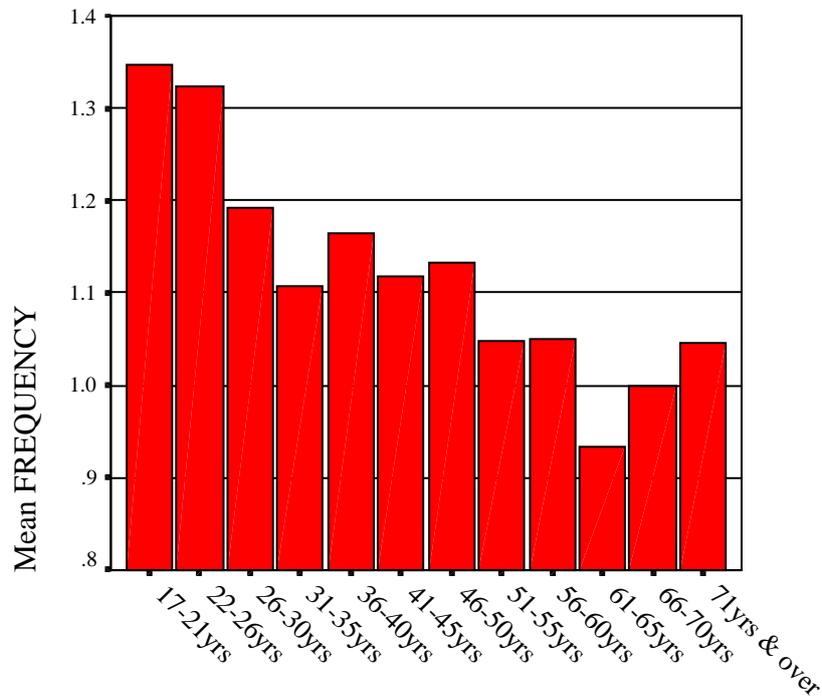


Figure 7.6: Attitudes towards dangerous overtaking (by age category)

(higher scores indicate more appropriate attitudes)

Figure 7.7: Mean number of accidents in previous two years (by age category)



Accidents and near-misses

Younger drivers report significantly more accidents in the two years prior to attending the course ($F_{1,1393}=17.582$, $p<0.001$; Figure 7.7). There were no differences in the number of accidents reported in the previous three months, but younger drivers did report significantly more near-misses over that period.

Attitudes towards the course

Marked differences exist in the clients' perceived opportunity to assess and improve aspects of their own driving. Clients in their mid-fifties and above appear to be significantly more optimistic about the course and welcome the opportunity, compared with younger clients ($F_{1,1540}=20.667$, $p<0.001$).

7.4.2 Longer-term effect measures

No significant differences are evident between age categories for any longer-term effects.

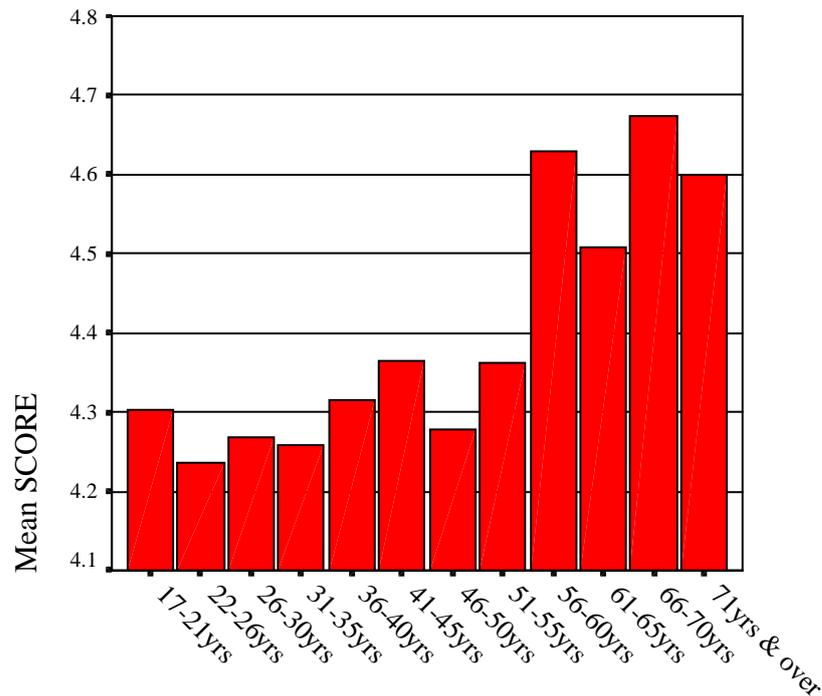


Figure 7.8: Opportunity to improve? (by age category)
(higher score indicates stronger agreement)

7.5 Area of residence

7.5.1 Demographic differences

No significant differences in terms of gender, age, annual mileage or experience are evident between clients from rural, compared with urban areas.

7.5.2 Short-term effect measures

General attitudes

The effect of the course on improving general attitudes in the short-term is significantly greater for those clients from rural areas than for those from urban areas ($t=-1.957$, $df=1398$, $p=0.05$). However, both groups of clients demonstrate an improvement in general attitudes toward violations immediately after the course (*urban*: $t=-2.312$, $df=877$, $p=0.021$; *rural*: $t=-4.255$, $df=521$, $p<0.001$).

Driving attitudes subscales

The difference in general attitudes can be largely attributed to differences in the perceived seriousness of 'dangerous overtaking' between urban and rural drivers ($t=-3.502$, $df=1398$, $p<0.001$; Figure 7.9 overleaf). Rural drivers demonstrate a significant improvement in attitudes ($t=-2.342$, $df=521$, $p=0.020$), whereas urban drivers report a

significantly *less* appropriate attitude ($t=2.575$, $df=877$, $p=0.010$) immediately after the course than they did before attendance (see Section 10.5 for comment).

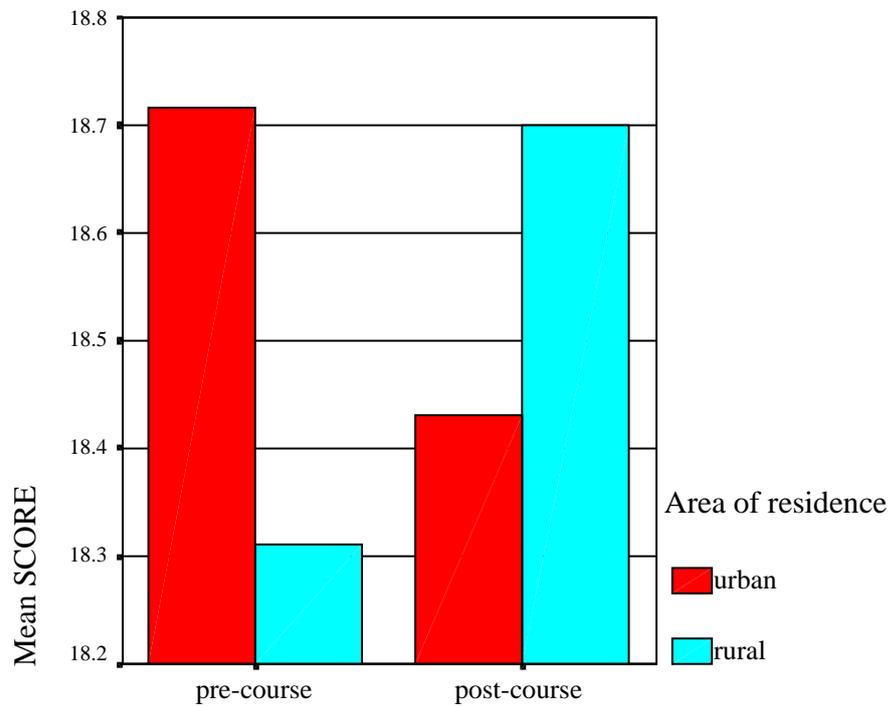


Figure 7.9: 'Dangerous overtaking': short-term effects on attitudes (urban vs rural drivers, before and immediately after course) (higher score indicates more appropriate attitude)

7.5.3 Longer-term effect measures

Attitudes

Three months after attending the course, rural clients retained an improvement in attitudes towards close-following ($t=-2.358$, $df=225$, $p=0.019$). Urban drivers retained an improved attitude, although this effect is not statistically significant. As reported earlier, all clients report significantly improved attitudes towards speeding offences after three-months, but urban drivers display more appropriate attitudes in the follow-up measure than rural drivers ($t=2.308$, $df=625$, $p=0.021$). No significant differences in attitudes towards dangerous overtaking or drink-driving were apparent between urban and rural populations.

7.6 Professional Drivers

7.6.1 Demographic differences

Professional drivers tend to be male ($\chi^2=101.199$, $df=2$, $p<0.001$), significantly younger ($\chi^2=111.202$, $df=11$, $p<0.001$) and cover significantly higher mileage (mean of 26,641 miles versus 9,270 miles; $t=11.251$, $df=1539$, $p<0.001$) than do 'domestic and pleasure' drivers. There are no significant differences in driving experience in terms of 'years since passing test'.

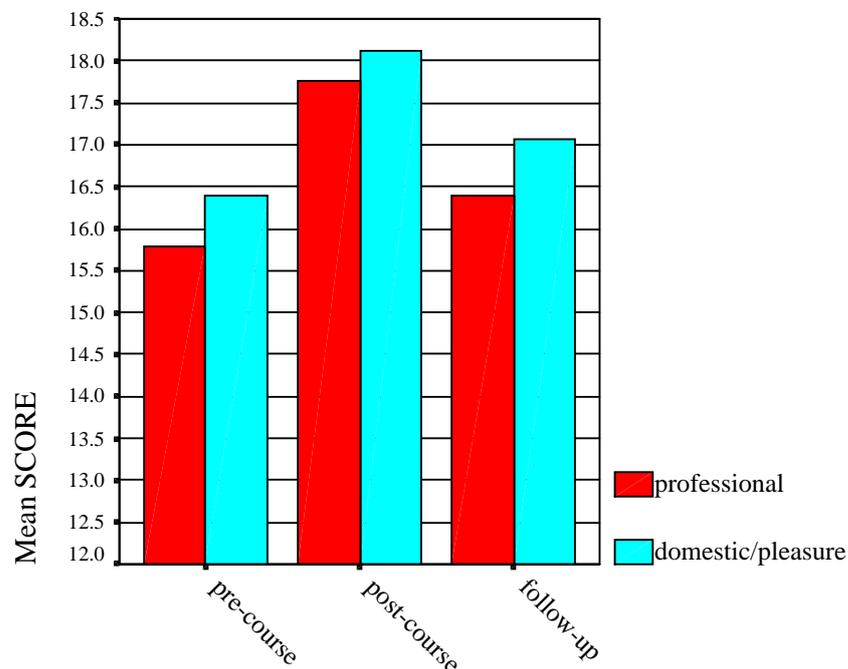


Figure 7.10: Speeding-related attitudes pre-course, immediately after course and at three-month follow-up (by type of driver)

7.6.2 Pre-course differences

Inappropriate driving behaviour

Professional drivers report significantly more frequent violations prior to attending the course (4.78 vs 3.89, $t=4.261$, $df=1415$, $p<0.001$), although after attending NDIS differences are not significant.

Accident involvement

Professional drivers record significantly higher accident rates over their driving career (2.55 vs 2.01, $t=5.887$, $df=1386$, $p<0.001$), and in the two year period prior to course attendance (1.27 vs 1.12, $t=3.884$, $df=1395$, $p<0.001$).

7.6.3 Short-term effect measures

General attitudes

Professional drivers maintain a less appropriate attitude before ($t=-2.311$, $df=1415$, $p=0.021$) and immediately after ($t=-2.679$, $df=1659$, $p=0.007$) attending NDIS than domestic/pleasure drivers. However, there is no significant difference in the effect of the course on attitudes. In other words, both professional and domestic/pleasure drivers benefit from the course to the same degree.

Driving attitudes subscales

The difference in general attitudes may be explained in terms of differing attitudes relating to speeding violations. Professional drivers have significantly less appropriate attitudes toward speeding offences before, immediately after and three months after attending NDIS, compared with domestic/pleasure drivers (see Figure 7.10).

