

## Chapter 2

# The Intervention Research Framework: Background and Overview

**Abstract** This chapter provides an introduction to the Intervention Research Framework. In this chapter the background and development of the Intervention Research Framework is discussed along with an overview of the four phases of the Intervention Research Framework. The first phase of the Intervention Research Framework, the Notification phase, is discussed in greater detail using the SHAHRP study as an example. This section details the purpose of the Notification phase, sources of information that can contribute to the Notification phase and how researchers can identify a gap in their research field that is worthy of further study. The final section of this chapter discusses the value of developing relationships between researchers, policy makers and practitioners for the purposes of intervention research, and how these relationships might be initiated and maintained during each phase of the Intervention Research Framework.

**Objectives:** By the end of this chapter readers will be able to:

- Describe the background and development of the Intervention Research Framework
- Identify the various phases of the Intervention Research Framework
- Recognise descriptive and aetiological sources that can inform the Notification phase of the Intervention Research Framework to assist in identifying a gap in research, policy and/or practice
- Describe other notification sources that contribute to building a strength of argument for conducting specific research
- Identify how the SHAHRP study incorporated the Notification phase of the Intervention Research Framework in its intervention development and design
- Describe the value of researcher and policy/practice professional interactions throughout all phases of the Intervention Research Framework.

**Keywords** Research priorities • Notification sources

The Intervention Research Framework provides a scientific approach to the development of innovative and evidence-based health interventions. This type of approach to the development and testing of innovative research interventions can contribute important research evidence to both the school drug education field and other fields of study, thereby increasing the strength of evidence available in each field. The Intervention Research Framework has important empirical support, that is, support from experimental studies that demonstrate how the Intervention Research Frameworks phases and processes can have a significant and practical bearing on the behaviours in focus. Therefore the use of the Intervention Research Framework not only has an influence on the research field but can also have an impact on individual and community level behavioural outcomes.

## **Intervention Research Framework: Background and Development**

The Intervention Research Framework has its origins and is informed by a variety of earlier fields of study including: developmental research, social research and development, experimental social innovation; and model development research. Early approaches were introduced by Rothman [1] in his ‘Social R and D: Research and Development in the Human Services, and Thomas [2] in his consideration of ‘Designing Interventions for the Helping Professions’. During 1994, further refinement of the intervention research model was undertaken through the combined efforts of Thomas and Rothman [3] who published a variation of the model to guide intervention research design and development. This model integrated theory and research from earlier models and fields of study. Thomas and Rothmans work, which they titled ‘Model for Intervention Design and Development’, identified six phases: Problem Analysis and Project Planning; Information Gathering and Synthesis; Design; Early Development and Pilot Testing; Evaluation and Advanced Development; and Dissemination.

Thomas and Rothman provided a basis for identifying and defining a strategic scientific approach for research informed intervention design and development. Further refinement was undertaken by Holman [4] and Nutbeam [5, 6] both of whom added various aspects of previous models but redirected their attention to different pathways and emphases. Nutbeam’s model for ‘Building evidence for public health programs: stages of research and evaluation’ [6] incorporated a greater level of content and direction for public health professionals, particularly in the later stages of the model which includes a stage of quality control to assess program maintenance and performance. Holman [4] on the other hand, maintained a tight research perspective in his ‘Developmental Stages in Intervention Research’. It is a modified form of Holman’s approach, informed through the practical application to the SHAHRP Study, which is the focus for this handbook.

## Description of the Intervention Research Framework

The Intervention Research Framework is a scientific and systematic guide to innovative and evidence-based intervention development, and to the conduct of evaluative research of these interventions. The Intervention Research Framework incorporates the Notification, Development, Assessment and Dissemination phases. These phases encompass scientifically define gaps in knowledge, intervention development, and testing of interventions which can lead to greater likelihood of behavioural and translational impact.

