

Chapter 1

INTRODUCTION

Peter G. Miller, John Strang and Peter M. Miller

1.1 Introduction

The addictions and alcohol and other drug (AOD) sector covers a vast array of disciplines and methodologies. Many of the techniques used in the understanding of drug use are essentially the same as those used in other fields, while others are special in both their design and their samples. In no other field of enquiry has there been such a multidisciplinary approach to the development of research methods and sampling techniques. For many in the field, this multidisciplinary reality is perplexing, making it challenging to truly understand the relationships and synergies between very different pieces of research on the same topic. And yet, each piece of research adds its own distinctive contribution. For example, attempts to reduce HIV in any given community require in-depth long-term ethnographic research to understand how social networks interact to increase or reduce blood-borne virus transmission and survey research to determine the prevalence and incidence of HIV in the community, just as it requires animal studies and pharmacological research to understand basic mechanisms and responses, and clinical trials to develop the appropriate medicines and schedules for treatment. Without one of these pieces of research, resources can be wasted, and lives can be lost, as a result of targeting the wrong people with the wrong intervention at the wrong time. But when research perspectives from all fields are considered, the best possible outcomes are achieved.

This book draws on the insights of an international assortment of leaders in the AOD field to document the major issues and techniques involved in each subdiscipline and to signpost the major works in the field. The book will also serve to help readers understand the fundamental principles of many of the disciplines in the AOD field and will lead to greater cooperation between disciplines and improved methodological flexibility and sophistication.

1.2 Where to start?

The research enterprise has many facets and it is often overwhelming when starting out to know which issue to address. The first question for any investigative team is often, 'what are we trying to find out?' This query often leads to a great many other issues around elements of the larger question, for example, how the research could and should be conducted, what theories or values are informing the question, what ethical issues should be considered.

In the initial stages, researchers should:

1. Take it slow – be over-inclusive to begin with – take your time in reaching a final set of questions – do not overlook alternative possibilities and strategies.
2. Subdivide questions – split questions into component parts – disentangle different questions from each other.

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3. Order questions in terms of importance, size, practical considerations and interest.
4. Investigate theory/review literature/conduct observations.
5. Develop hypotheses.

This process of careful planning and brainstorming is often best accomplished in groups since contributions of individual members of the research team can advance the thinking of the group as a whole. Time spent at this stage is a good investment since it will help to avoid problems that could arise once the research is underway. It is important to remember that, with every research investigation, ‘the devil is in the detail’ and the devil must be given his due as early as possible to prevent later regrets. Without careful planning, an important variable may be overlooked, resulting in a serious methodological flaw that might later render the research results unconvincing.

1.3 Does theory matter?

For most types of research an important place to start is with theory. Sadly, this is often not the case, or more commonly, individuals will focus only on theories from their own discipline. There is much to learn from looking at other disciplines and methodological approaches when considering how best to answer a question. Theories can provide a framework for different types of research and the factors on which one should focus. Ideally, theory-driven research follows the process of deduction (Box 1.1) (see Figure 1.1).

1.3.1 How to ask the right question

Asking the right question is one of the most important elements of the research process. This book contains a raft of examples of different research methods and glimpses into the disciplines from which they come. For each of these methods, the process of asking the right question is the end of a different process. However, for many of the disciplines (definitely not all), using evidence and theory is the best way to develop a strong hypothesis (see Figure 1.1). This is most usually through the process of developing a hypothesis. ‘A hypothesis is a predicated answer to a research question’ (Bryman, 2004, p. 38).

Box 1.1 What are deduction and induction?

Deduction: In the process of deduction, you begin with statements, called ‘premises’, that are assumed to be true. You then determine what else would have to be true if the premises are true. The premises themselves, however, remain unproven and unprovable; they must be accepted at face value, or by faith, or for the purpose of exploration.

Induction: In the process of induction, you begin with data, and then determine what general conclusion(s) can logically be derived from those data. In other words, you determine what theory or theories could explain the data. Induction does not prove that the theory is correct. Ultimately, interactive logic demonstrates that the theory does indeed offer a logical explanation of the data.

Deduction and induction by themselves are inadequate for a scientific approach. While deduction gives support to the theory, it never makes contact with the real world; i.e. there is no place for observation or experimentation and no way to test the validity of the premises. Similarly, while induction is driven by observation, it never approaches actual proof of a theory. Ultimately, the development of the scientific method involves a gradual synthesis of these two logical approaches.

