

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### **Introduction**

The purpose of this research study was to identify and describe designated OHS practitioners' and work-place managers' perceptions of the implementation of OHS policy in the work-place within agencies of the public sector of South Australia, and whether these perceptions are congruent with policy and work-place practice.

The three research questions selected for the study were as follows:

1. *What strategies do OHS practitioners utilise to implement OHS policy?*
2. *How do managers in work-place settings perceive OHS policy and practice?  
and,*
3. *Are the strategies employed by OHS practitioners congruent with OHS Policy?*

This chapter was organised according to the following headings: permission to conduct the study; research design; defining the population; data gathering instruments selected for the study; design of data gathering instruments; trialling; administration of data gathering instruments; data analysis, validity, reliability, dependability and triangulation.

### **Permission to Conduct the Study**

Permission to conduct the study was granted by the Southern Tasmanian Social Sciences Human Research Ethics Committee. Permission to conduct the study was also granted by the Commissioner for Public Employment in South Australia (refer Appendix A).

### **Research Design**

A case study method was selected as the research design for this study which took place in a natural setting designated as a bounded system. Case study method focuses on what Burns (2000) contended is “a bounded system” which is an entity in itself and allows “...examination in depth” (p.461). Burns claimed that the researcher can probe deeply, undertaking intensive analysis of the subject of the case study examining, “... the [various] phenomena” (p.461). Study of a particular case might reveal insights, which Burns (2000) has found, may relate to “... the typical class of events from which the case has been drawn” (p.461). According to Punch (1998), case study method allows for a variety of research questions and purposes which allows the researcher “to develop as full an understanding of that case as possible” (p.150).

Isaac and Michael (1995) contended that a case study is exploratory in nature and the outcome of a case study may provide information and “possible hypothesis” to guide future research (p.52). The case study is useful to “...pioneer new ground...” which allows the researcher to bring to light “...important variables, processes and interactions” (p.52).

Burns (2000) pointed out that Case Study method can be used to collect extensive data to produce understanding of the entity being studied, allowing the investigation to retain holistic and meaningful characteristics "... of real life events" (p.460). Sofaer (1999) stated case studies provide the ability for a researcher to obtain "... direct experience of the ways in which actors interact in a setting" (p.9).

The case study, however, may be viewed as being relatively subjective. Burns (2000) pointed out that the researcher may be selective in interpreting results, in making observations and interpretations that may not be easily checked or verified "... allowing the opportunity to advance personal causes"(p.474). Further, Burns (2000) claimed that "many research investigators regard the case study method with disdain viewing it as a less desirable form of inquiry" (p.473). The criticism of the role of human subjectivity is highlighted by Burns as a perceived weakness of the Case Study method especially, "...when selecting evidence to support or refute an explanation of phenomena" (p.473). Further, Burns reported that critics may claim it is easy for the case study investigator to "... allow equivocal evidence or personal views to influence the direction of the findings and the conclusions" (p.473).

Isaac and Michael (1995) identified a weakness of Case Study method was a "narrow focus on a few units ... limiting ... the representativeness" (p.52), this does not easily "...allow valid generalisations to the population from which the units come" (p.52).

Isaac and Michael (1995) contend that generalisation can occur only when "...appropriate follow-up research is accomplished which focuses on specific hypotheses and using proper sampling methods..." (p. 52).

Further, Isaac and Michael (1995) claimed that case studies may be vulnerable to subjective bias as the case itself may be selected by the researcher because of “its dramatic rather than typical, attributes; or because it neatly fits the researchers preconceptions” (p.52). To this extent selective judgments by the researcher could rule data in or out, or the researcher could “assign a high or low value to their significance or place them in one context rather than another” (p.52).

Burns (2000) contended that there may be a concern that case studies provide “...very little evidence for scientific generalisation”, however, he also argued that this view is valid only where there is an assumption that producing generalisable theory “...is the only worthwhile goal” of investigation (p.474). Further, Punch (1998) pointed out that with Case Study method, understanding the case may be the major focus as “...it is not the intention of such a study to generalise, but rather to understand this case in its complexity and entirety” (p.154).

This study focused on OHS work-place practice and the way practice is perceived by the people involved in the implementation of OHS policy. It was considered to be important to investigate the research questions in the work-place setting. In the absence of studies concerning work-place practice in OHS (LaMontagne, 2003), the study was considered to be exploratory in nature.