The first two phases of the Intervention Research Framework involve scientific notification. Notification of a research issue is informed by epidemiological and aetiological studies to identify significant areas of concern, or an issue of importance, to justify a particular research focus. The **Notification phase** of the Intervention Research Framework provides a systematic way of identifying intervention research foci that address a current gap in the research field, and consequentially a gap in evidence-based policy and practice (Fig. 2.1).

The **Development** phase of the Intervention Research Framework incorporates formative intervention research processes. These formative processes ensure that an intervention is informed by several forms of critical input. This critical input includes: previous research in the field that has attained behavioural impact; insights from experts in the field; developed and design in conjunction with the key target groups (including those whose behaviour change is the focus of attention, and setting implementer of the intervention, i.e. students and teachers); incorporates guidance from theories and models; and is pre-tested in the setting prior to progressing on to the Assessment phase. From a research perspective, the Development phase also provides the opportunity to develop and refine research protocols, and survey instruments. This may include, for example, designing and testing measurement instruments used to assess fidelity of implementation (Chap. 10).

The **Assessment** phase of the Intervention Research Framework incorporates the longitudinal behavioural assessment of the intervention. Three forms of longitudinal behavioural assessment are usually considered during the Assessment phase, however, it is rare for all three to be applied to an individual research program. These three forms of longitudinal behavioural assessment include: efficacy assessment to determine how the program works and its behavioural impact under ideal conditions; effectiveness assessment to determine behavioural impact in 'real world' conditions or in communities or settings under which it might generally be used; and efficiency assessment which allows for a research comparison of the intervention delivery using alternative methods, or in alternative implementation settings, and includes a costs analysis comparisons. It is essential that the Assessment phase adopts rigorous scientific methodology to ensure that results meet appropriate scientific standards. When appropriate scientific standards are met, the results of the study can feed into the research field as a primary study, as a potential inclusion into systematic literature review of the field, and can provide evidence-based research on which future policy and practice can be based.

Descriptive research	Epidemiological studies used to describe the area of concern	N O T I F I C A T I O N
Aetiological research	Identifies causes or risk factors related to the problem of interest	
Formative research	Involves the development, design, pre-testing and review of the trial intervention	D E V E L O P M E N T
Efficacy research	Trials an intervention in optimal conditions. Identifies how an intervention will work and what impact it will have under ideal conditions	A S S E S S M E N T
Effectiveness research	Identifies the impact of an intervention in 'real world' conditions	
Efficiency research	Compares two ways of delivering a program or delivering a program in a different setting for cost-outcome comparison	
Dissemination research	Identifies how the program is used when freely available. What is the penetration or translational impact of the program in a variety of settings?	D I S S E M I N A T I O N

**Fig. 2.1** Intervention research framework

The **Dissemination** phase of the Intervention Research Framework assesses how widely the program is used in various settings when it is made available to policy makers and practitioners. The penetration of the program into policy and practice organisations is likely to be determined by how academic researchers liaise with these professionals, in the pathways that they use to provide dissemination of program development and findings, and how easily the program can be subsequently accessed and used by policy/practice professionals.

