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Graduate Nurse Transition Programs in Western Australia: A Comparative Study of their Percieved Efficacy

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CHAPTER 3: METHODOLOGY

3.1 Design

According to Creswell & Plano Clark (2007) there are three distinct procedures for mixed methodology research. The timing and the sequencing of data mixing determines the method used. Designs used within mixed methods research are the *Embedded Design*, where one data set takes precedence, and the other data type provides a secondary, supportive role within the study approach; the *Exploratory Design* where the qualitative data is used to inform the consequent needs of data type and collection for the remainder of the research study; and the *Triangulation Design*, the design chosen for the current research. Merging or converging data at either or both analysis, or during interpretation, is characteristic of the Triangulation Design. As the current research collected both quantitative and qualitative data within the one data study instrument, and merged and converted the data during the analysis and interpretation, the Triangulation Design seemed the most obvious choice.

3.1.1 The Triangulation Design

The Triangulation Design allows the researcher to acquire data that is, in essence, diverse and yet supports and strengthens the analysis and interpretation of findings to provide the best answer to the research questions. As described by Creswell & Plano Clark (2007) "this design is used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data" (p. 26).

The use of a single instrument, the survey questionnaire, provided the bulk of the research data in both quantitative and qualitative formats, thus suiting the choice

of the Triangulation Design framework. Additionally, comparison of the quantitative and qualitative responses between the UWA (2000) and current research, and verification of data consistency within the present study, required the use of an instrument similar to that of the original UWA (2000) study. Merging of the two data sets occurred during the interpretation of data and included transformation of qualitative results to quantitative data, which facilitated the demonstration of the relationship of the two data types. Figure 3.1, adapted from Creswell & Plano Clark (2007, p. 63), demonstrates the mixing of quantitative and qualitative data at the various stages applicable to this research, and indicates the stage of transforming qualitative data to quantitative. The purpose of reducing data in this way supports integration and comparison of data. This was employed in the current research by quantifying the qualitative data, primarily to demonstrate the most common themes that applied to the responses from the open ended questions. The capitalised abbreviations indicate emphasis on that data type, for example, QUAN signifies that the quantitative data prevail at that stage of the research. In Figure 3.1 the data types are given equal status at the collection and analysis stages, as both had an equivalent influence on the consequent interpretation.

Figure 3.1. ***Triangulation Design: Data Transformation Model***

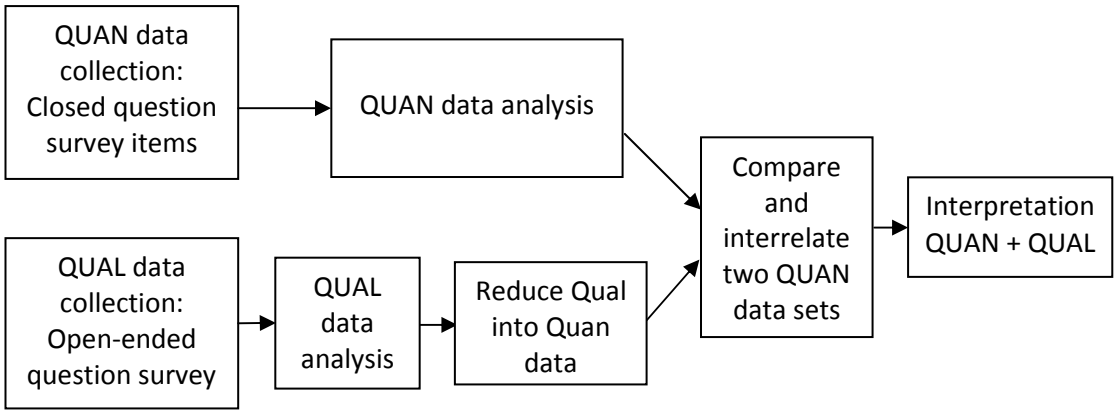

Figure 3.1. Adapted from Creswell & Plano Clark, 2007, p. 63.

3.2 Study Populations

Two study populations were selected for this research. The primary population provided the majority of the data by means of responses to a survey questionnaire. That population consisted of 858 RNs who completed an undergraduate program and registered with the Nurses and Midwives Board of WA (NMBWA) in 2008. The secondary study population consisted of 48 graduate nurse coordinators who were part of the GNC consortium within the WA Health Department. As per the mixed methods framework, this population was used to validate aspects of the primary population responses, and to provide further information related to the graduate nurse transition programs that are offered within WA.