7.7 Resentful clients

This section examines differences between the effects of course attendance on clients who feel resentful of their treatment by the 'authorities' involved in the referral process. 'Resentment' is measured in two ways; the degree that clients feel that they have been 'treated unfairly by the authorities', and the degree to which clients perceive NDIS as 'an opportunity to improve those aspects of their driving that need attention'. The relationship between these two variables is significant, but not particularly strong (correlation: $r=-0.193$, $p<0.001$).

7.7.1 Demographic differences

Although the great majority of clients consider the course to be an opportunity to improve their driving (refer to Section 4.2, page 17), male clients are generally less optimistic regarding the benefits than are female clients ($t=-2.222$, $df=1528$, $p=0.026$). No similar relationship exists with gender and the perception of unfair treatment.

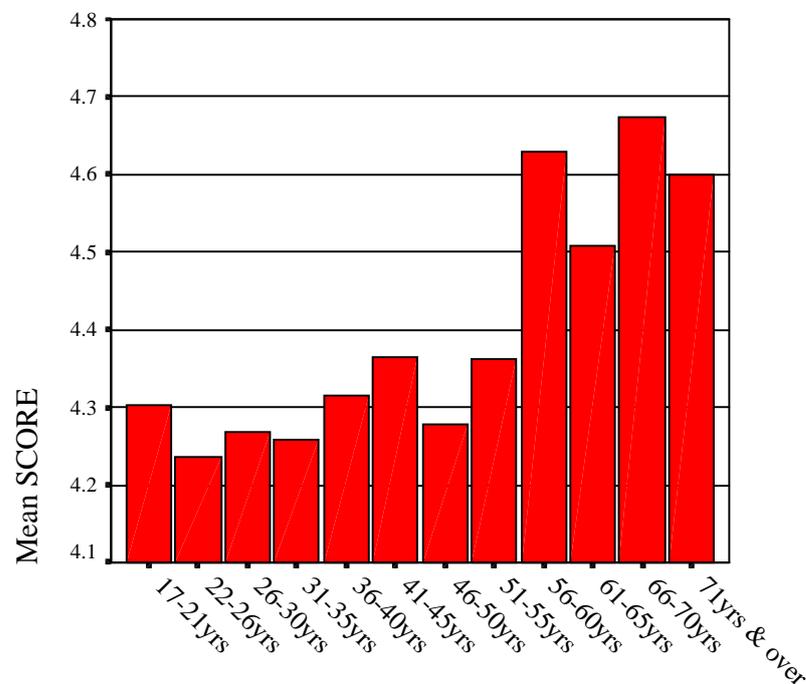


Figure 7.11: 'Opportunity to improve' scores (by age category)
(higher scores indicate stronger agreement)

Significant differences exist between the strength of perception of NDIS as an opportunity to improve, and age category ($F_{11,1540}=2.316$, $p=0.008$). From Figure 7.11 it may be seen that younger clients are less optimistic about the benefits of the course than older clients. An analysis of variance, contrasting the six younger age groups with the six older groups, indicates that this is indeed the case ($F_{1,1540}=16.073$, $p<0.001$). No similar relationship exists between age category and the perception of unfair treatment.

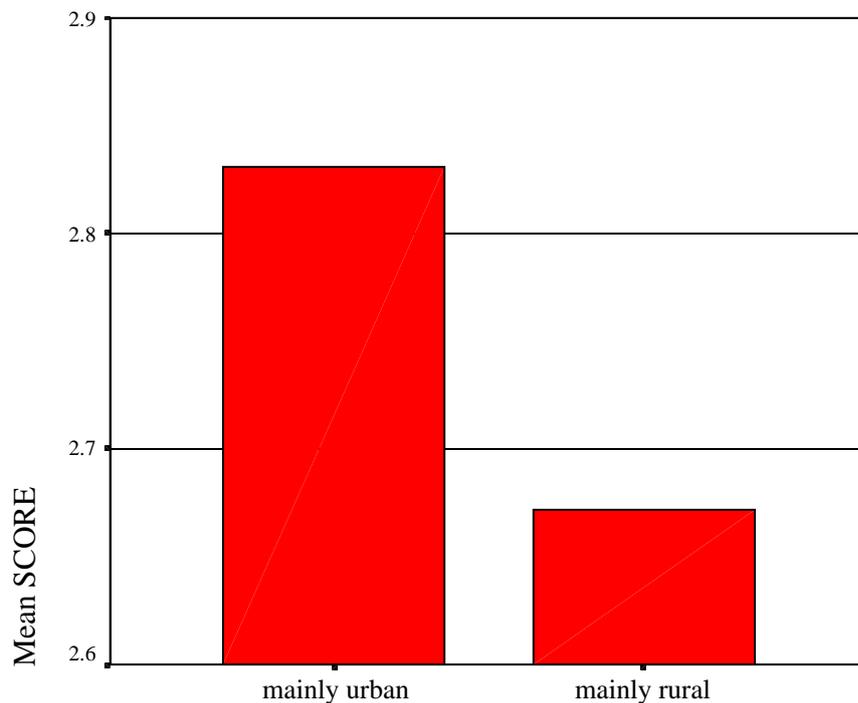


Figure 7.12: 'Unfairly treated' scores by clients' area of residence
(higher scores indicate stronger agreement)

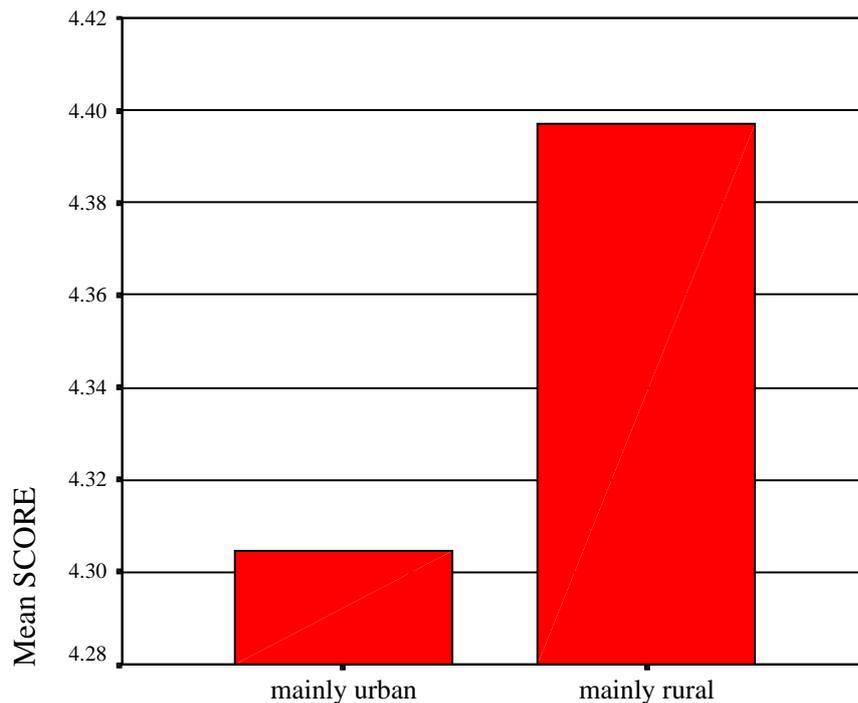


Figure 7.13: 'Opportunity to improve' scores by clients' area of residence (higher scores indicate stronger agreement)

The degree of resentment also appears to be affected by clients' area of residence. With reference to Figure 7.12, clients from urban areas consider their treatment to be significantly more unfair ($t=2.454$, $df=1519$, $p=0.014$). Differences in the perceived benefits of the course ('opportunity to improve', Figure 7.13) are almost significant ($t=-1.913$, $df=1525$, $p=0.056$), with rural clients displaying more optimism.

7.7.2 Pre-course differences

Inappropriate driving behaviour

Prior to attending the course, those drivers who agree strongly that NDIS is an 'opportunity to improve' committed more frequent lapses (approaches significance at $t=-1.802$, $df=1434$, $p=0.072$) and less frequent violations ($t=3.620$, $df=1434$, $p<0.001$) than those who agreed less strongly or disagreed. Clients who consider that they have been treated unfairly committed less frequent errors ($t=2.286$, $df=957$, $p=0.022$), but more frequent violations ($t=-2.369$, $df=957$, $p=0.018$) than those who considered themselves to have been treated fairly.

Accident involvement

Clients who consider NDIS to be an opportunity to improve have been involved in fewer accidents over the previous two years ($t=2.936$, $df=1413$, $p=0.003$) and in the period since passing their driving test ($t=2.109$, $df=1405$, $p=0.035$) than those who are

less enthusiastic. Conversely, clients who feel unfairly treated have been involved in fewer accidents in the previous three months ($t=2.723$, $df=940$, $p=0.007$) and since passing their driving test ($t=2.243$, $df=940$, $p=0.025$) than those who consider their treatment to have been fair.

7.7.3 Short-term effect measures

General attitudes

As violation frequencies reported above indicate, clients who do not consider NDIS to be an opportunity have significantly less appropriate attitudes towards traffic violations in general prior to attending the course ($t=-3.424$, $df=1434$, $p<0.001$). Similarly, clients who consider that they were unfairly treated by the authorities have significantly less appropriate attitudes ($t=4.436$, $df=957$, $p<0.001$) than those who felt fairly treated.

7.7.4 Longer-term effect measures

Note regarding response rates:

It might be expected that those clients who strongly resent the manner in which they are treated by the authorities, and who see no opportunity to improve, would be less likely to return the follow-up questionnaire. However, although there are significant differences between responders and non-responders in the degree to which they see the course as an opportunity to improve (Table 7.2), both responders and non-responders considered that they were treated equally fairly by the authorities (Table 7.1).

	<i>Opportunity to improve</i>	<i>Not opportunity</i>
<i>Respondents</i>	555 (44.9)	61 (31.3)
<i>Non-respondents</i>	680 (55.1)	134 (68.7)
<i>Totals</i>	1235 (100.0)	195 (100.0)

Table 7.1: Response rates by 'opportunity to improve: agree vs disagree', n (%)

	<i>Fair treatment</i>	<i>Unfair treatment</i>
<i>Respondents</i>	232 (43.1)	177 (42.1)
<i>Non-respondents</i>	306(56.9)	243 (57.9)
<i>Totals</i>	1235 (100.0)	195 (100.0)

Table 7.2: Response rates by 'treatment by the authorities: fair vs unfair', n (%)

No significant differences are evident, in terms of the longer-term effects of the course, between the 'fairly/unfairly treated' groups, or the 'opportunity/no opportunity to improve' groups

7.8 Section summary

Gender

- Male clients record roughly double the annual mileage of female clients.
- Male clients' attitudes are less safety-orientated than those of female clients before and immediately after the course, and after three months.
- Improvements in attitude after the course are greater for male clients than for female clients.
- Compared with males, female clients report more frequent lapses before and after the course, while male clients report more violations than do female clients.
- Male clients report less frequent lapses and errors after the course, compared with pre-course measures. Female clients report fewer violations.
- Female clients consider the course to be more of an opportunity to improve their driving than do males.

Age

- Older clients report more appropriate attitudes towards traffic violations before and after course attendance than do younger clients. This difference is reflected mainly in differing attitudes towards speeding and dangerous overtaking offences
- The effects of course attendance on changing attitudes do not vary with age.
- Younger clients report more violations than do older clients.
- Younger clients report more accidents in the two years before course attendance than do older clients.
- Clients in their mid-50s and older appear to be more optimistic regarding the opportunity afforded by the course to improve their driving

Area of residence

- Short-term effects of the course on improving attitudes are stronger for rural clients than for urban clients, although both groups show a significant improvement.
- Rural clients demonstrate an improvement in attitudes towards 'close-following' violations after the course, whereas the attitudes of urban clients become less appropriate towards this type of violation after the course.

- Although both groups demonstrate an improved attitude towards speeding offences, three months after the course, urban clients have retained more of this improvement than rural clients.