The setting for the investigation, that is, the South Australian public sector, was identified as a bounded system and a case study method was deemed an appropriate

method to use for the study, which would gather information regarding the perceptions of those persons involved in the OHS implementation process. The strength in selecting a case study method was the opportunity for the researcher to gather data concerning practice in a designated work-place setting, and to generate hypotheses that could inform further research in this area. The weakness of the case study method is that the findings are limited to the setting of the bounded system and may not apply OHS work-place practice in other settings. It was considered that the exploratory nature of the study was important to open up new research perspectives in OHS policy implementation and practice.

### **Defining the Population**

The population identified for questionnaire consisted of designated OHS practitioners, and the population for semi-structured interview consisted of work-place managers within the public sector of South Australia.

It should be noted that the structure of the public sector of South Australia is defined by the Public Sector Management Act, 1995 (PSM Act). The PSM Act (1995) defines the public service as consisting of administrative units. The Act further defines the public sector to be made up of agencies including, instrumentalities of the crown, corporate bodies responsible to the crown as well as administrative units. The public sector is therefore inclusive of the public service. Administrative units, corporate bodies and instrumentalities are commonly known as agencies. The public service comprises approximately 18,000 employees and the public sector, inclusive of the public service, employs approximately 80,000 staff, which represents almost twelve

percent of the workforce of South Australia (Wright, 2004). Agency employment numbers vary from less than ten to more than 25,000 staff. Agencies employing over 200 staff usually employ a designated OHS practitioner; larger agencies may employ up to 20 OHS practitioners and other specialist staff focussing on injury management.

### *OHS Practitioners*

There are approximately 120 OHS practitioners, according to Hennekam and Flower (2002), in the agencies of the South Australian public sector targeted for the questionnaire. Hennekam and Flower (2002) maintain that the characteristics of the population of OHS practitioners represented a gender balance of approximately 60:40 (female : male), and an age characteristic of 63 percent over 40 years of age, and 50 percent with over two years of service in the public sector. Further, 67 percent of OHS practitioners have more than 50 percent of their duties focussed on OHS activities (pp.3-4). Based on the profile provided by Hennekam and Flower (2002), the researcher assumed the OHS practitioners identified for the study would have had adequate experience of OHS to provide useful information.

Of the 120 practitioners targeted for the questionnaire a total of 61 practitioners responded giving a response rate of 50.8%. Characteristics of the sample who responded to the questionnaire indicated that 46.7% had six to ten years experience as an OHS practitioner and 21.6% had over eleven years experience as an OHS practitioner, and 68.8% of respondents report having between six to fifteen years experience in Occupational Health and Safety. Of the OHS practitioners responding to the questionnaire, 30.4% reported having a qualification at certificate level and 41.0%

reported holding a diploma or higher qualification. With regard to level of satisfaction, 63.3% reported a rating of four or five, with five being “very satisfied” at being an OHS practitioner. Result of demographic responses are shown in Tables 11a, 11b, 11c, 11d, 11e, on page 84.

### *Work-place Managers*

There were approximately 200 work-place managers in the South Australian public sector agencies which agreed to have their managers participate as the population for the semi-structured interview. Work-place managers typically have Year 12 education and receive work-place training and development in both operational skills and management. A sample of 30 percent of work-place managers was drawn from the population of managers. Public sector agencies were asked to number the lists of managers to be supplied. The researcher compiled these lists into a single list numbered from one to 200. A table of random numbers (Lind, Mason and Marshal, 2000, p. 514) was used to select the random sample of 30 percent, making a list of 60 work-place managers to be approached for semi-structured interviews.

Work-place managers have the responsibility of supervising staff and ensuring OHS policy is implemented effectively in the work-place. The familiarity of work-place managers with policy implementation afforded the researcher insight into the work-place manager’s perceptions and context of policy implementation. Therefore, information gathered by interview was used also to clarify issues raised by the completed questionnaires. Interview technique was the most appropriate method to gain this insight (Burns 2000).

## **Data Gathering Instruments Selected for the Study**

Three data gathering instruments were selected for the study as follows:

(i) Questionnaire of OHS practitioners, (ii) Semi-structured interview of work-place managers, and (iii) Document analysis of OHS policy and legislation.