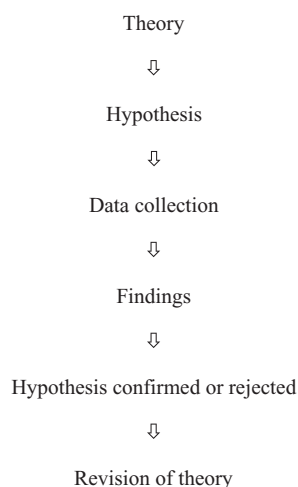


Figure 1.1 The process of deduction (Bryman, 2004).

However, there are many other considerations when contemplating a question, not least of which is ‘can it be answered?’ Unfortunately, most questions we have, particularly in the addictions field, are unanswerable through any one study, or possibly ever. Asking the right question can also be guided by knowing whether someone has asked the same or similar questions before, what tools are available and what methods have failed before. This is most commonly achieved through conducting a literature review.

1.4 The literature review

The literature review is a vital part of any good research project, and if not conducted properly, the project can end up needlessly replicating previous research or following directions already found unhelpful. There are numerous texts and websites which outline the best practice for conducting literature reviews (e.g. Ridley, 2008). However, there are a number of major elements worth addressing to ensure a good literature review.

1.4.1 Where to search?

A well-conducted literature review will cover the most likely and reputable sources of information. Simply conducting a quick web search on a single search engine is not acceptable. The highest level of evidence in any field comes from articles in peer-reviewed journals. Within the addictions field, there are over 80 specialist journals. No one database will allow you to search the content of all of these journals. Further, many important articles are published in more general medical, psychological, anthropological and other journals. However, for general topics within the addiction-related fields, the major search engines are PubMed (general health and medical content), CSA Illumina Databases (Sociological Abstracts), PsycInfo, PAIS, Worldwide Political Abstracts, etc. Search multiple databases at once, including full text as well as bibliographic databases, Web of Science (multidisciplinary content from highly cited/ranked journals), Scopus (the largest academic database in the world), Expanded Academic (multidisciplinary content) and JSTOR (full-text searches of digitised back issues of several hundred well-known journals, dating back to 1665 in the case of the *Philosophical*

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Transactions). While these databases are easily found on the internet, if you have institutional links to a university, the most valuable resource when trying to determine where you should search may be your friendly librarian. Many libraries have specialist librarians for different subject areas, and a brief discussion with such an expert can save you a great deal of time and ensure you get to the sources you need.

There are a number of characteristics which make a good literature review. These include a clear organisation of concepts and topics, a clear idea of the chronology of ideas, a good summary of the major themes and trends in the phenomenon being studied and a consideration of the different methodologies used to investigate the topic. A good literature review makes interpretations of the available sources backed up with evidence, but does not go overboard, selecting only the most important points in each source to highlight in the review. The use of quotes should always be done sparingly, and it is better to use your own words to summarise and synthesise the literature, rather than supplying a series of quotes. Caution should always be taken to ensure that you report the author's information or opinions accurately and in your own words. A correctly conducted literature review will allow you to move to the next stage of your research – planning your methodology.

1.5 Which method suits my question – is a screwdriver better than a saw?

Different questions require different methods to answer them. Further, the way in which a question is asked can have implications for what needs to be done to answer it. It is important to remember that methods are not neutral since they are linked strongly to the way in which individuals view the world and how it should be examined (Bryman, 2004). It makes sense that we spend most of our time on what we think is most important. On the other hand, most scientists tend to strive for objectivity, and while preference is often obvious, it will seldom negate the worth of the piece of work. A sociologist looking into the causes of addiction would frame the question very differently to a geneticist. While the sociologist might look at issues such as class, employment status and gender, the geneticist may look into alleles and genomes. Increasingly, multi-methods are being used to investigate the same question from different angles. For example, the IMAGEN study combines cognitive, behavioural, clinical and neuroimaging data from adolescents and their families and teachers in a longitudinal design over 5 years (<http://www.imagen-europe.com/en/imagen-europe.php>). Research methods will include self-report questionnaires, behavioural assessment, interviews, neuroimaging of the brain as well as blood sampling for genetic analyses.