Professional drivers

- Clients who are professional drivers tend to be male, young and travel further than domestic/pleasure clients.
- Professional driver clients report more frequent violations prior to attending the course, than domestic/pleasure driver clients.
- After course attendance, there are no differences between groups in terms of violation frequency.
- Professional driver clients record a higher rate of accident involvement since passing their driving test and in the two years prior to course attendance.
- Professional driver clients maintain less appropriate attitudes before and after course attendance than other clients, this difference mainly reflected in attitudes towards speeding offences. However, there is no difference between these types of client in terms of the short-term effects of the course on attitudes.

Resentful clients

- Male clients consider NDIS to be less of an opportunity to improve than do female clients.
- Younger clients also consider NDIS to be less of an opportunity to improve than do older clients.
- Clients from urban areas consider that they have been more unfairly treated than clients from rural areas.
- Clients who consider NDIS to be an opportunity to improve commit more frequent lapses, but less frequent violations, prior to course attendance.
- Clients who consider that they have been treated unfairly commit less frequent errors, but more frequent violations prior to course attendance.
- Clients who consider NDIS to be an opportunity to improve have been involved in fewer accidents over the previous two years, and since passing their driving test, than those who do not consider NDIS to be an opportunity.
- Clients who feel unfairly treated have been involved in fewer accidents in the previous three months and since passing their driving test, than those who feel they have been treated fairly.

- Clients who feel unfairly treated, and those who do not consider NDIS to be an opportunity, have less appropriate attitudes towards traffic violations than those who feel fairly treated and optimistic about the opportunity to improve that NDIS offers.

SECTION EIGHT: LONDON SERVICE PROVIDERS

The Metropolitan Police Service (MPS) was requested by the Metropolitan Police Authority to assess the operational performance of service provision for the National Driver Improvement Scheme within its jurisdiction. The following section reports the Service Providers' operational performance in three sections; general performance, course provision and post-course follow-up. It should be noted that no incentive scheme was in operation for London clients.

8.1 General

Eighty-three percent of clients contacted their Service Provider with a query prior to attendance on the course. Of these over 40% were satisfied, and less than 6% dissatisfied with the way in which their query was dealt with (Table 8.1). Almost half of the clients were satisfied with the course date they had been allocated (18.5% dissatisfied, Table 8.2), and over 90% felt that they had been given sufficient notice of this date (Table 8.3). Course facilities were considered satisfactory by over 80% of clients (Table 8.4) and over three-quarters of the sample considered the location of the venue for the course to be convenient (Table 8.5).

Table 8.1: If you made any queries about the course before attending, how satisfied were you with the way in which your enquiry was dealt with?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	4	2.9
<i>Unsatisfied</i>	4	2.9
<i>Neither</i>	74	54.0
<i>Satisfied</i>	23	16.8
<i>Very satisfied</i>	32	23.4
TOTALS	137	100.0
<i>(Not applicable)</i>	<i>(28)</i>	

Table 8.2: How satisfied are you with the date of your course?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	10	6.0
<i>Unsatisfied</i>	21	12.5
<i>Neither</i>	58	34.5
<i>Satisfied</i>	41	24.4
<i>Very satisfied</i>	38	22.6
TOTALS	168	100.0

<i>Non-respondents</i>	(20)	
------------------------	------	--

Table 8.3: Were you given sufficient notice of course dates?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>yes</i>	155	91.7
<i>no</i>	14	8.3
TOTALS	169	100.0
<i>Non-respondents</i>	(19)	

Table 8.4: How satisfied were you with the course facilities?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	1	0.6
<i>Unsatisfied</i>	8	4.8
<i>Neither</i>	23	13.9
<i>Satisfied</i>	96	57.8
<i>Very satisfied</i>	38	22.9
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

Table 8.5: Was the location of the course venue convenient?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>yes</i>	127	76.5
<i>no</i>	39	23.5
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

8.2 Course provision

Almost all clients (97%) were generally satisfied with content and structure of the course (Table 8.6). The content of the classroom-based theory/workshop sessions was considered satisfactory by 88.5% of clients (Table 8.7), while 89.7% of the sample were satisfied with the presentation of this element of the course (Table 8.8). The overwhelming majority of clients were satisfied with the practical 'on the road' sessions (98.8%, Table 8.9) and instructors' feedback was also considered satisfactory by 98.2% of the sample (Table 8.10). The overall length of the course was thought to be 'about right' by 79.9% of clients (Table 8.11), with over 80% considering that the balance between the time allocated to theory and practical driving was 'about right' (Tables 8.12 and 8.13). Less than one-quarter of clients was aware of similar courses operating in other areas (Table 8.14).

Table 8.6: How satisfied were you with the course generally?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	2	1.2
<i>Unsatisfied</i>	1	0.6
<i>Neither</i>	2	1.2
<i>Satisfied</i>	89	53.6
<i>Very satisfied</i>	72	43.4
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

Table 8.7: How satisfied were you with the content of theory sessions/workshop?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	2	1.2
<i>Unsatisfied</i>	5	3.0
<i>Neither</i>	12	7.2
<i>Satisfied</i>	99	59.6
<i>Very satisfied</i>	48	28.9
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

Table 8.8: How satisfied were you with the presentation of theory sessions/workshop?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	2	1.2
<i>Unsatisfied</i>	4	2.4
<i>Neither</i>	11	6.6
<i>Satisfied</i>	92	55.4
<i>Very satisfied</i>	57	34.3
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

Table 8.9: How satisfied were you with the practical driving sessions?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	1	0.6
<i>Unsatisfied</i>	1	0.6
<i>Neither</i>	0	0
<i>Satisfied</i>	55	32.9

<i>Very satisfied</i>	110	65.9
TOTALS	167	100.0
<i>Non-respondents</i>	(21)	

Table 8.10: How satisfied were you with the feedback from your instructor?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	2	1.2
<i>Unsatisfied</i>	0	0
<i>Neither</i>	1	0.6
<i>Satisfied</i>	43	25.7
<i>Very satisfied</i>	121	72.5
TOTALS	167	100.0
<i>Non-respondents</i>	(21)	

Table 8.11: What did you think about the overall length of course?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Too long</i>	24	14.6
<i>About right</i>	131	79.9
<i>Too short</i>	9	5.5
TOTALS	164	100.0
<i>Non-respondents</i>	(24)	

Table 8.12: What did you think about the time allocated to the classroom?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Too long</i>	22	13.3
<i>About right</i>	139	83.7
<i>Too short</i>	5	3.0
TOTALS	166	100.0
<i>Non-respondents</i>	(22)	

Table 8.13: What did you think about the time allocated to practical driving?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Too long</i>	8	4.8
<i>About right</i>	142	85.0
<i>Too short</i>	17	10.2
TOTALS	167	100.0
<i>Non-respondents</i>	(21)	

Table 8.14: Are you aware of other similar courses?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
-----------------	--------------------------	----------------------------------

<i>yes</i>	40	24.0
<i>no</i>	127	76.0
TOTALS	167	100.0
<i>Non-respondents</i>	(21)	

8.3 Post-course follow-up

Response rates for the final questionnaire from clients attending the three London NDIS courses were lower than for the other courses involved in the study. Four clients failed to provide an address to which the final questionnaire could be sent, and out of the 184 questionnaires sent out, fifty were returned (27% response rate).

Asked if they felt that their driving had changed in the period since attending the course, 94% of respondents considered that it had (Table 8.15). Regarding respondents' perceptions of their treatment throughout the process of referral and attendance on the course, 68% were satisfied with the way in which they were treated by the police (Table 8.16), while 84% considered their treatment by their Service Provider to be satisfactory (Table 8.17).

Table 8.15: Have you noticed a change in driving since the course?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>A great deal</i>	26	52.0
<i>A little</i>	21	42.0
<i>Not at all</i>	3	6.0
TOTALS	50	100.0
<i>Non-respondents</i>	(138)	

Table 8.16: How satisfied were you with the way in which you were treated by the Police?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	4	8.0
<i>Unsatisfied</i>	3	6.0
<i>Neither</i>	9	18.0
<i>Satisfied</i>	23	46.0
<i>Very satisfied</i>	11	22.0
TOTALS	50	100.0
<i>Non-respondents</i>	(138)	

Table 8.17: How satisfied were you with the way in which you were treated by the course provider?

<i>Response</i>	<i>Number of clients</i>	<i>Percentage of respondents</i>
<i>Very unsatisfied</i>	6	12.0

<i>Unsatisfied</i>	1	2.0
<i>Neither</i>	1	2.0
<i>Satisfied</i>	16	32.0
<i>Very satisfied</i>	26	52.0
TOTALS	50	100.0
<i>Non-respondents</i>	(138)	

SECTION NINE: NON-RESPONDENTS

9.1 Introduction

The response rates in the following section refer to the number of clients completing and returning the final, three-month follow-up questionnaire.

9.1.1 Defining non-respondents

In the immediate post-course measure clients were asked to provide an address to which the three-month follow-up schedule could be sent. Some clients may not have completed this section, and so the final schedule could not be sent to them. In addition, those clients who passed through the courses between 1st July and the end of September 1998 (the final courses to contribute to this study) will not have reached the three-month mark after course attendance. The response rates reported in this section are therefore based upon the total number of clients (N=1,579) passing through courses between October 1997 and 30th June 1998. Figures for non-respondents include those clients who failed to provide a postal address for the final questionnaire to be sent.

9.1.2 Basis for comparison

Non-respondents may be compared with respondents on the basis of the information supplied in the first three questionnaires (pre-course, immediate pre-course and post-course measures). These data include demographic and exposure variables, as well as short-term effect measures

9.2 Demographic differences

9.2.1 Gender

A significantly higher percentage of female clients returned the final questionnaire; 53.1% for female, compared with 39.8% for male clients ($\chi^2=51.923$, $df=1$, $p<0.001$, see Table 9.1).

	<i>Male, n(%)</i>	<i>Female, n(%)</i>
<i>Response</i>	402 (39.8%)	222 (53.1%)
<i>Non-response</i>	608 (60.2%)	196 (46.9%)
<i>Totals</i>	1010	418

Table 9.1: Response rates to follow-up (by gender)

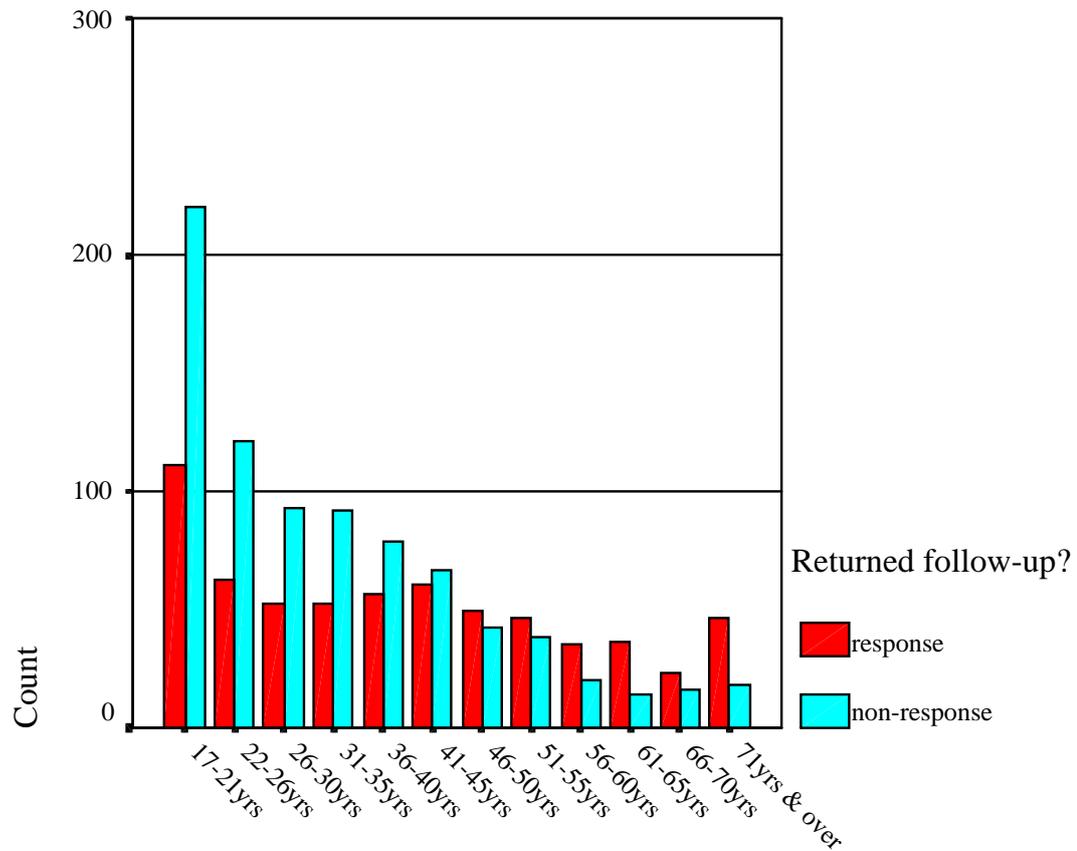


Figure 9.1: Response to follow-up (by age category)

9.2.2 Age category

Older clients were significantly more likely to respond to the follow-up questionnaire than younger clients ($\chi^2=85.391$, $df=11$, $p<0.001$ and linear-by-linear coef.=78.915, $df=1$, $p<0.001$, see Figure 9.1).