### **Design of Data Gathering Instruments**

#### *A. Questionnaire*

A questionnaire of OHS practitioners was conducted in order to identify and describe the perceptions of practitioners of the implementation of OHS policy in the work-place of the South Australian public sector. Questionnaires are useful, according to Burns (2000), as a method of gathering data which is descriptive of current events, conditions or “attributes of a population ... at a particular point in time” (p. 566). A questionnaire was chosen as the target population was highly literate and experienced in responding to written questionnaires (Bell, 2000, p.14).

The aim of the questionnaire was to generate reliable and valid data from a high proportion of a population within a reasonable time period at a minimum cost, which as Bell (2000) pointed out, “... can be a relatively cheap and quick way of obtaining information” (p.14).

A questionnaire was constructed which consisted of six questions that sought information about the participants, four rating scales of ten items each, on a scale of five to one (with five being high and one being low) seeking information and perceptions about aspects of OHS policy and practice, and 23 items designed as

Likert-scales, structured as strongly agree, agree, not sure, disagree and strongly disagree. The 23 Likert-scale items were drawn from three areas as follows: ten items focussed on *Management Support* for OHS, six items focussed on *OHS planning*, and seven items focussed on *OHS prevention strategies*.

One forced choice question was designed to find out how OHS practitioners perceived the strengths and weaknesses of policy implementation and one open-ended question designed to invite opinion regarding advice that could be given to their Chief Executive to improve OHS practice in the work-place.

The use of rating scales is useful where a researcher wishes to elicit judgment on independent items, and place a numerical rating on the value given to that item by the participant, allowing the researcher to elicit a similar understanding to that gained from use of the semantic differential which Burns (2000) claimed is a “...‘measurement of meaning’” (p. 561).

The use of Likert-scales within the questionnaire was advantageous in that it generated data from the participants’ response which produced relatively homogenous scales with reasonably high validity and reliability, which as Burns (2000) asserted, “...increases the probability that a unitary attitude is being measured” (p.560). However, Burns (2000) pointed out the data produced is ordinal in nature and the greater number of response possibilities may mean that the “...total score of an individual has little clear meaning” (p.560).

The use of an open ended question supplied the participants with a context for an answer while offering little restriction on the participants' input which, as Burns observed, could assist in facilitating "a richness and intensity of response" (p .572).

Three areas of OHS policy implementation were chosen for research and these were identified as follows:

- Strategies which demonstrate management support for OHS including consultation, communication and allocation of resources (*Management Support*)
- Strategies to plan for, allocate accountability for, and review OHS activity (*OHS Planning*)
- Strategies to apply OHS prevention measures including training, development and work-place activity (*OHS Prevention Strategies*).

The three areas and their items are drawn from research by Baker (1990), WorkCover Corporation of South Australia Performance Standards for Self Insurers (WorkCover 1995), Gallagher (1997), Marsh et al., (1998), Trethewy et al., (2001), Rowe (2001), and Horstmanshof et al., (2002).

*Strategies which demonstrate management support for OHS including consultation, communication and allocation of resources (Management Support)*

A total of 20 items, consisting of ten rating scale items and ten Likert-scale items, were designed to gather information about *Management Support*. The design of these items was drawn from Baker (1990), WorkCover Corporation of South Australia Performance Standards for Self Insurers (WorkCover 1995), Gallagher (1997), Marsh et al., (1998), Trethewy et al., (2001), Rowe (2001), and Horstmanshof et al., (2002).

The twenty items were as follows:

**Rank each characteristic according to the importance to you as an OHS practitioner**  
Strong commitment to OHS displayed by your Chief Executive

Clear OHS responsibilities for all staff identified in position descriptions  
OHS included as an item in staff appraisal/performance management reviews  
Adequate allocation of resources to support policy implementation

**Rank items according to the frequency of occurrences within OHS practice.**

Meetings  
Work with external agencies (eg. WorkCover)

**Rank items according to the time spent by you as an OHS practitioner**

Meetings  
Work with external agencies (eg. WorkCover)

**Rank items according to the most costly issues you work with as a practitioner**

Meetings  
Work with external agencies (eg. WorkCover)

**Likert-scale items**

Union consultation is not relevant to the development of policy  
Chief Executive support is irrelevant to the success of OHS policy implementation  
OHS legislation is used by managers in their operational decision-making  
OHS issues are competently dealt with by management  
I am able to take a leadership role in OHS, within my agency  
OHS is seldom discussed at executive meetings  
OHS has adequate budget support  
I am unable to involve senior management in the management of OHS  
Chief Executive strongly supports OHS  
I am able to report directly to my Chief Executive on OHS matters of importance

*Strategies to Plan for, allocate Accountability for, and Review OHS activity (OHS Planning)*

A total of eighteen items, including twelve rating scale items and six Likert-scale items, were designed to gather information about *OHS Planning*. The design of these items is based on the work by Baker (1990), WorkCover Corporation of South Australia Performance Standards for Self Insurers (WorkCover 1995), Gallagher (1997), Marsh et al., (1998), Trethewy et al., (2001), Rowe (2001), and Horstmanshof et al., (2002).