## Sources of Information for the Notification Phase

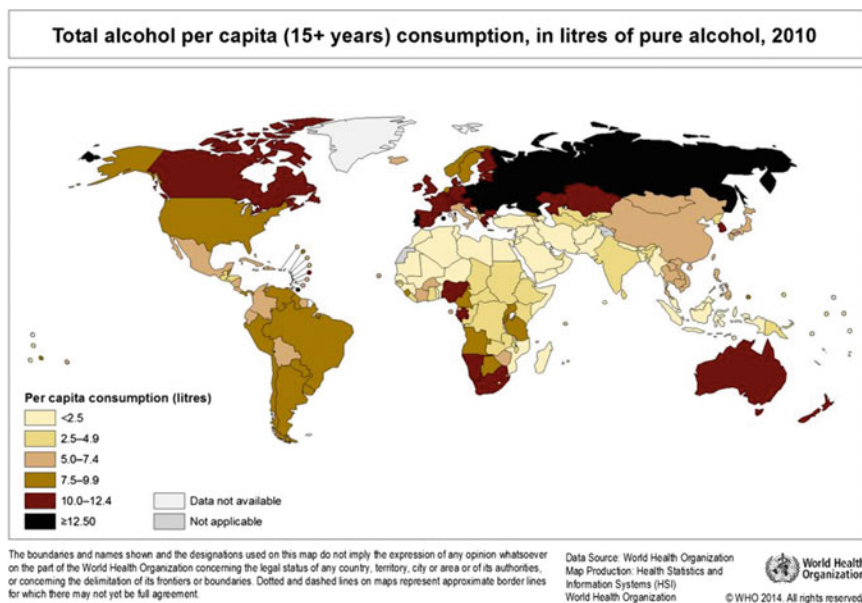
This section focuses on the Notification phase of the Intervention Research Framework and provides examples of the type of information that can be used to inform the Notification phase. The Notification phase assists a researcher in identifying gaps in research knowledge and gaps in community level policy, practice and priorities based on risk factors and behaviours of concern generally informed by prevalence data. Epidemiological and aetiological studies provide formal sources of information to advise the Notification phase and may include international, national, state or district level surveys; surveys conducted as part of regular government data gathering process; epidemiological items incorporated and gathered as secondary features of other research studies; and descriptive studies of specific population groups.

Other formal sources of Notification data can also reinforce and provide information on a gap in policy, practice and research. These sources of information may include: discussions with expert policy makers and expert researchers in the field, as well as discussions with practice professionals to determine experiences and knowledge from ‘on the ground’ specialists. This type of interaction can help to delineate concerns and gaps from a range of positions, including, most importantly, from active professionals working in the field. Another formal method to identify possible new forward thinking developments in the field is to undertake a systematic literature review of the field. This will identify the contemporary knowledge status that currently guide evidence-based policy and practice, and conversely, will also identify gaps in the field.

## The SHAHRP Study Experience

### *The Notification Phase of the SHAHRP Study*

The Notification phase of the SHAHRP study was guided by both formal and informal sources of information. At an international level, the World Health Organisation’s Global Status Report on Alcohol and Health [7] is a formal source of information which provides data on per capita alcohol consumption by country. This report identifies that Australia is one of the highest drinking nations in the world (Fig. 2.2). The type of information provided in the World Health Organisation’s Global Status Report on Alcohol and Health assists nations in determining the priority level of a health behaviour, based on comparison to other countries. The report also provides additional information that can assist in the Notification stage, such as details about factors effecting consumption and alcohol-related harm; health consequences related to pattern of alcohol consumption; comparisons of alcohol policies between countries including alcohol laws and public health interventions. These comparisons between nations helps to guide



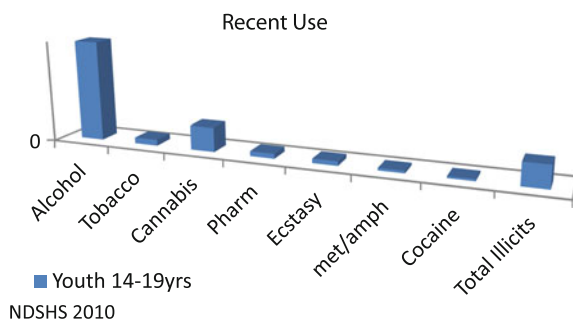
**Fig. 2.2** World health organisation global status report on alcohol and health—per capita consumption [7]

understanding about alcohol use in Australia, which in turn helps to build a picture about the issue to inform the Notification phase.

Other sources of alcohol and drug information that help to strengthen the Notification phase in intervention studies like SHAHRP can include various surveys on youth alcohol and drug use. For example, in Australia the Australian School Student Alcohol and Drug Survey [8, 9], Victorian Youth Alcohol and Drug Survey [10], and the Australia's National Drug Strategy Household Survey (NDSHS) [11] provide notification data. The National Drug Strategy Household Survey is conducted every four years and it is an important source of identifying trends in behaviour that can guide Intervention Research. For example, the survey informs that young people have the highest level of alcohol use in Australia; that alcohol is the most commonly used drug by young people aged 14–19 years (see Fig. 2.3), with consumption of alcohol four times more common than the total consumption of illicit drug use in this age group.