9.2.3 Area of residence

A significantly higher percentage of clients from rural areas returned the final questionnaire; 47.2% for rural clients, compared with 41.5% for urban clients ($\chi^2=25.442$, $df=1$, $p<0.001$, see Table 9.2).

	Urban, n(%)	Rural, n(%)
Response	375 (41.5%)	249 (47.2%)
Non-response	528 (58.5%)	278 (52.8%)
Total	903	527

Table 9.2: Response rates to follow-up (by area of residence)

<i>Service Provider</i>	<i>Total clients (follow-up)</i>	<i>Respondents (follow-up)</i>	<i>% response</i>
Devon	277	118	42.6
Hereford & Worcester	252	107	42.5
Hertfordshire	339	106	31.3
Shropshire	245	110	44.9
Staffordshire	309	147	47.6
Barnet	84	27	32.1
Bexley	42	16	38.1
BSM (Central London)	21	7	33.3
TOTALS	1,569	638	40.7

Table 9.3: Response rates to follow-up (by service provider)

9.2.4 Service provider

Response rates appear relatively stable between service providers, although it appears that those courses closer to London suffer lower response rates. This is most likely due to a stronger tendency among urban drivers of not returning the questionnaire. An overall response rate of 40.7% was achieved (see Table 9.3).

9.2.5 Experience

Respondents had held their full driving licence for an average of 11.88 years, significantly longer than the 8.04 years for non-respondents ($t=3.788$, $df=433$, $p<0.001$).

9.3 Client perceptions of NDIS

9.3.1 Opportunity to improve

Respondents and non-respondents differ only in the degree to which they consider NDIS as an opportunity to improve aspects of their driving that need attention. Although both groups agree that NDIS is an opportunity to improve, respondents are significantly more optimistic about the opportunity the course affords ($t=4.133$, $df=1428$, $p<0.001$).

9.4 Short-term effect measures

Only differences in the short-term effects on attitudes can be assessed, as the return of the longer-term measures determines response or non-response.

9.4.1 General attitude

Non-respondents have a less appropriate attitude towards traffic violations in general than respondents, both before ($t=4.175$, $df=1338$, $p<0.001$) and immediately after ($t=5.133$, $df=1465$, $p<0.001$) attending the course. However, there is no difference between the pre-course and immediate post-course measures for the two groups, both respondents and non-respondents showing a significant improvement in general attitudes towards offending immediately after the course (Figure 9.2).

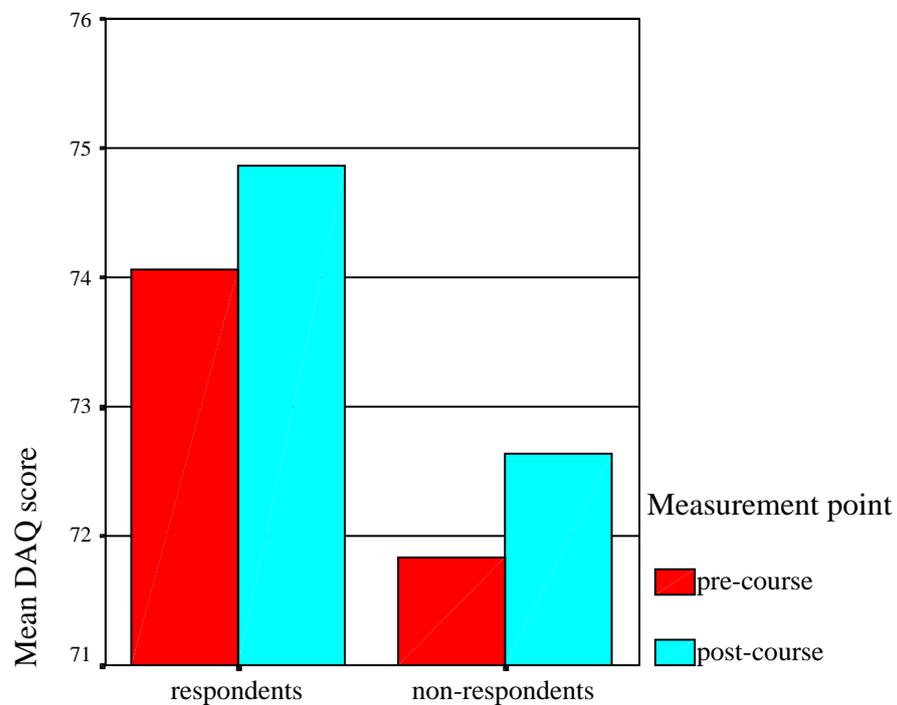


Figure 9.2: DAQ scores pre-course vs post-course

(higher score indicates more appropriate attitude)

9.4.2 Driving attitudes subscales

A similar pattern is observed with each of the subscales, as with the main attitude scale above. Pre-course and immediate post-course measures show non-respondents consider the offences to be less serious than do respondents, but no significant difference in the short-term effect of the course on attitudes is evident (Figures 9.3 and 9.4).

9.5 Accident involvement (self-reported)

Non-respondents report a significantly lower level of accident involvement, throughout their driving career to date, than do respondents ($t=2.815$, $df=1308$, $p=0.005$; see Table 9.4).

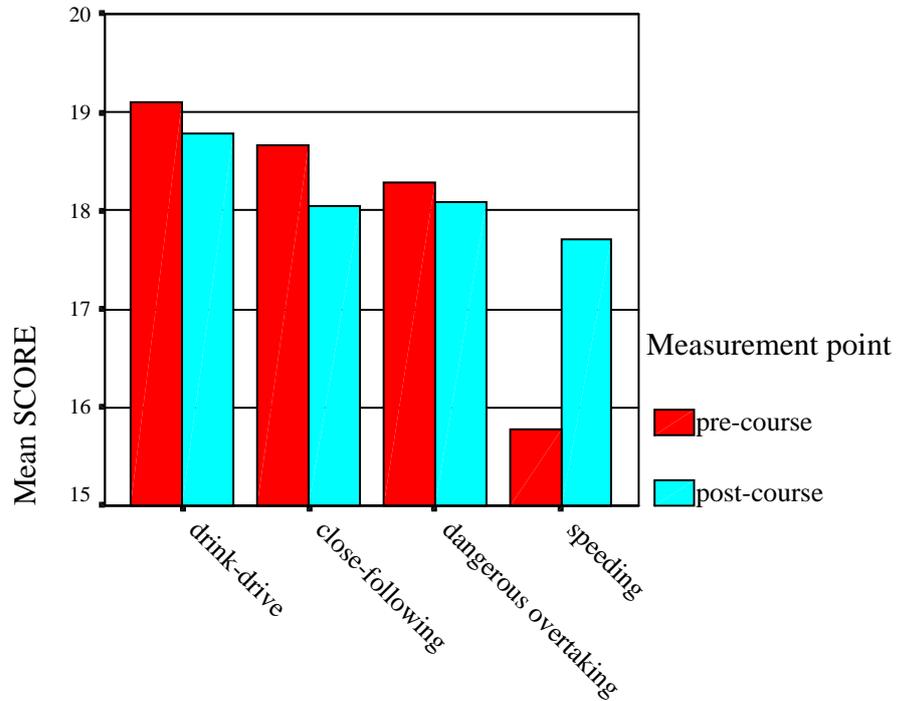


Figure 9.3: Respondents attitudes towards violations (pre-course vs post-course)
(higher score indicates more appropriate attitude)

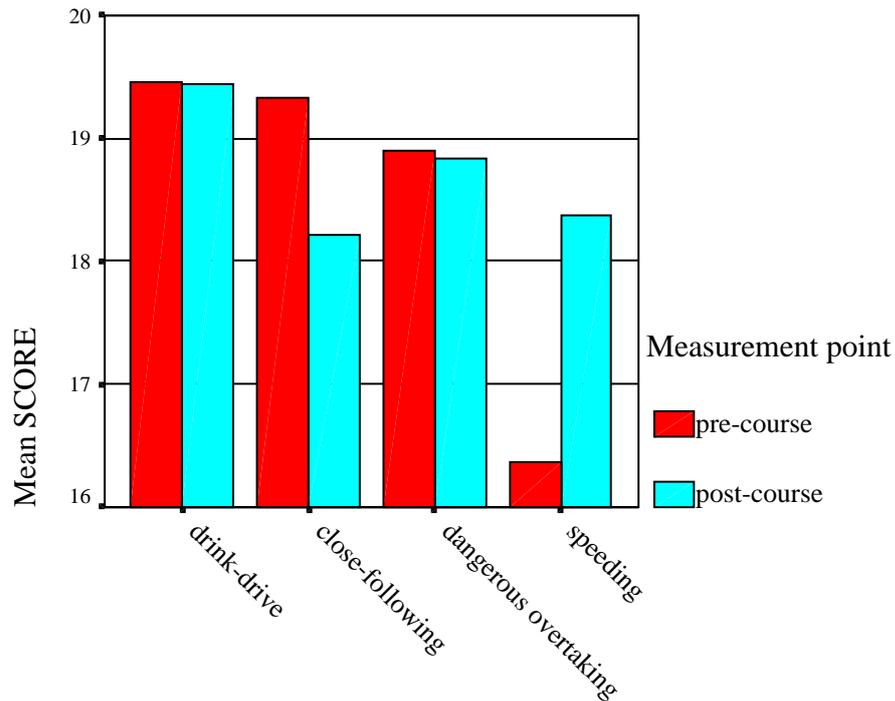


Figure 9.4: Non-respondents attitudes towards violations (pre-course vs post-course) (higher score indicates more appropriate attitude)

9.6 Self-reported violations

Non-respondents report that they committed violations more frequently in the three month period prior to course attendance than do respondents ($t=-2.668$, $df=1338$, $p=0.008$; Table 9.5).

	<i>Frequency</i>	<i>N</i>
<i>Respondents</i>	2.38	601
<i>Non-respondents</i>	2.13	709

Table 9.4: Self-reported accident involvement over driving career (frequency and sample size)

	<i>Mean violations</i>	<i>Std dev.</i>	<i>N</i>
<i>Respondents</i>	3.96	3.54	601
<i>Non-respondents</i>	4.54	4.33	709

*Table 9.5: Pre-course violation score (DBQ: mean and standard deviation)
(Respondents vs non-respondents)*

9.7 Section Summary

- More female clients responded to the follow-up than males.
- Older clients were more likely to respond than younger clients.
- Clients from rural areas were more likely to return the follow-up than those from urban areas.
- Respondents consider NDIS to be more of an opportunity to improve their driving than do non-respondents.
- Although non-respondents have less appropriate attitudes before and immediately after the course than respondents, the course appears equally effective in terms of the degree that the pre-course attitudes are modified.
- Non-respondents report fewer accidents throughout their driving career than respondents.
- Non-respondents report more frequent violations before the course than do respondents.

SECTION TEN: DISCUSSION

10.1 Introduction

The results of the Evaluation Study are summarised in the following sections, and some conclusions drawn. Aspects of the methodology used in this project are critically evaluated, and implications for NDIS course content and delivery are discussed.

10.2 Clients' perceptions of NDIS

Although mainly seen as a way of avoiding a court appearance, and the accompanying likelihood of penalty points and a fine, most drivers are optimistic about the opportunity to improve particular aspects of their driving.