The eight items were as follows:

**Rank each characteristic according to the importance to you as an OHS practitioner**

OHS objectives included in Strategic Business Plans  
Safety objective detailed in each service area business plan  
Continuous improvement of OHS

**Rank items according to the frequency of occurrences within OHS practice.**

Development of OHS policy  
Policy implementation  
Audit activities

**Rank items according to the time spent by you as an OHS practitioner**

Development of OHS policy  
Policy implementation  
Audit activities

**Rank items according to the most costly issues you work with as a practitioner**

Development of OHS policy  
Policy implementation  
Audit activities

**Likert-scale items**

Positive performance indicators are used to facilitate OHS policy implementation  
Performance management should be related to OHS preventative approaches  
Non-compliance with OHS is not easily identifiable in my agency  
My agency has clear means to identify gaps in policy implementation  
Self-insurance guidelines are poorly integrated into my agency's operations  
My organisation rewards good performance in OHS

*Strategies to apply OHS prevention measures including Training, Development and work-place activity (OHS Prevention Strategies)*

A total of 25 items, including eighteen rating scale items and seven Likert-scale items, were designed to gather information about *OHS Prevention Strategies*. The design of these items is drawn from research by Baker (1990), WorkCover Corporation of South Australia Performance Standards for Self Insurers (WorkCover 1995), Gallagher (1997), Marsh et al., (1998), Trethewy et al., (2001), Rowe (2001), and Horstmanshof et al., (2002). The 25 items were as follows:

**Rank each characteristic according to the importance to you as an OHS practitioner**

Flexibility for business units to address key OHS issues  
A prevention approach to OHS adopted by management  
Strong emphasis on education in OHS

**Rank according to the frequency of occurrences within OHS practice**

Physical incidents (hazards/ injuries)  
Psychosocial incidents (hazards/injuries)  
Administration  
Injury management  
Training and development

**Rank items according to the time spent by you as an OHS practitioner**

Physical incidents (hazards/ injuries)  
Psychosocial incidents (hazards/injuries)  
Administration  
Injury management  
Training and development

**Rank items according to the most costly issues you work with as a practitioner**

Physical incidents (hazards/ injuries)  
Psychosocial incidents (hazards/injuries)  
Administration

Injury management  
Training and development

**Likert-scale items**

There is strong resistance to OHS best-practice  
As an OHS practitioner, I am utilised appropriately for prevention of injury  
As an OHS practitioner, I am routinely involved in purchasing decisions  
OHS practitioners are involved in policy-making for work-place operations  
My agency consistently adopts OHS best-practice  
As an OHS practitioner I am involved in early intervention in injury management  
As an OHS practitioner, I am able to undertake wide spread consultation on OHS policy implementation

The questionnaire consisted of a total of 23 items constructed as Likert-scale items and 40 items constructed as rating scale items, six questions regarding demographic data, one question seeking a judgment and one open ended question. A copy of the questionnaire of OHS Practitioners may be found in Appendix B.

*B. Semi-Structured Interviews*

Semi-structured interviews (Burns, 2000) were conducted with work-place managers who, as part of their general duty of care, are required to ensure the effective application of OHS policy and practice to their work-place. The semi-structured interview questions were designed to ascertain perceptions of the implementation of OHS policy to the work-place.

A semi-structured interview schedule was designed as follows: three questions concerning the work-place managers' experience and six questions relating to the questionnaire of OHS practitioners. A semi-structured interview schedule was designed to find out how work-place managers viewed strategies of implementation policy into their work-place (refer Appendix C).

A semi-structured interview is useful to gain opinion from informants. Burns (2000) described interviews “...as a verbal exchange ... in which an interviewer tries to elicit information, beliefs or opinions from another person” (p.423). Burns (2000) suggested that an advantage of the semi-structured interview is the ability of the informant to use their own perspective and the “...language natural to them” rather than that of the researcher (p.425). The semi- structured interview can elicit information about the way in which a person functions in their own environment and Burns (2000) claimed that “... only the person who understands the social reality in which they live, is the person themselves” (p.425).