The National Drug Strategy Household Survey also informs that young people 14–19 years are much more likely than the adult population to experience acute alcohol-related harm, with nearly 18 % of young Australians experiencing acute harm at least once a month; and nearly 14 % at least once per week, and that 57.4 % of young Australians 14–19 years of age were victims of an alcohol-related incident in the previous 12 months. This means that at least one out of three (33.4 %) young people are likely to experience alcohol-related harm in a 12 months

**Fig. 2.3** National drug strategy household survey. Youth drug use (drawn from [11])



period, often (61 %) perpetrated by someone they don't know, and often (56.6 %) when they are not drinking themselves.

International research literature reports that alcohol is linked to the three leading causes of death in young people: unintentional injuries, homicide and suicide, and that the acute harm that young people experience from alcohol has a greater social and economic impact on society than does the chronic harm recorded in older people [12]. From an individual perspective, the harms experienced by young people in alcohol use situations are varied and cover a range of life experiences. Alcohol is often a precursor to other health and lifestyle problems that impact on young people's future such as: unsafe sex/sexual assault [13, 14]; violence and injury [14–16]; hazardous driving [14]; behavioural problems [14, 17]; academic failure [18]; mental health problems [19–21]; social problems [19]; and may have an impact on brain development [22, 23]. These harms are not isolated in time but can have a long term impact of the lives of young people at a critical time in their development, the impact of which may be carried over to adulthood. So although there are recognisable benefits of alcohol consumption [24], the reality for many young people (one in three from the latest Australian statistics) is that there are also negative consequences and some of these consequences can be life changing or life ending.

The type of Notification data identified in the previous paragraphs provides a strong message that a range of interventions, from laws, regulations, and public health and school level interventions, are required to counter, as much as possible, the negative impact of youth alcohol consumption. Intervention research based on the Intervention Research Framework can assist in refining intervention design and processes to ensure that interventions are evidence-based and have a greater likelihood of having a significant impact on behaviour.

The sources that helped inform SHAHRP during the Notification phase were quite extensive and provided strong guidance for intervention research developments. However, this level of information will not always be available to inform other research interventions. When this is the case, accessing informal sources of Notification information becomes an important option. Informal sources of notification information, while playing a part in assisting the Notification phase in well-established fields of research, are often the only available source in new and

developing research areas. Informal pointers to high risk groups or significant health risk area that can be valuable in determining future foci of intervention research include, but are not limited to: traditional media; social media; as well as websites and networks specific to a target group. Identifying the range of informal sources of information to uncover gaps in a particular field of interest can be best understood in discussions with a wide range of people and groups who represent, who are knowledgeable about, or who are directly drawn from the target group.

## **Benefits of Developing Links Between Researchers and Policy-Practice Professionals During Intervention Research**

Good relationships between researchers and policy and practice professionals can help to increase the value of intervention research in multiple ways and is a pivotal component to be considered during all phases of the Intervention Research Framework. This is not a new proposition and has often in the past been termed ‘bridging the gap between research and practice’. However the value of undertaking proactive negotiations and interactions throughout the Intervention Research Framework, that link and nurture research and policy-practice interactions, cannot be overstated. To ignore this aspect during intervention research is to reduce the quality, meaningfulness and applicability of any intervention research undertaking.