3.2.1 Primary Study Population

Following graduation, all nurse graduates are required to register with the Nurses and Midwives Board of Australia (NMBA) to enable them to practice as a nurse. Prior to the formation of the NMBA in 2010, each Australian state had an

individual registering body, the NMBWA being WA's, and new graduates' details from then are archived by them. The NMBWA recorded initial registrations into a separate database, and this enabled the Board to select the study subjects from that cohort. Discussions had previously been held with the NMBWA to confirm that controlled access to the database was available (R. Lazarus-Gomes, personal communication, May 21, 2007).

The population of 858 was determined by the number of nurses in the NMBWA data base that met the research criteria, that is, RNs who completed an undergraduate program and registered in Division One with the Board in 2008. The rationale for choosing this group was that the majority of new RNs choose to participate in a transition program of some description, most notably a Graduate Nurse Program (GNP) and would have, or have been well on their way to having completed their first transition year at the time of the study. As the current research includes a comparative component, the choice of study population was guided by that used for the UWA (2000) research, which consisted of all RNs who had enrolled in a GNP in 1999. Subsequently, a similar population to the UWA (2000) study was required to ascertain variance between the groups of the GRNs' perceptions of their GNP experiences.

To alert the study population of the impending survey, an introductory letter (see Appendix A) was sent early March 2010, and was followed one week later by the survey questionnaire (Appendix B). This was followed two weeks afterwards by a reminder letter (Appendix C) requesting participants to support the research by completing the questionnaire. A 'return by' date was included on the survey questionnaire and the follow-up letter to encourage timely survey completion and

return. Of the 214 returns, two were from graduate nurses' relatives indicating that the nurse was out of the country and therefore unable to complete the survey within the required time; and eight were marked as '*return to sender',* giving a total of 204 eligible returns, a return rate of 24%. In a study to determine survey response habits among first-year college students, Sax, Gilmartin & Bryant (2003) reported a decline over the past few decades in overall response rates for paper-based surveys to an average rate of 21%. Differences in return rates were also found for gender, with 26.9% of the female subjects responding compared to only 14.3% of the males responding (Sax, et al., 2003). Based on this work, the current study achieved slightly higher than an average return rate. The gender ratios of expected returns in the present study were similar to the Sax, et al. (2003) ratios with 24.6% of possible female respondents and 15.7% of possible male respondents returning the primary survey questionnaire.

In the UWA (2000) study, 375 surveys were mailed out to first year GRNs who had enrolled in a GNP in 1999, with a return rate of 45%. It is surmised that the higher than average return rate was due to that researcher's ability to directly target the study population through the hospital GNP coordinators. A similar approach was not utilised for the current research as the intent was to canvas the entire population of RNs rather than only those participating in a GNP. The number of respondents indicating participation in a formal transitional program in the 2010 research (n = 167) was almost equivalent to the UWA (2000) study (n = 170) and, as such, provided a good basis for comparison of relevant findings from both studies.

3.2.2 Secondary Study Population

Despite preliminary testing of the primary research instrument (described in the following section), when analysing the results of the survey questionnaire it became evident that elements of some questions may have been misinterpreted, such as when asked *the number of graduate nurses working in a unit at the same time as the respondent*. A desire to clarify these data, and to seek further information regarding the structure of formal transition programs, led to a smaller, web-based survey administered to the coordinators of the GNPs, the graduate nurse coordinators (see Appendix E). This is a group of senior nurses, Graduate Coordinators, Staff Development Educators, or Staff Development Nurses, responsible for the recruitment of graduating nurses to the GNPs via the WA Health Department's GNC, and management of the individual organisations' transitional programs. Initial verbal permission, followed by written clarification was gained from the Senior Nursing Officer who, at the time managed the WA Health Department GNC consortium, to access the graduate nurse coordinators via the consortium contact database for administration of the web-based survey (R. Newton, personal communication, May 18, 2011).

The secondary study population was contacted in July 2011 via the WA Health Department's group electronic mail with an introductory letter attachment (Appendix D) and a link to the web-based survey. The initial sample number of 45 was the entire GNC contact list from within the public health system. Following advice from the WA Health Department's GNC program Senior Nursing Officer that a small number of private sector hospitals had recently joined the GNC consortium, additional contact was made with three graduate nurse coordinators from these organisations. The total number contacted provided a population of 48 potential

respondents. Twenty graduate nurse coordinators completed the survey, 18 from the public sector and two from private, providing an overall response rate of 41.7%.