Clients who consider NDIS to be an opportunity to improve their driving have more appropriate attitudes towards traffic violations, and have been involved in fewer collisions over the previous two years and since passing the driving test. However, these clients report more frequent lapses and less frequent violations. Clients aged 55 years and over consider the course to be significantly more of an opportunity than younger clients. These points may support the notion that some clients welcome the opportunity to improve their driving because they may have noticed a certain amount of impairment in their ability to perform the driving task and thus recognise the need for some kind of retraining.

Clients who feel that they have been treated unfairly by the authorities have been involved in fewer accidents in their driving careers, report less frequent errors, more frequent violations, and have significantly less appropriate attitudes toward traffic violations.

From the points above, it is likely that there are broadly two types of client referred to NDIS. The first are those clients who may be thought of as having a 'skills' deficit, a problem that may be rectified through traditional methods of driver instruction. The second group consists of those who maintain inappropriate attitudes towards traffic laws and are more likely to transgress those rules; what may be thought of as an 'attitude' deficit. The differentiation between these two broad types of client, and the implications for NDIS, are discussed in Section 10.6.

10.3 Attitude modification

The data reveal a significant overall improvement in attitudes towards traffic violations, particularly with regard to speeding offences. Prior to the course, attitude measures reflect that speeding offences are not perceived as serious transgressions. A number of specific groups demonstrate significantly less appropriate attitudes prior to course attendance than the rest; males, younger clients and professional drivers (there

was no significant relationship between attitudes and exposure, measured in terms of *experience* and *annual mileage*). This would indicate that these inappropriate attitudes are a function of more than simple exposure to the driving environment.

Just over half of clients demonstrate a significant improvement in attitudes immediately after the course. Those clients who do not demonstrate an improvement have significantly more 'appropriate' attitudes to begin with, and it is therefore likely that a 'ceiling' effect is partially responsible for this finding.

Attitudes towards speeding become significantly more appropriate immediately after the course; the perceived seriousness of speeding offences is now more in line with the other three violations. This significant improvement in attitudes towards speeding offences is retained after three months.

10.4 Behaviour modification

Significant reductions in the frequencies of commission of lapses, errors and violations are all evident in the three months following the course. These frequencies are highly correlated before and after the course, implying that it is largely the same individuals committing the acts, although they are committing them less frequently than they were prior to course attendance.

Accident involvement is shown to be significantly reduced after the course, but was only tested over a three-month period. It should be noted that the majority of clients are referred to NDIS as a result of 'blameworthy' accident involvement. RTA frequency is thus a primary selection criterion for the sample of drivers studied here. Comparing the pre-course 'mean annual RTA involvement' of the NDIS sample (corrected for 'involvement in the previous three months', see Section 3.3.7) with the National average of one in every nine years (Stradling, 1998; personal correspondence), the NDIS clients appear to be no different to a general population sample. Calculated over the client's driving career, this mean annual frequency is the closest comparison possible with a general population, given the time limits of the study. It is possible that the majority of NDIS clients do not differ markedly from a general population in terms of their RTA involvement, other than the fact that they are involved in *at least* one collision in their driving career.

10.5 Changes within specific groups

It has already been suggested that the optimism regarding NDIS displayed by clients aged 55 years and over implies that they recognise a degree of impairment or skills deficit in their driving. Older clients report fewer violations than younger clients, but more frequent lapses. This supports the idea that older drivers need help adjusting to the impairment brought about by the ageing process, and NDIS is seen by them as offering that help. Younger drivers are more likely to display problem attitudes, rather than a skills deficit, and so a different approach is required.

Professional drivers attending NDIS report a significantly higher violation frequency before the course than domestic/pleasure drivers, although there is no significant

difference following the course. There has thus been a greater (self-reported) improvement in violation frequency for professional driver clients than for the rest. In addition, although professional drivers report significantly less appropriate attitudes towards traffic violations before and after the course, there is no difference in the effects of the course on attitudes between the two groups of clients, with both groups showing an equal improvement in attitude scores. From these results it seems that professional driver clients demonstrate a greater improvement in self-reported violation frequency than non-professional clients, even though the improvement in attitudes is the same for both groups. The implication here is that there is some factor that distinguishes professional drivers from other clients attending the course, and that this difference results in a higher degree of course effectiveness. It is likely that self-interest has had a part to play here, in that the negative consequences of violating traffic law on the individual (accident involvement, potential prosecution and the subsequent higher insurance premiums and effects on work) have been made far more salient. These consequences are likely to have had more profound implications for those whose livelihood depends upon their driving licence, and whose employers are likely to be displeased by the increased insurance premiums that collisions and convictions for traffic offences will result in. The changes in behaviour have thus come about under duress, rather than as a result of a change in attitude. Furthermore, it implies that methods used successfully in commercial fleet training may not necessarily achieve the same degree of success when applied to non-professional drivers.

This issue regarding enforced changes in behaviour is evident in the case of differences between rural and urban drivers. Urban clients maintain an improvement in speeding-related attitudes longer than clients from rural areas. Furthermore, differences in the effects of course attendance on attitudes towards dangerous overtaking and close-following are evident between rural and urban clients. Rural clients show an improvement in attitudes in the short-term towards dangerous overtaking, whereas the attitudes of urban drivers towards this offence actually become less appropriate following the course. Driving in an urban environment, speed is necessarily limited by the increased congestion found in such areas, and dangerous overtaking is less likely to be considered a safety problem due to the reduced speeds involved. However, it is unclear whether these differences in attitude are due to differences in the perceived danger involved or the seriousness of such behaviour between the groups, or whether urban clients are simply justifying to themselves their frequent inability to exceed the speed limit or to engage in dangerous overtaking manoeuvres, due to the physical environment. Regardless of the cause of these differences, it is clear that attitudes and behaviour are dictated, to a certain extent, by the driving environment to which the driver is most regularly exposed. The implications for course design are equally clear; it must take into account differences in client-base and tailor the course content accordingly.

Clients who display resentment prior to attending the course are generally those whose attitudes are less appropriate. Males, younger clients and those from urban areas feel less fairly treated and see less of an opportunity to improve. Those clients who feel unfairly treated have been involved in fewer recent accidents (previous three months), and since passing their test. Resentful clients therefore have less appropriate attitudes, but a better safety record. It is not possible to attribute this safety record to better

driving skills or ability, or to the likelihood of being involved in a collision. It may be that the forgiving nature of the road system has allowed these drivers to get away with driving in an inappropriate manner thus far. It should be remembered that accident involvement is the most common, but not the only reason for referral to the course; if a driver is considered to be driving in an inappropriate manner, they may also be referred by the police.

Those clients who see the opportunity to improve commit more frequent lapses and less frequent violations, and have been involved in fewer accidents since passing their driving test. Again, it is likely that chance has resulted in this lack of accident-involvement, rather than any factor inherent in the drivers themselves.

The clients' perception of the course, upon arriving at the training centre, appears to be that they are there in order to be taught how to drive again. Clients who feel that their skills are substandard, or have been affected by factors such as age, appear to welcome the opportunity to reassess and improve their driving. The majority of clients who arrive at the training centre with inappropriate attitudes towards traffic law reveal that they don't consider that the course has anything to offer them, other than as a way of avoiding a court prosecution and the inevitable penalty points on their licence. However, if their behaviour after the course is *psychologically* rather than physically inhibited, these clients do show an improvement in self-reported attitudes and behaviour, still evident after three months.

10.6 NDIS clients: Dangerous and careless, or unskilled and impaired?

The type of offender referred to NDIS is obviously not homogeneous. This type of a system of disposal was originally intended to correct areas of skill-based deficiency; 'refresher' training. However, it seems clear that a second type of offender is also referred to NDIS; those with what may be thought of as an 'attitude' problem.

On a very general, simplistic level, the road system is considered to be highly forgiving. That is, a driver can simultaneously commit a number of errors or violations, and not be involved in a RTA. The driving environment has been engineered in such a way that a considerable safety margin exists between the type of driving style proscribed by driving instructors and road traffic law, and that behaviour that is certain to result in a crash. Factors that reduce that safety margin are those factors that increase the likelihood of a particular driver being involved in a RTA. Broadly speaking, these factors may be defined as skill-based and attitude-based deficiencies, and both of these types of deficit serve to reduce the safety margins engineered into the driving environment.

Skill-based deficiencies may be addressed by traditional training methods, offered in the practical sessions of the NDIS course. In addition, these deficiencies may be ameliorated by changes in attitude. For example, an elderly driver, realising that their reactions are slower than they used to be, may be referred to NDIS and as a result of the practical training, change their attitudes regarding the use of their vehicle. If the driver is more aware of the nature of the driving task, they are more likely to ensure that they are not fatigued or stressed before they drive, thus maintaining the safety margin as far as possible.

Attitude-based deficiencies need to be tackled in a different manner, and the issues surrounding this topic are discussed in Section 10.9.

10.7 Driving style

An individual's driving style is predominantly habitual, developed over the years as a result of experience. Everyday experience of a particular driving environment will result in consistent patterns of behaviour. An example of this is the reported difference between urban and rural clients in their attitudes towards close-following. Rural clients demonstrate an improvement in attitudes towards close-following immediately after the course, whereas urban clients' attitudes towards the offence actually become less appropriate. As has already been suggested, speeds in built-up urban areas are generally lower due to greater traffic congestion, and thus the perception of the seriousness of offences such as close-following could be interpreted in terms of speed rather than the specific offence. Supporting this suggestion is the finding that urban clients still demonstrate a significant improvement in attitudes towards speeding three months after the course, while rural clients maintain their improved attitude towards close-following over the same period. Clients who live in predominantly urban areas are therefore likely to have a driving style that involves smaller following distances than their rural counterparts, but lower speed. The implications of this for NDIS are discussed in Section 10.9.

In measuring attitudes, as with this study, we are actually measuring an individual's 'behavioural intention'; how that person would *like* to behave in a particular set of circumstances. However, invariably the individual will have developed a habitual style of behaviour to which they revert after any kind of intervention. In order to maintain the behavioural intentions, habitual behaviours must be altered. Attending NDIS allows clients to assess their own driving style and to consider its appropriateness in light of their more recent experiences. The modification of attitudes, or behavioural intentions, make the process of change considerably more likely as this gives the driver a justification for the change in their behaviour.

10.8 Changing driving behaviour in the longer-term

The follow-up questionnaire, arriving three months after attending NDIS, may have acted as a reminder of the instruction received on the course and the 'good resolutions' made by the clients to their instructors or themselves. It may be that the questionnaire is partially responsible for the improvement in attitudes at the follow-up measurement point. Indeed, knowing that a further questionnaire would be sent out and that their progress checked up on, clients may have felt that they were 'on probation' in the three months following the course. If this is the case, it supports a piece of research from the US which shows that longer terms of licence suspension lead to improved attitudes and behaviour in banned drivers once they regain their licence. It is estimated that the great majority of suspended drivers in the US do not stop driving during their period of suspension (Peck, 1991; Ross, 1991), but they are considerably more law-abiding throughout this period, as the penalties for driving while disqualified are severe. This more sedate and safety-orientated behaviour becomes accommodated in the habitual driving style of the individual; indeed it redefines the driving style. The longer the

licence suspension, the more likely it is that this new style will be retained, even after the licence is regained (Hurst, 1980).

Habitual driving style is a constant influence on any driver; it is psychologically 'ever-present' and persistently influences how the individual behaves on the road. In order to change that driving style, any corrective influence must also be continually present or the driver will revert back to their previous inappropriate style. In order to maximise the effects of interventions of this type, methods must be determined that ensure that the clients receive frequent reminders of the instruction given on the course, emphasising the 'probationary' nature of the period following the course.

10.9 Implications for course design

The group of NDIS clients who simply need help with their driving skills and techniques are well catered-for in the practical driving segment of the course. For the second group, those with inappropriate attitudes, another approach is required.