The manner of the interviewer can have an effect on the outcome of the interview. A bias can creep into interviews, according to Bell (2000), as a “response effect” and may occur in the interview if the interviewer “...holds strong views about some aspect of the research” (p.139). This effect may be ameliorated by the discipline of the interviewer in keeping to the schedule of questions and allowing the respondent to speak as Burns (2000) advises in their “... own voice” (p.425).

### *C. Document analysis*

A document analysis is a useful method of gathering data about policy and practice where that is the focus of research. OHS, according to Bohle and Quinlan (1991), is legislated by state governments which constitutionally have the responsibility for worker safety.

A document analysis was undertaken examining legislation and policy as well as, materials and resources relevant to Occupational Health and Safety implementation including training. The purpose of the document analysis was to identify what Robson, Shannon, Goldenhar and Hale, (2001) describe as relationships between policy and work-place practice.

Document analysis can provide an objective and historical source of data for a research study (Robson et al., 2001). Burns (2000) suggested that documents can be used to corroborate evidence from other sources and specify “events and issues in greater detail” than available through other data gathering methods (p.467). However, Burns (2000) cautioned that documents as sources of evidence may not be accurate and may contain bias and specific points of view which must be questioned, for example, if examining the minutes of a meeting the researcher should ask : “.... was the author a partisan...?” (p.487). Robson et al., (2001) further cautioned that documents may only partially reflect reality, and may only tell the researcher “ what should be done, not whether it is actually done.” (p. 71).

Bell (1999) advised that documents should be critically examined for a number of aspects of evidence including, the intended purpose of the document, any unintended or unwitting evidence within the document, the authorship, the assumption and biases within the document, the researcher may then be able to “decide whether the document is reliable for a particular purpose” (p.117).

The researcher established through a process of “external criticism” what Burns (2000) described as the authenticity of the materials and sought to evaluate by a process of internal criticism whether the data revealed what Burns (2000) advised the researcher to ensure is “a true picture” (p 487).

Documents selected for document analysis included, national guidelines, state legislation, regulations, Commissioners’ guidelines, departmental policy, speeches, and presentations. This document analysis undertook a systematic approach to gather data regarding policy and its implementation. Documents were scrutinised to gather information about three areas:

- *Management Support*
- *OHS Planning*
- *OHS Prevention Strategies*

The following documents were discarded: Individual agency OHS policies on the grounds these would identify individual practitioners, The WorkCover Workplace Health and Safety Handbook (2002), as this was not specifically targeted at the needs of the South Australian public sector. Also discarded on the grounds that they were not implemented until after July 2005, were the following: Explanatory Information: Occupational Health Safety and Welfare (SafeWork SA) Amendment Bill 2003 and Occupational Health Safety and Welfare (SafeWork SA) Amendment Bill 2003. Also discarded were, the review of Workers Compensation and Occupational Health Safety and Welfare Systems in South Australian Volume 1, 3 December 2002 and the Review of the criteria for the Exempt Employer System in South Australia, August 2004.

The documents selected for the document analysis were as follows:

<i>National OHS Guidelines</i>			
1.	National Occupational Health and Safety Commission (NOHSC)	National OHS Strategy,	2002
<i>South Australian Mandatory OHS requirements</i>			
2.	South Australian Government	Occupational Health, Safety and Welfare (OHSW) Act	1986
3.	South Australian Government	OHSW Regulations	1995
4.	South Australian Government	Public Sector Management (PSM) Act	1995
5.	WorkCover Corporation (SA)	Performance Standards for Self Insurers	1997
<i>South Australian Public Sector OHS Guides</i>			
6.	Department of Premier and Cabinet Public Sector Occupational Health and Injury Management	Integrating OHS and Injury Management, A Guide for Public Sector Agencies	1999
7.	Office for the Commissioner for Public Employment (OCPE)	Guideline for the South Australian Public Service Responsive and Safe Employment conditions	2001
<i>South Australian Public Sector OHS Directions</i>			
8.	South Australian Government	Safety in the Public Sector (Premier's Statement)	2004
9.	Department for Administrative and Information Services (DAIS) Public Sector Workforce Relations (PSWR)	Minute to Portfolio Chief Executives Re: Workplace Safety Management in the SA Public Sector	2004
10.	DAIS PSWR	Workplace Safety Management in the Public Sector 2004 –2006 Implementation Plan	
11.	DAIS PSWR	Ministerial Safety Checklist: Safety in the Public Sector 2004 –2006	2004
12.	DAIS PSWR	Power Point Presentation Workplace Safety Management in the SA Public Sector	2004
13.	South Australian Government	Speech for Minister Wright: Workplace Safety Management in the Public Sector – Launch	2004
<i>South Australian Public Sector Agency Responses</i>			
14.	DAIS PSWR	Workplace Safety Management in the SA Public Sector – Our Strengths and Challenges	2004
15.	Department of Health	Implementing Workplace Safety Management Strength & Challenges	2004
16.	DAIS	Occupational Health, Safety and Injury management in DAIS	2004
17.	Department of Education and Children's Services	Workplace Safety Management in the SA Public Sector 2004-2006 DECS Implementation strategies	2004