3.3 Data Gathering Instruments

A survey questionnaire is an economical means of collecting data from a large cohort in a relatively short period of time as it allows the results to be collapsed into a manageable format and statistical analysis to be performed. To enable suitable comparison of data between the current research and that conducted in the UWA (2000) study, a survey questionnaire based on the instrument that was used in the original UWA (2000) study was essential. With the proliferation of web-based tools to access potential research subjects the web-based survey instrument is fast becoming a preferred method of delivery (Sax, et al., 2003). However, in a review of web-based versus non-electronic methods of administering surveys, Perkins (2004) reported that while respondents found the web-based instrument more convenient and timely, and with more direct data transmission, the better accessibility, confidentiality and control of the non-electronic version were also found to be important. Perkins (2004) found the non-electronic instrument to be more user-friendly to older cohorts and those lacking computer access, a finding that could be relevant in the current study cohort. Although by virtue of completing tertiary education the primary study population would be experienced in the use of information technology, the considerable proportion of study respondents in the older age-brackets (26% of respondents were aged 40 and over), suggest that many within this cohort of nurses may have felt more comfortable with the paper-based instrument.

For the secondary study instrument, the smaller, and more highly trained sample size, and the easier contact option of using electronic mail meant a web-based survey was a more suitable means of data collection (Perkins, 2004; Sax et al., 2003).

3.3.1 Primary Study Instrument

Edwards, et al. (2002) found survey questionnaire response rates were more likely to increase when a stamped and addressed return envelope was included, and when contact prior to sending out the study instrument was made. The introductory letter was sent out by the NMBWA to the identified population, followed a week later by the survey questionnaire. Calder (1998) suggested response rates of postal survey questionnaires may also be improved by 20 to 30% when reminders were sent following the initial survey distribution. Consequently, a reminder letter was posted out to the study population two weeks following the posting of the survey questionnaire. However, as the returns went directly to the NMBWA it was not possible to monitor what effect the reminder letter may have had on response rates. Moderately higher return rates have also been found with survey questionnaires that were in a booklet format, on coloured paper, were user friendly and had demographic items at the start of the questionnaire (Calder, 1998; Edwards, et al., 2002). Informed by such literature, and guided by feedback from the survey questionnaire test-group (discussed in the following section), these methods were incorporated into the primary research instrument.

Permission was gained from the Office of the Chief Nurse and Midwife to use the UWA (2000) questionnaire as the basis for the current research. The majority of the questions in the study instrument were categorical, requiring nominal responses in relation to age-groups, gender and organisational types, or ordinal responses, for

example, in relation to the levels of support given by relevant personnel; and were supported by open-ended questions to allow for expansion of the data. The questions identified the types of institutions and clinical units in which the graduates have worked; the length of their transitional program; the level and type of support received; and the perceived degree of satisfaction with the program. Questions to determine the GRNs' perception of how the program may have influenced their future career intentions; and additional demographic information, were included to further elucidate data to answer the research questions. These questions were based on more recent research by Evans (2005) and Reeves (2007), both of whom looked into similar areas in relation to GRN transition programs in other Australian states. Feedback from the survey questionnaire test group also guided additional questions.

3.3.1.1 Primary Instrument Testing

Prior to final administration of the primary instrument, the survey questionnaire was tested for content, design, flow and relevance on a small group of RNs, similar to the study sample, but who had no likelihood of being part of the study population as they had registered with the NMBWA in the two years prior to the study population. The test-group was able to confirm the consistency of the questions and assisted with reformulation of those that required more clarity to improve data reliability (Calder, 1998). An example of this process is in the response choices for the question *what level of support did you receive from each of the following during this rotation*? In the UWA (2000) survey, the related question appeared limited in the degree of information it would elicit with only a *yes* or *no* response available to the question: *Do you believe that you always received sufficient support for your responsibilities when you commenced in your ward/unit*? Feedback from the test-group indicated *support* could be given in varying degrees and from

several aspects. The question was therefore expanded to a scale of five possible levels of support from *extensive* to *negligibl*e, and included a *not applicable* choice that allowed for scenarios where the support personnel was not part of the specialty unit. It was apparent from the UWA (2000) data and test group feedback that designated personnel contributed to the GRN support at varying levels. Consequently the question also allowed for individual evaluation of these personnel. The designations included the Program Coordinator, the preceptor, Staff Development Nurse (SDN), Clinical Nurse Manager/ Specialist/ Coordinator (CNM/S/C) and other colleagues within the GRN's allocated unit (Table 3.1).