A good way to achieve the right fit between questions and methods is to ensure that the content of the research, or the research questions, comes before the methodological considerations. Put simply, asking 'what would we like to know?' is usually better than looking for a question that can be answered by a certain type of method. Unfortunately, this does not always happen and many researchers stand accused of 'methodolatry' – a combination of method and idolatry, which selects and defends specific methods, regardless of the question being asked (Punch, 2005).

This book is designed to give the reader a wide overview of the methods currently being used in addictions and other AOD-related research globally. By having these different perspectives available in a single volume, we hope that the readers can avoid sticking only to the methods they know and will be more confident about thinking beyond single disciplinary studies to develop complex methods to answer the complex questions posed by addiction. Depending on the method you require to answer your question, your reading of this book may vary.

1.6 Focus and structure of the book

The book is written to cater for a wide audience, including students, academics and clinical practitioners, but it is envisaged that the reader will already have some basic knowledge of research methods. The book is primarily divided into six major sections: (1) Research Fundamentals, (2) Basic Toolbox, (3) Real World Research Methods, (4) Biological Methods, (5) Specialist Methods and (6) Beyond Research. Research Fundamentals contains information on the basic concepts needed in most research, such as Gerhard Bühringer and Monika Sassen's discussion of the concepts of validity and reliability, and how they apply to addiction-related research. The section also covers sampling issues in Chapter 3 by Lisa Kakinami and Kenneth Connor – a vital question for any good research project as well as a chapter by Robert West looking at the issues associated with conducting experimental research in the addictions-related field. Tim Rhodes and Ross Coomber provide an insightful overview of qualitative research and its theoretical underpinnings, as well as giving guidance on how qualitative research has brought a different perspective to the many complex dynamics surrounding addictive behaviour and substance use. Finally, in a chapter by Peter G. Miller, Adrian Carter and Wayne Hall, the section looks at some of the ethical issues which commonly face addictions researchers and can be unique to our field.

The 'Basic Toolbox' section includes Chapter 7 on surveys and questionnaire design by Lorraine T. Midanik and Krista Drescher-Burke, which provides the reader with the basic issues associated with designing surveys and questionnaires. This is followed by the equally important instructions and suggestions on 'interviewing techniques' by Barbara S. McCrady, Benjamin Ladd, Julie Steele Seel and Leah Vermont. In Chapter 9, Shane Darke provides advice on the main tests and scales for addictions research and the contexts in which they might be appropriate. Chapter 10 on biomarkers of alcohol and other drug use by Scott H. Stewart, Anton Goldmann, Tim Neumann and Claudia Spies adds the dimension of biological testing to the research encounter. Finishing off the basic toolbox is Chapter 11 on quantitative analysis by Jim Lemon, Louisa Degenhardt, Tim Slade and Katherine Mills.

Building on this section, the following 'Real World Research Methods' section focuses on the issues faced in applied settings in Chapter 12, 'Applied Research Methods' by David Best and Ed Day, looking at how to conduct applied research in treatment system research, and in Chapter 13, 'Conducting Clinical Research' by Jalie A. Tucker and Cathy A. Simpson.

The 'Biological Methods' section focuses on the more specialised and predominantly lab-based techniques, which focus on the biological aspects of addiction and substance use. Jason White and Nick Lintzeris provide an overview of the most common type of research in the field, psychopharmacology. In Chapter 15, David Nutt and Alastair Reid give us an overview of one of the more recent methods to be used in the study of addiction using imaging technology to observe reactions and structures of the brain. Following this, David Ball and Irene Guerrini show us a small part of the vast work being commenced on relating addiction to genetics, and finally, Leigh V. Panlilio, Charles W. Schindler and Steven R. Goldberg give us an important insight into the use of animals and how they can and have been used to help us understand addiction and substance use in humans.

The 'Specialist Methods' section covers a number of disciplines, which play a very significant role in the study of addiction and require more detailed explanation for the readers to understand their unique contribution and challenges. In Chapter 18, 'Understanding contexts: Methods and analysis in ethnographic research on drugs', Jeremy Northcote and David Moore give the reader an insight into the complex and often all-consuming world of the ethnographer and highlight the unique benefits of this method and the challenges faced by the ethnographer. Mark Stoové and Paul

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Dietze then provide us with an overview of one of the most used and policy-relevant disciplines in the study of addiction in Chapter 19, 'Epidemiology'. Chapter 20 on meta-analysis and/or Cochrane reviews by John W. Finney and Anne Moyer gives us an insight into this increasingly important way of synthesising evidence to reach stronger conclusions – a role vital in a discipline which often has contrary findings in different settings and substances. Chapters 21 and 22 describe the often related methods of drug trend monitoring and drug policy research. Paul Griffiths and Jane Mounteney give a comprehensive overview of the ways in which data on drug trends are collected around the world as well as the limitations of these data. Jonathan P. Caulkins and Rosalie Liccardo Pacula finish off the section with a description of the complex world of drug policy research and its modelling techniques. We finish the book with a brief note on publishing and other issues worth considering at the end of the research process.