Behaviour vs attitudes

It must be remembered that changing attitudes does not necessarily change behaviour, but changes in behaviour have been shown to reliably change attitudes. Howarth (1988) suggests that:

"It has been frequently demonstrated that attitudes are easier to change than behaviour and that a verbally expressed belief... ..may not be reflected in any increase in the related and easily observed behaviour. In contrast it has frequently been demonstrated that changes in behaviour, induced by environmental pressure, can lead to a change in verbally expressed attitudes, usually in the direction which justifies the new form of behaviour ". (p.527)

In other words, changing attitudes does not necessarily affect behaviour, but if we are able to change behaviour, attitudes are likely to follow if the individual is able to justify those changes. It has long been established that humans '*search for meaning*' in their own actions, as well as the actions of others. We try to understand why we behaved in a particular way. If our behaviour changes, due to factors beyond our control, we will look for reasons to justify those changes. If we cannot justify the new modes of behaviour, we will revert to our old ways.

What is required is to enforce or induce a change in behaviour, and couple that with an educational approach based on justifying those changes in behaviour on a moral basis. If an individual's behaviour is changed, for example, by significantly increasing enforcement, once the physical or legal constraints are removed it is likely to revert back to an earlier pattern. Unless increased enforcement levels are undertaken over a prolonged period of time, the individual's driving style has not had time to change, and their behaviour will revert to match their established driving style. Prolonged increased enforcement is expensive and unpopular, and so alternative methods must be found.

Justification of Road Traffic Law

The NDIS course already tackles the issues of legitimacy of Road Traffic Law, by establishing the causes of inappropriate or sub-standard driving, and their effects on other road-users. In establishing the justification for traffic laws, the clients are given a justifiable reason to maintain any behavioural changes based on those laws (Section 11.3 contains a further discussion of these issues). However, as suggested above, this will not be enough to generate permanent changes in driving behaviour. In addition to giving the reasons behind the regulations, it is necessary to induce those behavioural changes directly, if for only a relatively short period of time.

Environmental cues

If it is not practical to physically impose new forms of behaviour on individuals, methods must be found to achieve this indirectly. One possible way of doing this is to ensure that somewhere in the environment is a reminder of the elements of training that constituted the intervention. Reminding the individual of the justification and legitimacy of a particular rule will make compliance significantly more likely, as it acts as a reminder of their behavioural intentions upon completion of the course and justifies those changes in their behaviour. This approach has been shown to be effective in seat-belt use in the US (Geller, Berry, Ludwig, Evans, Gilmore & Clarke, 1990), and it indicates a need to carefully consider the construction of the NDIS course model to maximise this 'cueing' effect.

Follow-up

It has been shown that attitudes can change to become consistent with behaviours, and safe behaviours can become habitual, apparently even when the behaviours are performed under legal duress, as when driving while banned (Hurst, 1980). The effect of probationary measures is to bring into line the individual's attitudes with those changes in behaviour which are imposed through external means. The changes in behaviour become routinised and, once this is achieved, are slow to revert. If it is possible to maintain the new, appropriate behaviours for a certain amount of time, a 'probationary period', the chances that those behaviours will become habitual are significantly increased, particularly if the individual is able to justify those changes to themselves on moral grounds.

There are a number of measures that could be used in following up a client who has completed a NDIS course. They range from simply sending out further information about other training courses or services offered by a service provider, to a legal requirement to re-attend the training centre a set period after course completion. The stronger the incentive to maintain the new behaviours, the better, as this will increase the chances that they are routinised. However, any extended 'probationary' period will reduce the attractiveness of the scheme in comparison with the alternative option of a court appearance. This point, as well as the legal and political considerations, must obviously be taken into account when making any changes to the current system.

10.10 Section Summary

1.5 Behaviour modification

- Significant reductions in the self-reported frequency of commission of lapses errors and violations (see p.14) are evident after the course.
- High correlations between before and after measures suggest that it is largely the same clients who are committing these acts of inappropriate behaviour before and after course attendance, but they are committed less frequently.
- No differences in self-reported near-misses are evident before and after the course.
- A significant reduction in self-reported accident involvement may be an artefact of the method of data-collection. Collisions are extremely infrequent events, so given a longer follow-up period, the effect of this artefact would be substantially reduced, allowing any true effect to be observed. Provision has been made in the methodology for a two-year follow-up.

10.11 References

Geller, E.S.; Berry, T.D.; Ludwig, T.D.; Evans, R.E.; Gilmore, M.R. & Clarke, S.W. (1990) A conceptual framework for developing and evaluating behaviour change interventions for injury control. *Health Education Research*, 5, 2, 125-137

Howarth, C.I. (1988) The relationship between objective risk, subjective risk and behaviour. *Ergonomics*, 31, 4, 527-535

Hurst, P.M. (1980) Can anyone reward safe driving? *Accident Analysis & Prevention*, 12, 217-220

Peck, R.C. (1991) The general and specific deterrent effects of DUI sanctions: A review of California's experience. *Alcohol, Drugs & Driving*, 7 1, 13-42

Ross, H.L. (1991) Licence deprivation as a drunk-driver sanction. *Alcohol, Drugs & Driving*, 7 1, 63-68

SECTION ELEVEN: FUTURE DIRECTIONS

11.1 Introduction

There are various areas within the present evaluation study that are open to criticism. One of these is the validity of the criterion variables; that is, the measures that have been shown to be affected by NDIS intervention. In the following section, these issues are discussed, and the relationship between attitudes and behaviour explored in order that a valid assessment of the effects of NDIS may be made.

11.2 Social desirability

A factor that must always be considered in self-report questionnaire-based studies is that of social desirability. Does the respondent answer the questions in such a way that they maintain a positive self-image, or are they being honest. It is possible to take a number of steps to alleviate this problem. For example, confidentiality and anonymity of responses can be stressed, and in the case of the Evaluation Study, a 'lie' scale introduced to identify those individuals who may respond to items less than honestly. It is encouraging that the responses from those clients whose responses may be suspect (ie: the 10% of clients who disagreed with the 'avoiding court prosecution' item, Section 4.1) do not differ significantly on any variable from the rest of the sample. This indicates that the responses are reasonably honest.

However, an additional factor must be considered. Clients may justify the time, money and effort that they have expended in attending the course, by responding favourably to the questionnaire items. This point draws on the argument that behaviour may not be dependent upon attitudes as much as attitudes are dependent upon behaviour. In other words, clients have spent money on attending the course; they have given up two days of their time, and they have been asked to contribute opinions and other personal input throughout the process. Justifying to themselves their 'investment' upon completing the course could be done in terms of a conscious, but possibly short-lived, change in attitudes and a feeling that they 'must have committed fewer violations, errors and lapses since the course', because there would have been little point in making the investment if they had not. What is required is a measure that relates closely to an element of undesirable behaviour, but that is not exposed to the type of social desirability effects described here.

11.3 Issues regarding control groups

Effects of the RTA

A criticism of the Evaluation Study is the absence of a control group; it does not directly compare the effects of attending a Driving Improvement course with the

alternative of a court prosecution. It is possible that attitude modification and changes in self-reported behaviour are due simply to the fact that the majority of NDIS clients have been involved in a road traffic accident (RTA), and it is this experience that has prompted the changes. Most offenders perceive the likelihood of a traffic violation resulting in a collision as being extremely low. Indeed, it has been shown that frequent traffic offenders perceive the chance of a collision as lower than the population generally. Offenders who have been involved in a collision will obviously revise this estimate of likelihood. The *potential* negative consequence has become a reality, and it may be this effect that is being measured in the Evaluation Study, rather than any effect specific to attending the course.

This criticism may be answered in two ways. Firstly, the pre-course attitude measure was taken after the RTA and contact with the Police had taken place. Therefore, by the time the first questionnaire was completed, any changes specific to the experience of RTA involvement or contact with the Police would have already taken place. Differences in the '*pre-course vs post-course*' measures can only have been due to factors associated with course attendance. The only way that 'pre-RTA' values could be established would be by comparison with a general population norm for attitudes towards the four violations. However, this method would ignore the accepted finding that individuals who commit more traffic offences, and thus have an increased risk of RTA involvement, have less appropriate attitudes towards traffic offences than the general population. Any study that attempted to identify these individuals in the general population, and then to track them until their possible involvement in an RTA and possible consequent referral to NDIS would be prohibitively lengthy, and thus expensive.

Justification of the Law

The second response to the above criticism must be described in theoretical terms, as specific research in this area has not taken place. As already discussed, it has been found in numerous studies that individuals whose driving style leads them to commit a high frequency of traffic violations, have less appropriate attitudes towards those offences than the general population. This attitude is likely to be informed by the perceived legitimacy of the rule or law that proscribes or prohibits the relevant behaviour. After all, if an individual feels that a rule is justified and the consequences of a transgression likely and undesirable, they are likely to abide by that rule.

A considerable body of research (eg: Smetana, 1981, 1985; Blair, 1997; Hemphill, Hare & Wong, 1998) has shown that if the rule is considered to be based on 'moral' grounds, it will be seen as more legitimate. That is, if the rule is seen to be protecting people's rights or welfare, it is more likely that an individual will adhere to it, even if they themselves are not directly affected. The other type of rule, the 'social convention', is seen as simply the way society organises itself. For example, in the UK we drive on the left; in France they drive on the right. Nobody suffers in France, due to the different rule; it is simply the way that the system is co-ordinated. Social-conventions are frequently seen as optional, and therefore a rule that is perceived as a social-convention is more likely to be transgressed. A relevant example of this distinction is the contrast between drink-drive laws and those governing the maximum speed limit. Due mainly to the prolonged media campaign, drink and driving is

perceived as a moral transgression (eg: Moskowitz, 1989). It is a common perception that drinking and driving makes you a 'bad' person. Conversely, speeding is considered to be a social-conventional transgression. Consequently, it is far more commonly observed and there is less social pressure to remain within the law. Indeed, efforts to enforce the law may be seen as inconvenient but commendable in the case of drink-driving, but little more than revenue generation in the case of speeding offences.

The evaluation study shows that clients who feel unfairly treated before the course have been involved in fewer RTAs in the three months before the course. It is likely that these clients had been referred to NDIS for a violation that did not result in a collision, and they have thus not suffered one of the negative consequences of their transgression. The absence of this factor is likely to enforce the perception that they are being punished for transgression of a social-conventional rule. A collision would highlight the effects on others of their behaviour and thus emphasise the moral implications of transgressing the law. These clients also have less appropriate attitudes towards traffic violations, which is concordant with a tendency to justify these offences solely on social-conventional grounds.

Justification of a particular rule on moral grounds, compared with social-conventional grounds, will increase the likelihood that the rule is perceived as legitimate. If a driver considers a rule to be highly legitimate, they are unlikely to transgress that rule. Measuring the ways in which drivers feel traffic laws are justifiable in terms of moral or social-conventions, could be a convenient way of predicting the likelihood that they will commit traffic violations. It could also be a valid measure of the success of an intervention such as NDIS.

Challenging perceptions

An individual facing prosecution for a traffic offence that may, or may not have led to a collision is therefore likely to consider that the law that they transgressed is based on social-conventional, rather than moral grounds. The process of court prosecution does nothing to challenge that perception, indeed it may reinforce it. A common perception is that 'the punishment fits the crime'. The standard punishment for motoring offences is a formal bureaucratic procedure, which enables 'society' to fine the individual and to endorse their licence. Both of these penalties are based on social-conventions; financial penalty and the threat of withdrawal of the privilege to use the roads legally. If the penalty is seen in terms of social-conventions, then it is highly likely that the crime will be perceived in the same way. The offending driver may consider that the only thing that they did wrong was to get caught. The option of re-education interventions challenges the offender's perceptions of the law. Throughout the NDIS courses, a great deal of time is spent discussing responsibility, avoidability, and the reasoning behind road traffic law. If an offender's perceptions of traffic law are challenged in the right way, it makes recidivism less likely. Using the distinction between moral and social-conventional justification of rules could be the mechanism by which the changes in attitude and self-reported behaviour take place.

11.4 Attitudes towards speeding offences as indicators of 'safe' driving

The NDIS course is shown to have most effect on attitudes towards speeding offences. Excessive or inappropriate speed is widely considered to be the primary contributing factor in the majority of collisions. It is likely that an emphasis on speeding offences has reduced the importance of close-following or dangerous overtaking, a factor that has led to the changes in clients' attitudes towards these offences in the short-term.