There are clear benefits for developing links between research and policy and practice that work to increase the value and quality of both research and practice. From a research perspective, involvement of policy and practice professionals from as early as the conceptual stages of intervention research helps to ensure that the intervention attains that greatest applicability for the setting and setting implementers, as it enables researchers to incorporate setting determinates into the intervention research. This in turn increases the scope for the intervention to be implemented with a high level of fidelity during both the Assessment and the Dissemination phases of Intervention Research Framework. Research and policy and practice interactions during intervention research also provide an overt message to future providers about inclusiveness that will impact on future uptake. Although it may be more time consuming to involve policy and practice professionals in intervention research, if constructive and open relationships are developed early on during intervention research processes with policy and practice professionals who are forward thinking and innovative, then the intervention research becomes more meaningful and has a greater likelihood of impacting on policy and practice as it becomes a program with proof of impact. In addition to the application benefits of research to policy and practice, funders of intervention research are increasingly assessing grant proposals with some consideration of research to policy and practice links that will enable the intervention research to be more successfully integrated.



The following examples identify methods and benefits of involving health professionals and/or the primary target group in each stage of the Intervention Research Framework (Notification, Development, Assessment, Dissemination).

### ***The Notification Phase***

The Notification phase can benefit from policy and practice input by confirming the need for an intervention to address a gap. Policy and practice input at this stage can also provide critical links to target groups and research sites to undertake further stages in the Intervention Research Framework. Interaction with policy and practice professionals can provide practical insights into a range of issues that are particular to the setting and that may impact on intervention research in that setting. Links made at this stage may impact on uptake and dissemination pathways at a later stage.

### ***The Development Phase***

The inclusion of target group input into intervention development is critical as it ensures that the program is relevant, meets the needs, and resonates with the group in which the intervention is attempting to have an impact. It is also essential to involve the professional implementers of the intervention during intervention development to ensure that any setting barriers to implementation are identified, addressed and resolved during early development.

### ***The Assessment Phase***

Keeping policy and practice professionals aware and interested in intervention research is likely to be critical to its success. Providing policy and practice professionals with the justification for conducting the research, and outlining the research process is a basic courtesy, particularly for those professionals at the sites in which the intervention research is being conducted. This proactive interaction may, in turn, help to increase the potential for support and reduce the potential for barriers during the time in which the research intervention is being conducted, and may subsequently encourage interest in future research projects. Policy and practice professionals can also help optimise the conduct of the Assessment phase of the research with their extensive knowledge of the setting and links to staff and procedures within the setting.

## ***The Dissemination Phase***

The dissemination processes adopted during the Dissemination phase need to go beyond publication in scientific journal and presentation at scientific conferences. Ideally, dissemination should be critically influenced by the dissemination pathways used by policy and practice organisations. If researchers are able to link into the existing dissemination methods used within policy and practice organisations, then uptake opportunities are greatly extended. Formal discussions and presentation provided by researchers to policy and practice professionals which includes information about the Notification, Formative and Assessment phases of the research can be a very powerful tool in increase knowledge about, and motivation to be involved in a research initiative. Formal discussions and presentations with gatekeepers and other key staff can increase the dissemination and uptake of evidence-based findings and the research intervention, particularly if it has proof-of-impact.

These examples of how research to policy and practice links might be incorporated into the phases of the Intervention Research Framework do not encompass the whole range of possibilities in this area. To ensure that links are optimised, early discussions between researchers and policy and practice professionals, particularly those who have a high level of interest in research and evidence-based processes, should be initiated. In this way, researchers are more readily able to establish and incorporate links and actions that support the Intervention Research Framework in the early stages of the research process.

## **Recommendations**

- 2.1 Application of the Intervention Research Frameworks can have a significant and practical bearing on the behavioural impact of intervention research and should be adopted in behaviour-oriented intervention research studies.
- 2.2 The Notification phase of the Intervention Research Framework assists a researcher in identifying gaps in research knowledge and gaps in community level policy and practice. Both formal and informal sources of notification data should be accessed to inform intervention research.
- 2.3 The links and interaction between intervention researchers and related policy and practice professionals can increase the value of intervention research in multiple ways. Research links with policy and practice professionals should be actively developed at each phase of the Intervention Research Framework.