All chapters contain descriptions of actual, definitive studies that have helped shape the field, as well as a set of recommended readings, and a set of exercises which will help readers develop their skills.

This book is specifically international in its focus. We have sought to include authors from a number of different countries to give us a perspective, which is as wide as possible. This means there are a number of terminological and definitional issues which might arise when reading the text.

1.7 Terminology

Words are, of course, the most powerful drug used by mankind.

Rudyard Kipling

When writing and editing an international book, the importance of words and terminology chosen becomes apparent. Different countries use different terms, and these terms can have a meaning which is far beyond those defined in dictionaries and lexicons, despite the best intentions of many. Certainly, there is a wide gap between the common usage of many words by the general public and their defined meaning used in academic text. However, words also represent theories and many of these theories are hotly debated. They also reflect social and cultural norms and viewpoints around acceptable behaviour, many of which can be traced back to pagan rituals and religious rites many centuries ago. During the process of editing this book a number of different meanings and interpretations became apparent and we, the editors, were required to make a decision about whether terminology should be standardised or whether to simply acknowledge difference. Ultimately, we have chosen the latter. However, a brief discussion of some of the different terms and common usages is warranted.

We recommend that readers refer to the World Health Organization (WHO) lexicon of alcohol and drug terms (World Health Organization, 1994). In 1994 the WHO developed a lexicon which aims to provide a set of definitions of terms concerning alcohol, tobacco and other drugs, which is useful to clinicians, administrators, researchers and other interested parties in this field. The definitions of two contested terms are instructive (abuse and addiction – see Boxes 1.2 and 1.3).

Ultimately, you will see the words 'substance use' and 'abuse' used interchangeably, despite different cultural interpretation of the appropriateness for a judgement of 'abuse'. Similarly, addiction and dependence are used according to the preference of the authors. Certainly, 'addiction' carries very different constructs and agendas in the UK, than it does in the United States, both of which differ to that in Australia. Another set of words with similar issues surrounds the appropriate terminology for people who access treatment services. Whether they are called patients, service users or clients differs in different countries, and while there is evidence to suggest that many actually prefer being

Box 1.2 Abuse

Abuse (drug, alcohol, chemical, substance or psychoactive substance): A group of terms are in wide use but of varying meaning. In DSM-III-R,^a 'psychoactive substance abuse' is defined as 'a maladaptive pattern of use indicated by . . . continued use despite knowledge of having a persistent or recurrent social, occupational, psychological or physical problem that is caused or exacerbated by the use [or by] recurrent use in situations in which it is physically hazardous'. It is a residual category, with dependence taking precedence when applicable. The term 'abuse' is sometimes used disapprovingly to refer to any use at all, particularly of illicit drugs. Because of its ambiguity, the term is not used in ICD-10 (except in the case of non-dependence-producing substances – see below); harmful use and hazardous use are the equivalent terms in WHO usage, although they usually relate only to effects on health and not to social consequences. 'Abuse' is also discouraged by the Office of Substance Abuse Prevention (OSAP, now CSAP – Center for Substance Abuse Prevention) in the United States, although terms such as 'substance abuse' remain in wide use in North America to refer generally to problems of psychoactive substance use.

In other contexts, abuse has referred to non-medical or unsanctioned patterns of use, irrespective of consequences. Thus, the definition published in 1969 by the WHO Expert Committee on Drug Dependence was 'persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice' (see misuse drug or alcohol)^b.

^a*Diagnostic and Statistical Manual of Mental Disorders* (revised), 3rd edn. Washington, DC: American Psychiatric Association, 1987.

^bWHO Expert Committee on Drug Dependence, Sixteenth report. Geneva: World Health Organization, 1969 (WHO Technical Report Series, No. 407).