A full citation of the documents included in this research may be found in the list of References.

## **Trialling**

The questionnaire was trialled with four experienced and senior officers in the South Australian public sector who have had extensive experience in OHS practice in the South Australian public sector. The trial participants were not current practitioners and did not participate in the study. Participant one was a staff representative on an agency OHS committee, participant two was a management representative on an agency OHS committee, participant three was a senior organisational psychologist with experience in advising on strategic OHS interventions, and participant four was a senior advisor on public sector OHS policy.

The semi-structured interview was trialled with three work-place managers with similar experience to, but who did not work in the designated agencies of managers targeted for the study. Bell (2000) advised it is critical that the questionnaire questions are well worded, and a trial be undertaken as "...piloting is necessary to ensure the questions mean the same to all respondents" (p.14). The trials enabled the researcher to practise techniques for minimising bias recommended by Bell (2000), including maintaining the same emphasis for each question, being " careful about the way questions are put" (p. 140) and "developing [an] awareness of the problem plus constant self control" (p.139).

## **Administration of Data Gathering Instruments**

### *A. Questionnaire*

A list was obtained from the coordinating unit for OHS for the SA public sector within the Department of Administrative and Information Services. 120 participants whose names were acquired were forwarded information regarding the questionnaire by post. The questionnaire was then administered by post to the targeted population of OHS practitioners. Follow up letter/emails were used to ensure maximum response by the population. Sixty one (61) practitioners responded to the questionnaire. The researcher did not know who returned the questionnaire. The conditions of anonymity were set out in the information letters to questionnaire participants (refer Appendix B).

### *B. Semi-structured Interviews*

The researcher approached the Commissioner for Public Employment in writing, seeking the permission required to undertake semi-structured interviews and requesting names of work-place managers.

A group of 200 work-place managers was selected from South Australian public sector agencies that are composed of highly differentiated work groups and business units. Work-place managers are senior public service employees in charge of major programs/projects or work areas, or both. The researcher sought to interview ten percent of this group. Once permission was received a list of names of the population was used to obtain the sample. Using random sampling methods, 60 work-place managers were selected and contacted regarding their willingness to participate in the

semi-structured interview. Participants were approached in writing and followed up by telephone to confirm participation at a time convenient to the interviewee. Of those approached in writing, 28 work-place managers did not respond, 18 work-place managers declined, 15 work-place managers responded in the affirmative, 13 were interviewed, two work-place managers were unable to participate in the interview due to other work commitments. The schedule of questions was forwarded to the participant in advance of the interview in order to allow participants time to reflect upon their answers. Responses from the interviews were audio-taped and transcribed with the permission of the interviewee.

Semi-structured interviews were conducted with work-place managers, in order to clarify practitioners' responses to questionnaire items and provide complementary information. The responses of work-place managers identified a range of perceptions about the implementation of OHS policy in the work-place, within agencies of the public sector of South Australia. The responses allowed the researcher to assess congruence of policy and work-place practice. The participating work-place managers were asked nine questions.

## **Data Analysis**

### *A. Questionnaire*

Responses to the questionnaire questions were coded as frequencies and percentages, and post hoc analysis was undertaken involving chi-square calculated at the 0.05 level of significance, using the Statistical Package for the Social Scientists (SPSS, 1999a). The data collected for the questionnaire relates to Research Question One.