## References

1. Rothman J. Social R and D: Research and Development in the human services. Englewood Cliffs, NJ: Prentice Hall; 1980.
2. Thomas E. Designing interventions for the helping professions. Beverly Hills, CA: Sage Publications; 1984.
3. Thomas E, Rothman J, editors. Intervention research. Design and development of human service. New York: Hawthorn Press; 1994.
4. Holman D. The value of intervention research in health promotion. Presented at the Western Australian health promotion foundation 'Enriching and improving health promotion research' seminar, 16th October 1996. Perth, Western Australia. 1996.
5. Nutbeam D. Achieving best practice in health promotion: improving the fit between research and practice. *Health Educ Res.* 1996;11(3):317–26.
6. Nutbeam D. Best research for best health. A university perspective. PowerPoint presentation. UK: University of South Hampton; 2009.
7. World Health Organisation. Global status report on alcohol and health. Luxembourg, Switzerland: World Health Organisation; 2014.
8. Haynes R, Kalic R, Griffiths P, McGregor C, Gunnell A. Australian school student alcohol and drug survey: alcohol report 2008—Western Australian results. Drug and alcohol office surveillance report: number 2. Perth: Drug and Alcohol Office; 2010.
9. Australian Government Department of Health and Ageing. Australian secondary school students' use of tobacco, alcohol, and over-the counter and illicit substances in 2011. Canberra: Australian Government Department of Health and Ageing; 2009.
10. Victorian Drug and Alcohol Prevention Council. 2009 victorian youth alcohol and drug survey. Final report. Melbourne: Victorian Drug and Alcohol Prevention Council; 2010.
11. Australian Institute of Health and Welfare. 2010 national drug strategy household survey report. Canberra: Australian Institute of Health and Welfare; 2011.
12. Chikritzhs T, Jonas H, Stockwell T, Heale P, Dietze P. Mortality and life-years lost due to alcohol: a comparison of acute and chronic causes. *Med J Aust.* 2011;174:281–4.
13. Coleman L, Carter S. A qualitative study of the relationship between alcohol consumption and risky sex in adolescents. *Arch Sex Behav.* 2005;34:649–61.
14. Neal D, Fromme K. Event-level covariation of alcohol intoxication and behavioral risk during the first year of college. *J Consultant Clin Psychol.* 2007;75:294–306.
15. Kodjo C, Auigner P, Ryan S. Prevalence of, and factors associated with, adolescent physical fighting while under the influence of alcohol or drugs. *J Adolesc Health.* 2004;35(346):e11.
16. Mattila V, Parkkari J, Lintonen T, Kannus P, Rimpela A. Occurrences of violence and violent-related injuries among 12–18 year old Finns. *Scand J Publ Health.* 2005;33:307–13.
17. French M, Maclean J. Underage alcohol use, delinquency, and criminal activity. *Health Econ.* 2006;15:1261–81.
18. Bonomo Y, Coffey C, Wolfe R, Lynskey M, Bowes G, Patton G. Adverse outcomes of alcohol use in adolescents. *Addiction.* 2001;96:1485–96.
19. Brown S, Tapert S. Adolescence and the trajectory of alcohol use: basic to clinical studies. *Annal N Y Acad Sci.* 2004;1021:234–44.
20. Sher L. Alcoholism and suicidal behaviour: a clinical overview. *Acta Psychiatrica Scandanavia.* 2006;113:13–22.
21. Shepherd J, Sutherland I, Newcombe R. Relations between alcohol, violence and victimization in adolescence. *J Adolesc.* 2006;29:539–53.
22. Guerri CMP. Mechanisms involved in the neurotoxic, cognitive, and neurobehavioural effects of alcohol consumption during adolescence. *Alcohol.* 2010;44:15–26.
23. Guedd J. The teen brain: insights from neuroimaging. *J Adolesc Health.* 2008;42:335–434.
24. Farrington F, McBride N, Midford R. The Fine Line: Students' perceptions of drinking, having fun and losing control. *Youth Stud Aust.* 2000;19(3):32–8.

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