Box 1.3 Addiction

Addiction, drug or alcohol: Repeated use of a psychoactive substance or substances, to the extent that the user (referred to as an addict) is periodically or chronically intoxicated, shows a compulsion to take the preferred substance (or substances), has great difficulty in voluntarily ceasing or modifying substance use and exhibits determination to obtain psychoactive substances by almost any means. Typically, tolerance is prominent and a withdrawal syndrome frequently occurs when substance use is interrupted. The life of the addict may be dominated by substance use to the virtual exclusion of all other activities and responsibilities. The term 'addiction' also conveys the sense that such substance use has a detrimental effect on society, as well as on the individual; when applied to the use of alcohol, it is equivalent to alcoholism. Addiction is a term of long-standing and variable usage. It is regarded by many as a discrete disease entity, a debilitating disorder rooted in the pharmacological effects of the drug, which is remorselessly progressive. From the 1920s to the 1960s, attempts were made to differentiate between addiction and 'habituation', a less severe form of psychological adaptation. In the 1960s, the WHO recommended that both terms be abandoned in favour of dependence, which can exist in various degrees of severity. Addiction is not a diagnostic term in ICD-10, but continues to be very widely employed by professionals and the general public alike (see *also* dependence, dependence syndrome).

called ‘patients’ in the UK (Keaney et al., 2004), this would appear different in Australia where most are called ‘clients’, despite not paying directly for their treatment. On the other hand, the book will not use the term ‘marijuana’ in place of its scientific name ‘cannabis’. The racist undertones of the term have been discussed widely in the literature (Manderson, 1997), and although the term is often seen to mean simply the leaf form of cannabis, we choose to only use ‘cannabis’.

1.8 The need for a wider perspective and more careful selection of study design

Basically, the choice of design is influenced by many factors, including the nature of the question, the type of answer sought and the different possible outcomes of interest. Different research questions in differing clinical, political and research contexts will point to the need for different types of study design – and that is how it should be (Mills, 1959). A substantial body of work in the area of addiction research is focussed on treatment outcomes. While this is an essential issue of many types of addictions research, we decided that a separate chapter on treatment outcomes would be redundant since many of the chapters in this book deal with elements of assessing treatment outcomes. Thus, treatment outcome studies fall under the banner of a number of chapters, including Conducting Clinical Research, Applied Research Methods, Scales for Research in the Addictions, and others. However, some of the other methods discussed have been to great benefit in understanding treatment outcome, such as qualitative and ethnographic methods (Koutroulis, 1998), and there are no doubt combinations of genetics and animal studies are on the horizon. We mention this topic here because we wanted to emphasise that studying the outcomes of treatment is a complex and important topic for research and it is vital that design choices need to be made in a careful and considered manner. Certainly, treatment outcome research should reflect measures which accurately assess the improvement (or otherwise) of an individual’s well-being (Miller & Miller, 2009). This outlook on research is also the message we hope you take away from this book – that, in general, taking a wide perspective on the question you are facing will help you to find the method most appropriate for answering the question you are asking, and you should not fear to step beyond disciplinary specialities in the search for more innovative and appropriate methods.

References

- Bryman, A. (2004) *Social Research Methods*. New York: Oxford University Press.
- Keaney, F., Strang, J., Martinez-Raga, J., Spektor, D., Manning, V., Kelleher, M., Wilson Jones, C., Wana-garatne, S. & Sabater, A. (2004) Does anyone care about names? How attendees at substance misuse services like to be addressed by health professionals. *European Addiction Research*, 10(2), 75–79.
- Koutroulis, G. (1998) Withdrawal from injecting heroin use: thematizing the body. *Critical Public Health*, 8(3), 207–225.
- Manderson, D. (1997) Substances as symbols – race rhetoric and the tropes of Australian drug history. *Social and Legal Studies*, 6(3), 383–400.
- Miller, P. G. & Miller, W. R. (2009) What should we be aiming for in the treatment of addiction? *Addiction*, 104(4), 685–686.
- Mills, C. W. (1959) *The Sociological Imagination*. New York: Oxford University Press.
- Punch, K. F. (2005) *Introduction to Social Research: Quantitative and Qualitative Approaches*, 2nd edn. London: Thousand Oaks, CA: Sage Publications.
- Ridley, D. (2008) *The Literature Review: A Step-by-Step Guide for Students*. London: Sage.
- World Health Organization (1994) *Progress towards Health for All: Statistics of Member States*. Geneva: World Health Organization.