### *B. Semi- structured interview*

The content of the transcripts were analysed and categorised as suggested by Burns (2000) into the areas or themes, which were: *Management Support, OHS Planning and OHS Prevention Strategies*. Content analysis was described by Burns as a “systematic quantification of certain characteristics the investigator may be interested in, in terms of their frequency of occurrence in a selected context” (p. 589). The data from the semi-structured interviews related to Research Question Two.

### *C. Document Analysis*

Content analysis in relation to documents was defined by Bell (2000) as the technique which a researcher could use to make inferences about data in relationship to its context which were both valid and replicable (p.111). Results were grouped according to Research Question Three.

## **Validity**

When considering the design of a study, it is important for a researcher to establish the validity of the instruments being used to gather data for a study. O’Sullivan, Russell and Berner (2003) pointed out that definitions of items within instruments need to “measure the concept adequately.” (p.119).

Both face validity and content validity are examined by expert judges. Content validity is concerned with establishing what Burns (2000) described as the “representativeness” of the content of a measuring instrument (p.352). O’Sullivan et al., (2003) argued that content related evidence is similar to face validity but “content

validity provides stronger evidence” than face validity, as face validity offers “at best only superficial evidence of a measure’s appropriateness.” (p. 118). Content validity of a data gathering instrument is judged, according to Burns (2000), on the adequacy of the sampling instrument or process being administered to obtain representative data about a topic or matter targeted for research (p. 352). Therefore a judgement needs to be made by a panel of experts to determine the adequacy of the items to measure what the researcher was investigating (Burns, 2000).

An expert panel of four people was established to judge the validity of the questionnaire of OHS practitioners. The expert panel consisted of one staff representative on an agency OHS committee, one management representative of an agency OHS committee, one senior organisational psychologist with experience in strategic OHS and one senior policy advisor for the South Australian public sector. The panel of experts judged the OHS practitioner’s questionnaire to have adequate content validity, that is, the items in the questionnaire was representative of the area of focus and purpose of the study (Burns, 2000, p.352).

### **Reliability and Dependability**

Reliability in qualitative research may be viewed as the accuracy of data or fit of what the researcher records and is described by Burns (2000) as “what actually occurs in the setting under study” (p.417). However, Burns (2000) contended that qualitative research is less concerned with replicability of results and more with exploring the complexity of situational contexts, therefore, the approach to reliability in qualitative research may be alternatively viewed as the establishment of dependability.

To ensure that research is dependable and can be scrutinised for accuracy and consistency, the researcher must ensure categories of study and items within instruments are “meaningful to participants, reflect the way participants experience reality and are actually supported by the data” (Burns, 2000, p.419)

In naturalistic studies such as case studies the data gathered should be scrutinised for accuracy. Robson et al., (2001) argued that data obtained in research be checked for consistency with participants using different methodologies, for example, that surveys be followed up with open ended questions (p.72).

### **Triangulation**

In the design of research an investigator needs to consider validity of the design. Internal validity is concerned with the question of how well the findings match reality, however, Burns (2000) argued that in a case study it is the “participant’s notion or construction of reality which is important” (p.476). Therefore, the researcher must adopt the use of a variety of strategies to establish internal validity of a study. Robson et al., (2001) contended that there is a need to effectively address the need for cross validation of data through the use of a variety of tools. The use of a single method of data collection or research may lead to reinforcement of a predisposition or distortion of the reality being investigated, Robson et al., (2001) suggested that the method of triangulation can be used to gather a variety of data around the same instance through the researcher’s use of “different methodological approaches” (p.71). Burns (2000) advised that use of a variety of data gathering methods can assist the researcher to

fully map or describe the richness and complexity of the phenomena being investigated (p.419).

External validity is established if the study's findings are generalisable to a broader population, however, when considering case studies Burns (2000) questioned if external validity is of great importance, as the case study of a bounded system focuses on the "characteristics of a particular case" (p.476).

In this study the multiple methods used were questionnaires of OHS practitioners, document analysis of policy and semi-structured interviews of managers, these methods assisted in the cross-validation of the research data.

### **Summary**

This chapter discussed the methodology adopted to undertake the study, this methodology included the following elements: permission to conduct the study; research design; defining the population; data gathering instruments selected for the study; design of data gathering instruments; trialling; administration of data gathering instruments; data analysis, validity, reliability, dependability, and triangulation. The next chapter discusses the results of the research.