Table 3.1. *Support Personnel Identified and Response Options Available to GRNs*

Support Component Designations	Ordinal Response Options
Program coordinator	Extensive
Staff development nurse	Very good
Clinical nurse manager/specialist/consultant	Average
Preceptor	Occasional
Ward/unit nursing staff	Negligible
Other (please specify)	Not applicable

3.3.1.2 Survey Questionnaire Format

To maintain comparative data integrity, the UWA (2000) study questions were used verbatim, except where minor formatting modification improved the readability of both the closed and open-ended questions, and some minor adjustments of the available closed-ended responses (Table 3.2). In total, there were 20 closed and 10 open-ended questions in the UWA (2000) study and 28 closed and 20 open-ended questions in the current survey questionnaire.

Table 3.2. *Survey Questionnaire Modifications*

UWA (2000) Questions	2010 Questions	Comment
Please identify the type of health care institution where you are currently employed.	What type of health care organisation are you currently employed in?	Response choices were expanded from 3 to 8 to include contemporary options.
If this is not the same as the health care institution where you began work in 1999, please identify the type of health care institution where you first worked in 1999.	What type of health care organisation did you work in during 2008?	As above.
In the table below, enter the type/s of units in which you worked in 1999, the length of time you spent in each unit and the total number of new graduates working in the unit at the time of your stay.	Each rotation and components were separated out for better response clarity, e.g., Type of Unit; Length of Stay; Average number of graduate nurses in unit; Average hours contracted to work; How long did you work in unit before given a full patient load; What level of support did you receive from the following; What areas were beneficial; What areas were problematic; What caused most stress; Further comment.	In addition to separating out each of the components, and the provision for 5 rotations, the response options for the first 6 questions were closed to enable better control of the data and the final 4 questions were open-ended to provide the respondents with an opportunity to describe their experiences.
What (if any) components of your new graduate program were not beneficial in facilitating your transition to the role of Registered Nurse?	What areas were problematic with this rotation?	In both surveys this question was preceded by one relating to beneficial components. The opposing terminology was used to elicit more pragmatic responses.
The graduate program made me feel more competent in my clinical practice.	How much do you agree that the graduate program made you feel more COMPETENT in your clinical practice?	The initial response elements of *agree* and *disagree* were modified to *mostly agree* and *mostly disagree* with an added category of *unsure* to allow for a more moderate response.

UWA (2000) Questions	2010 Questions	Comment
During your first 12 months as a Registered Nurse, how satisfied were you with the preceptoring that you received?	During the first 12 months as a Registered Nurse, how satisfied were you with the preceptoring/support you received?	Again, the response choices were modified from *satisfied* and *dissatisfied* to *mostly satisfied* and *mostly dissatisfied* with an added category of *mixed experience* to reflect more accurately the novice nurse's experience.
On average, how long did you work in each ward/unit before you were given the responsibility of a full client/patient load?	How long did you work in the unit before you were given the responsibility of a full patient/client load in this rotation?	As supernumerary time often varies from rotation to rotation and specialty to specialty, this question was included in the section relating to individual rotations.
Do you believe that you were well prepared for the responsibility of night duty?	How well do you believe you were prepared for the responsibility of night duty?	The UWA (2000) response choices of *yes* and *no* were modified to *well prepared; somewhat prepared; poorly prepared; no preparation* to enable a broader response context.
Do you believe that your university education prepared you appropriately for your role as a newly Registered Nurse?	How much do you agree your university education prepared you adequately for your role as a registered nurse?	Again, the UWA (2000) response choices of *yes* and *no* were modified to *strongly agree; mostly agree; unsure; mostly disagree;* and *strongly disagree* to enable a broader response context.

Following discussion with the survey questionnaire test-group, it was felt that the option of recording experiences for each individual specialty rotation should be provided as the graduate's experiences may differ between the different specialties. A specialty rotation is defined as the allocation for a period of time to a clinical area pertaining to a particular specialty, such as surgical, medical, mental health, or critical care. Depending on the number of specialty rotations within a program,

respondents to the 2010 survey had the option of responding to an additional 20 closed and 16 open-ended questions.

Additional components were included in the 2010 survey questionnaire to elicit information relating to the GRNs' perceptions of GNP transition efficacy and future career intentions, and consisted predominately of questions related to demographic information and career intentions (Table 3.3).