It is reasonable to assume that the driving environment largely dictates the offences that are considered the most serious in terms of negative consequences such as risk of injury or social disapproval. Close-following is not necessarily a problem in heavy, slow-moving traffic. Overtaking in inappropriate places may not be perceived as dangerous where speeds are low enough that collisions may be avoided. Speeding and offences relating to excessive or inappropriate speed remain the common denominator, and this may explain why improvements in the appropriateness of attitudes are only seen in these terms. The identification of speeding offences as the 'lowest common denominator' would indicate that changes in attitudes relating to speeding should be a priority for road safety.

11.5 Observed outcomes

The intention of NDIS is to reduce the incidence of RTA involvement and the commission of violations on the public road network. These are acts of behaviour, and so the measure of effectiveness by which any intervention is measured should also be behavioural, and the method of collecting such data should be objective. This objectivity adds an additional complication, as self-report measures are seen as subjective and open to the social desirability issues outlined in the preceding section. However, there are considerable problems with this ideal methodology, as it is very difficult to establish a totally objective measure of the 'appropriateness' of an individual's driving style.

Convictions and penalty points

The number of convictions or penalty points awarded to a driver may be assumed to be an objective measure of behaviour, but additional factors must be taken into account. In an Australian study, Kirkham and Landauer (1985) found that young male drivers tend to be charged with traffic offences more frequently than young women, independently of the offending behaviour of the driver. In other words, the interaction between offender and attending officer partly determines the outcome in terms of subsequent convictions. Furthermore, some research (e.g.: Chen, Cooper & Pinili, 1995; Hauer, Bhagwant, Persaud, Smiley, & Duncan, 1991; Smiley, Persaud, Hauer, & Duncan, 1989) has shown that it is difficult to identify accident-prone drivers on the basis of their record of accidents and convictions for offences against the traffic law. Thus, although useful due to its relative objectivity and ease of accessibility, the use of penalty point accumulation is not a particularly accurate measure of actual day-to-day behaviour.

RTA involvement

As has already been discussed, collisions are rare events. The mean frequency for RTA involvement has been estimated at one in every nine years of exposure (Stradling, 1998; personal correspondence). Any study that measures RTA involvement as a basis for evaluation of an intervention would need to have a follow-up period of at least that length in order to reasonably compare criterion groups. The effects of an eleven-hour long intervention in relation to the effects of a lifetime's driving are likely to be negligible over that period, unless the modifications suggested in Section 10.10 are implemented. However, it may be possible to use statistical techniques to measure the relative concentration of incidents in the period following the course/court appearance, and compare that concentration with the latter end of the evaluation period. Comparison of a client group with a control group would also facilitate the evaluation.

Objectivity of evaluation measures

What is needed therefore, is a measure that is equivalent to a collision, but more frequent. Recent research from Manchester University's Driving Behaviour Research Group (Stradling, Parker & Lajunen, 1998) has demonstrated a causal link between the coincidence of simultaneous commission of an error and a violation, and RTA involvement. This would indicate that more frequent errors and violations lead to an increased risk of a collision. Conversely, reduced incidence of errors and violations should lead to a reduced risk of RTA involvement.

The current study has such a measure, and shows that the frequency of commission for both of these acts is reduced in the three months after course attendance. However, this measure is a self-report and therefore subjective, the requirement being for an *objective* measure of frequency. One possibility is to record assessments of individuals' driving style from a third party, such as a close relative/significant other. The likelihood that the rating is objective would be substantially increased.

A further possible measure is to record the fuel consumption and mileage over a set period. The relationship between 'thrill-seeking' behaviour and the commission of violations is well established (eg: Meadows, 1994), and the excessive use of the accelerator pedal is likely to be another behavioural measure indicating the type of person who is likely to commit traffic violations. Comparison of the drivers' fuel consumption before and after the course (accounting for any changes in vehicle etc.) could provide a useful measure of changes in the client's driving style.

11.6 Conclusions

An alternative to court prosecution

Earlier arguments suggest that a court appearance offers little to confront the behavioural motivations that result in traffic violations and RTAs. Road traffic accidents are caused by a number of diverse factors, and the offender is left believing

that the primary cause was not his or her inappropriate driving behaviour, but a conspiracy of the fates that resulted in the coincidental occurrence of the various different factors, causing him or her to have an 'accident'. Intuitively, on this basis, NDIS must be a better method of disposing of such offenders, as it forces drivers involved in a RTA to question their assumptions regarding the causes of their collision. Given that RTAs are so infrequent and traffic violations common, the implication is that the driving environment is highly forgiving. Those drivers who have had the negative consequences of violating traffic law made so clear to them, are in the perfect position to have the 'road safety message' forced home, as long as they are treated in such a way that their assumptions about the RTA are questioned and their attitudes towards their own behaviour called into question.

Referral policy

The type of dangerous, deficient or impaired driver at whom NDIS is aimed should be firmly established. Both skill-related and attitude-related deficiencies can be addressed using an intervention of this type, but the NDIS system is being asked to deal with a 'multitude of sins' in a very short period of time. Ideally, the police's referral policy should be co-ordinated with the aims and objectives of such courses, so that the course referral option does not become a 'catch-all' method of disposal. Courses could then become more closely tailored to deal with the specific deficiencies displayed by offenders. For example, drivers who attending officers consider to be impaired due to age could be referred to a course specifically designed to confront those factors relevant to the ageing process and its effects on reaction times, circadian rhythms etc. Young offenders suspected of racing on the public roads could attend a course aimed at justification of rules, attitude modification and including such probationary measures described earlier. In this way, such courses would be seen as 'fitting the crime' and would be significantly more likely to gain public acceptance and support.

Effects of the course

The fact that some of the measures used in this study are changing as a result of the course, beyond the effects of mere chance levels, indicates that an 'effect' is produced in clients attending NDIS courses. Currently the course offers a number of solutions to perceived problems in the driving of the individuals referred to it, but there is no guarantee that these are the solutions to solve the actual problem. Research should be carried out to identify which aspects of course content and delivery are most effective for particular types of client, and new components could be introduced, based on this and other research.

Differences in the requirements of different driving environments and situations mean that road safety education needs to be tailored to the needs of the individual. Campaigns in the mass media do not generally allow for this variation in requirements. NDIS appears to offer the opportunity for retraining without the prohibitive costs involved in other interventions. Courses are run for fifteen clients at a time, and the instructors are able to design course modules to suit particular client types. The perceptions of the general public appear to be generally favourable, and it

would seem a cost effective solution to relaying road safety messages to the most vulnerable road-users.

Longer-term follow-up

Those NDIS clients contributing to this evaluation study provided their Driver Numbers in order to identify the separate questionnaire schedules. It is possible to use information indexed with this unique number to assess the longer-term effects of course attendance. Cautious analysis of computerised data held at DVLA or on police records systems could indicate differences between NDIS clients and other groups of road-users. Self-report frequencies over the previous two-year period for RTAs, near-misses and offences (convicted) have also been recorded and could be followed-up after a suitable interval.

11.7 Comment

Psychologically, the option of sending offending drivers on rectification courses to correct skill deficits or inappropriate attitudes towards the laws that inhibit inappropriate behaviour on the public highway, makes more sense than prosecuting them in the courts. It might be argued that court prosecution does little to tackle the actual problems that result in inappropriate behaviour and road traffic accidents. However, the referral policy, course content and presentation, and the way in which the general public perceive such schemes need to be carefully considered. It may be seen from the results of this study that course attendance has an effect on clients. That effect appears to be a beneficial one, as the results imply. However, exactly what constitutes that effect and how this relates to course content is something that only further research will be able to identify.

11.8 Recommendations

- An individual's driving style is largely habitual. Methods to enforce changes in that habitual style may be improved, thus increasing the effectiveness of interventions such as the National Driver Improvement Scheme.
- Pre-course and post-course differences in attitudes towards particular offences (eg: speeding, close-following) between groups of clients (eg: professional and non-professional clients, clients from urban areas and those from rural areas) suggest that course content could be tailored to suit the relevant client base.
- Some form of probationary period after course attendance is recommended to maintain appropriate behaviours for longer, in order that they become routinised. Further changes in course design are recommended, based on current literature.
- Any future study should involve properly-constructed control groups. This would necessitate a greater degree of control over police referral policies in

specific geographical areas, in order that similar client groups may be compared for the differing effects of court prosecution and NDIS course attendance.

11.9 References

- Blair, J. (1997) Moral reasoning and the child with psychopathic tendencies *Personality & Individual Differences*, 22, 5; 731-739
- Chen, W., Cooper, P.J., & Pinili, M. (1995) Driver Accident Risk in Relation to the Penalty Point System in British Columbia. *Accident Analysis and Prevention*. 26, 1; 9-18.
- Hauer, E., Bhagwant N., Persaud, A., Smiley, & Duncan, D. (1991) Estimating the Accident Potential of an Ontario Driver. *Accident Analysis and Prevention*, 23, 2-3; 133-152.
- Hemphill, J.F., Hare, R.D. & Wong, S. (1998) Psychopathy and recidivism: A review *Legal & Criminal Psychology*, 3, 139-170.
- Kirkham, R.W. & Landauer, A.A. (1985) Sex differences in the distribution of traffic law enforcement. *Accident Analysis & Prevention*, 17 3, 211-215.
- Meadows, M.L. (1994) The psychological correlates of different types of road traffic crashes *Unpublished Phd thesis*, Manchester University.
- Moskowitz, J.M. (1989) The primary prevention of alcohol problems: A critical review of the research literature. *Journal of Studies on Alcohol*, 50, 1; 54-88.
- Stradling, S., Parker, D. & Lajunen, T. (1998) *Violations, accidents and aggression on the roads* 24th International Congress of Applied Psychology, San Francisco US.
- Smetana, J.G. (1985) Children's impressions of moral and conventional transgressors *Developmental Psychology*. 4, 715-724
- Smiley, A., Persaud, B., Hauer, E., & Duncan, D. (1989) Accidents, Convictions, and Demerit Points: An Ontario Driver Records Study. *Transportation Research Record*. 1238, 53-63.

APPENDICES:

Appendix I: *Site visits*

Appendix II: *Control Groups*

Appendix III: *Questionnaire schedules*

Appendix IV: *Covering letter*

Appendix V: *Additional statistical tables*

Appendix VI: *Directory of participating Service Providers*

APPENDIX I: SITE VISITS

Visits were made to each of the five original Service Providers' training courses, to ensure that they provide comparable courses. All details were correct at the time of the visit. The following is an abbreviated version of the reports from each.

<i>Host:</i>	Devon County Council
<i>Venue:</i>	Devon Driving Centre, Westpoint, Exeter. Large, purpose-built lecture-room. Tea/coffee on site. Slide projector, OHP, Nobo boards, video and video projector.
<i>Date of visit:</i>	Numerous occasions from April 1996
<i>Chief Instructor:</i>	Malcolm Fortnum (civilian driving instructor)
<i>Unique factors:</i>	Devon Driving Centre, Westpoint, is purpose-built for provision of driving-related training; (eg: minibus training, skid-car courses, Pass Plus, off-road training circuit).

The course uses the Devon Model, with two instructors for the classroom sessions. There are two 'rest' breaks between 9:00am and 1:00pm. Two instructors keep the sessions lively and ensure a high level of client engagement. The Centre undoubtedly helps to improve the clients' perception of the validity and authority of the course.

<i>Host:</i>	Hereford & Worcester County Council
<i>Venue:</i>	County Hall, Worcester. Large, well-organised meeting room in the County Hall. Canteen services on site. Slide projector, OHP, Nobo boards, TV & video.
<i>Date of visit:</i>	31st January 1997
<i>Chief Instructor:</i>	Sid Stevenson (civilian driving instructor)
<i>Unique factors:</i>	"Motor Mania", a US 1950s cartoon, showing caricatures of typical driving styles (aggressive, sedate, hesitant, etc) and raises a number of important issues in a comical way.

The course uses the Devon Model, but only one instructor for the classroom sessions. There isn't a break from 9:00am until 11:00am, perhaps implying that the instructor is trying to pack too much into the first part of the course and potentially losing clients' concentration along the way.

* Course structure has changed since the study ended, with some elements replaced with more conventional substitutes.

Host: **Hertfordshire County Council**

Venue: County Training Centre, Hatfield.
A purpose-built training centre with canteen services on site. Slide projector, OHP, Nobo boards, video projector.

Date of visit: 17th January 1997

Chief Instructor: Eric Simpson (ex-Police driving instructor)

Unique factors: Uses actual model cars for the 'Anatomy of an Accident' exercise. Makes it easier to visualise and thus more personally relevant (?).

The course uses the Devon Model, but only one instructor for the classroom sessions.

Host: **Shropshire County Council**

Venue: Road Safety Section, Shrewsbury.
A building within the County Pound with canteen services on site. Slide projector, OHP, Nobo boards, video, TV.

Date of visit: 7th February 1997

Chief Instructor: Shirley Rutter & David Morgan (civilian driving instructors)

Unique factors: Approach is more light-hearted than other sites - the instructors give the impression of enjoying what they are doing (this may simply reflect the interaction between these two instructors). Good use of illustrative OHP graphics and cartoons.

The course uses the Devon Model, and utilises two instructors for the classroom sessions.

Host: **Staffordshire County Council**

Venue: Staffordshire Fire Service Training Centre.
Large, well-organised meeting room at the Fire Service Training Centre. Canteen services on site. Slide projector, OHP, Nobo boards, TV & video.

Date of visit: 7th October 1997

Chief Instructor: Neil Davies (Road Safety Officer and ADI)

Unique factors: The course uses a number of techniques from other courses; eg: "Motor Mania" cartoon film and model cars for 'Anatomy of an Accident' section. The venue is excellent, conveying authority and prestige.

The course uses the Devon Model, with two instructors for the classroom sessions. As with Devon, two rest-breaks and twin instructors ensure that the clients remain engaged throughout.

APPENDIX II: NDIS CONTROL GROUPS

REQUIREMENTS

The ideal comparisons comprise:

- [i] offenders sent on NDIS vs offenders prosecuted through courts

This comparison will take account of the central question of the project; 'Does NDIS actually work better than court prosecutions in terms of attitude modification and the prevention of recidivism?'

- [ii] offenders sent on NDIS vs offenders receiving police caution only

Taking into consideration the fact that all those authorities currently running NDIS courses only consider clients who have had an accident (or have been involved in an incident) as a result of a traffic violation, this comparison accounts for the effects of first-hand personal experience of the negative consequences of poor driving, while isolating the effects of the NDIS course itself.

- [iii] offenders sent on NDIS vs background population

Comparing these groups before and after (immediately and some months after) completion of the NDIS course will enable accurate charting of the effects of NDIS compared to both the control groups ([i] and [ii] above) and within the experimental group.

RELEVANT ISSUES

The need to construct suitable control groups has raised a number of issues.

Data Protection Act

Due to the necessary restrictions imposed by the Data Protection Act, information regarding offenders prosecuted through the courts or receiving cautions for road traffic offences is available only to police authorities and their agents. In order to contact

such individuals, a letter must be sent out by the relevant Police authority in order to request these individuals' assistance in the study. Having received an 'informed consent' form back from the individual, questionnaires may then be sent by the University. However, in order for this mechanism to work, additional police time and manpower would be required, a resource that may not be currently available.

Resources

Another way of contacting those individuals prosecuted through the courts would be to attend magistrates' hearings and request assistance of offenders directly, or to trawl through the court's records in order to acquire offenders' names and addresses. Feasibility of such a process would depend upon available resources, and due to the scarcity of manpower, it is unlikely that this will be possible.

Self-selection of control groups

A further problem with any of the above suggestions is that in agreeing to participate in the study, the control group becomes highly self-selected. One might expect that those individuals volunteering for involvement in the study may be rather more conformist, other-orientated (as opposed to self-orientated) and socially-integrated than those who refuse. Past research has shown that individuals exhibiting the opposite extreme of these personality traits (ie: non-conformist, self-orientated and socially-alienated) are more likely to commit traffic offences. It is likely therefore, that the response rate would be extremely low. Additionally, it is likely that a non-conformist, self-orientated, socially-alienated individual would consider that they had been unfairly prosecuted and would have these traits exacerbated.

'Background' population

Values for 'background' population scores on the DAQ and DBQ have been derived from the validation studies carried out to assess the reliability of these scales, and it seems likely that a comparison between these scores and those obtained from the experimental groups remains the most realistic option.

NEW POSSIBILITIES

The above points have determined the nature of a comparison control group to date. However, with the offer of assistance from Hampshire Constabulary, a new set of possibilities are introduced.

Controlled comparison

The best scenario depends on finding, within the Hampshire Constabulary's jurisdiction, two or more comparable districts, where Driver Improvement Courses are

offered as an alternative method of disposal for particular traffic offences (usually Section 3, Road Traffic Act, 1988) in one area, but not in the other. The possible comparisons include all three of those mentioned on the previous page.

However, this new situation raises additional issues that must be resolved before any further action is taken.

- [i] Suitable districts must be chosen for comparison, based on environmental and demographic factors, such as; population density, type of housing and road systems present within area. Agencies able to supply this information should be contacted and the information requested.
- [ii] The size of such comparison groups must be determined, based on estimates of through-put in the chosen Criminal Justice/Admin. Support Units and the available resources.
- [iii] Local co-ordination of the comparison groups would be advantageous, and also the agencies involved may be more co-operative if [initial] contact is with the Hampshire Constabulary. Therefore, the degree of assistance available from Hampshire Constabulary must be determined.

OPERATIONAL PROBLEMS

In Spring 1997, a formal request was made by Matthew Joint (DETR) to Chief Constable, Hampshire Constabulary, to help set up two groups of traffic offenders in the Hampshire area. This area was well placed for such a piece of research, as at the time, certain regions within the county were referring offenders to NDIS courses, whereas some neighbouring regions were not, preferring instead the traditional option of a magistrates' court appearance. The request was met with enthusiasm by Chief Inspector Graham App (Traffic Division) and a meeting suggested in order that the nature of the experimental (NDIS) and control (magistrates' court) groups be established.

Failure to establish controls

A meeting took place at Hampshire Constabulary's HQ at Winchester on 27th October 1997, between Matthew Joint (DETR), Cris Burgess (Exeter University), Chief Inspector Graham App (Hampshire Constabulary, Traffic Division) and Claire Simpkin (Hampshire Constabulary, Research Officer). During the meeting, it became apparent that the formal request from the DETR had accelerated projected use of the NDIS option in Hampshire. As from 1st February 1998, all offenders qualified for NDIS referral would be disposed of in this way, with no eligible drivers referred to the court system. This decision had been made by Chief Constable Hampshire Constabulary a week earlier.

APPENDIX III: QUESTIONNAIRE SCHEDULES

Schedule 1: Pre-course measure

Schedule 2: Immediate pre-course measure

Schedule 3: Post-course measure

Schedule 4: Three-month follow-up

Schedule 1A: Pre-course measure (London extension)

Schedule 2A: Immediate pre-course measure (London extension)

Schedule 3A: Post-course measure (London extension)

Schedule 4A: Three-month follow-up (London extension)

APPENDIX IV: COVERING LETTER

A copy of the letter sent to clients with the first questionnaire schedule, explaining the background to the study, and requesting their co-operation and assistance.

APPENDIX V: ADDITIONAL STATISTICAL TABLES

<i>Attitude measure</i>	<i>Measurement point</i>	<i>Change</i>	<i>N</i>	<i>Mean score</i>	<i>t</i>	<i>Df</i>	<i>p</i>
General attitudes	Pre-course	Positive	749	69.64	16.233	1437	<0.001
		negative	690	76.59			
	Post-course	Positive	749	76.00	-10.920	1437	<0.001
		negative	690	71.32			
Drink-drive	Pre-course	Positive	749	18.35	11.252	1437	<0.001
		negative	690	20.27			
	Post-course	Positive	749	19.72	-7.320	1437	<0.001
		negative	690	18.45			
Close-following	Pre-course	Positive	749	18.21	10.819	1437	<0.001
		negative	690	19.89			
	Post-course	Positive	749	19.37	-8.909	1437	<0.001
		negative	690	19.84			
Dangerous overtaking	Pre-course	Positive	749	17.78	11.215	1437	<0.001
		negative	690	19.43			
	Post-course	Positive	749	19.10	-8.198	1437	<0.001
		negative	690	17.79			
Speeding	Pre-course	Positive	749	15.29	10.917	1437	<0.001
		negative	690	17.00			
	Post-course	Positive	749	18.53	-6.203	1437	<0.001
		negative	690	17.50			

Table A: *Differences in attitude measures between clients recording a positive improvement in general attitudes (positive effect) compared with a negative inappropriate change (negative effect).*

<i>Inappropriate act</i>	<i>Measurement point</i>	<i>Change</i>	<i>N</i>	<i>Mean score</i>	<i>t</i>	<i>Df</i>	<i>p</i>
Lapses	Pre-course	Positive	748	7.30	-0.534	1436	Not sig.
		negative	690	7.20			
	Post-course	Positive	311	7.38	-1.431	585	Not sig.
		negative	276	6.92			
Errors	Pre-course	Positive	748	4.63	-1.943	1436	0.052
		negative	690	4.28			
	Post-course	Positive	311	4.32	-1.408	585	Not sig.
		negative	276	3.94			
violations	Pre-course	Positive	748	4.74	-10.920	1437	<0.001
		negative	690	3.81			
	Post-course	Positive	311	4.14	-3.258	585	0.001
		negative	276	3.21			

Table B: *Differences in inappropriate behaviour measures between clients recording a positive improvement in general attitudes (positive effect) compared with a negative inappropriate change (negative effect).*

<i>Offence</i>	<i>Measurement point</i>	<i>Mean score</i>	<i>t-value</i>	<i>Significance</i>
Drink-drive	<i>Pre-course</i>	19.27	1.722	n.s.
	<i>Post-course</i>	19.11		
Close-following	<i>Pre-course</i>	19.02	9.892	<0.001
	<i>Post-course</i>	18.14		
Dangerous overtaking	<i>Pre-course</i>	18.57	1.039	n.s.
	<i>Post-course</i>	18.47		
Speeding	<i>Pre-course</i>	16.11	-21.578	<0.001
	<i>Post-course</i>	18.04		

Table C: *Attitudes towards offences - pre-course vs post-course***APPENDIX VI: DIRECTORY OF PARTICIPATING SERVICE PROVIDERS:**

Devon	Peter Gimber Daniel McCarthy Marion Deacock Martin Gould	Devon Driving Centre Westpoint Clyst St Mary Exeter EX2 4QW (01392) 444773
Worcestershire <i>(formerly Hereford & Worcester)</i>	Roger Woodward Diane Hall	Worcestershire County Council Road Safety Unit PO Box 222 Spetchley Road Worcester WR5 2NP (01905) 766825
Hertfordshire	Ian Powell Guy Bradley	Hertfordshire County Council Environment Department Road Safety Unit 96 Victoria Street St Albans AL1 3TG (01727) 816967
Shropshire	Colin Pettener Eileen Taylor	Shropshire County Council Road Safety Section 107 Longden Road Shrewsbury SY3 9AX (01743) 232475
Staffordshire	Stuart Hallett Neil Davies	Staffordshire County Council Road Safety Unit Development Services Dept. Riverway, Stafford ST16 3TJ (01785) 276611
Herefordshire	Richard Glasspoole	Herefordshire Council Council Offices, Bath Street Hereford HR1 2HQ (01432) 363374
Barnet	Theo Panayi	London Borough of Barnet Accident Prevention Centre Daws Lane, Mill Hill London NW7 4SL (0181) 906 8028
Bexley	Simon Ettinghausen	Bexley Council Sidcup Place Sidcup, Kent DA14 6BT (0181) 303 7777 ext.3620

Central London

Ann Nelmes

British School of Motoring (BSM)
81-87 Hartfield Road
London SW19 3TJ
(0181) 545 1407

APPENDIX VII: THE DEVON MODEL

The course timetable for the "Devon Model" course, which has been accepted as the National Model for such courses by the National DIS Service Providers Steering Group. It should be noted that the Devon Model incorporates administrative and instructor training systems in addition to the timetable that follows.