Table 3.3. ***Additional Survey Questions in 2010 Instrument***

Additional Question	Inclusion Rationale
Gender	In an endeavour to increase the pool of potential nurses, much advertising is aimed specifically towards males. Knowledge of the gender ratio may be indicative of marketing effectiveness.
Age	As ageing is considered to be a major cause of the current nursing workforce shortfall it is useful to map the age categories of the future workforce.
Health care experience prior to graduation	Some nursing literature suggests prior healthcare experience may ease the transition process, or influence the graduate RN's experiences.
At which university did you complete your undergraduate program?	Each university has variations in program structure, such as length of clinical practice placements. Correlation with responses may show how these differences impact upon their perceived experiences.
What month and year did you commence this program?	Some organisations offer various program start dates to cater for different graduation times.
Have you completed this program?	To determine the dropout rate from transition programs.
If no, do you intend to complete it?	
What month and year did you (or do you expect to) complete this program?	To determine program length.
How many hours were you contracted to work per week (on average) in this rotation?	There is a reported trend in the literature of the 'X' and 'Y' generations preferring to work less hours which has the potential to impact on overall recruitment hours in terms of full-time equivalents.
What caused the most stress for you in this rotation?	This was in addition to 'benefits' and problems' as it was considered to be a separate concern.
Do you have any other comment you would like to make about this rotation?	An opportunity was provided for comment at the end of each rotation to allow for expression of variances in experiences.
Please indicate below your career pathways/intentions following the program:	The options given related to working in an area the GRN experienced during a specialty rotation, same or different organisation, and was aimed at answering the related research question.
Please comment on how you feel your graduate year experiences have influenced your choices above:	Related to the previous item.

Additional Question	Inclusion Rationale
Where do you see yourself professionally in 5 years time?	As above, this question was aimed at answering the related research question.
Were you seeking a permanent contract at the start of your employment as a Registered Nurse? Did an offer of a permanent contract influence your choice of organisation for initial employment as a Registered Nurse?	As a recruitment strategy, some organisations offered permanent contracts as opposed to fixed term contracts. Following the Global Financial Crisis, many reverted to offering only fixed term contracts. The type of contract may affect selection of organisation for first preference when applying through Graduate Nurse Connect.

The cover page of the questionnaire contained further clarification of the purpose of the research. Additionally, the nurse was asked to make contact should the respondent be willing to participate in a focus group, if the need arose, to further clarify data at a later stage. Eight respondents agreed to assist, however, the decision to clarify doubtful data through contact with the graduate nurse coordinators negated the need to enlist these respondents any further.

3.3.2 Secondary Study Instrument

The secondary instrument, a brief web-based survey questionnaire, was deemed necessary to clarify minor discrepancies found during the initial analysis stage in the data from the primary survey questionnaire. The purpose was to clarify the responses given by the GRNs where a small proportion of respondents gave a value that appeared extreme and did not make sense; for example, when asked to indicate the *average number of graduate nurses in the unit during your stay including yourself*, figures of up to 30 were given. As this would constitute unsafe and undesirable staffing mixes it would appear the GRNs may have misunderstood the question.

Conducted in the latter stages of the research, the instrument consisted of a simple 10-question, web-based survey utilising a basic SurveyMonkey © platform. In addition to clarifying the apparently erroneous responses from the primary survey questionnaire, the opportunity was taken to gather data regarding the guidelines that each organisation used to guide their transition programs, as well as to request information relating to changes and innovations they had made, or planned to make to their current programs. This information would then be used determine if there were any evidence of related impacts upon the graduate nurses' experiences.

The survey consisted of two closed questions related to demographic data; five questions aimed at clarifying the minor discrepancies that were found in the primary survey questionnaire data; and three open-ended questions to elicit information related to their organisation's GNP guidelines. Given that insufficient support is often a common theme among transitional reports (Johnstone, et al., 2008) a question also asked what supports, in terms of *Graduate Nurse Coordinators, Educators, Staff Development Nurses, Clinical Coaches, Preceptors,* and *Mentors* were available to the GRN within the graduate nurse coordinator's organisation. The additional data gained from this secondary survey supported the data already gleaned from the GRNs and aided in further triangulating the research findings (Johnson & Onwuegbuzie, 2011).

3.4 Procedure

The primary instrument survey questionnaire met the criteria for a mixed method Triangulation Design in that it simultaneously collected both quantitative and qualitative data from the same sample, providing similar amounts of data for analysis and interpretation. As described by Creswell & Plano Clark (2007), "The

Triangulation Design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same timeframes and with equal weight" (pp. 62-64).

3.4.1 Primary Survey Data Procedures

The final formatted survey questionnaire was sent to the printers who provided a booklet style document with perforated page edges. These allowed for separation of the pages when returned and consequent scanning to the Remark Office (Version 7) Optical Mark Recognition (OMR®) software. The finished product was delivered to the NMBWA for posting to the survey population.

Prior to scanning the postal survey questionnaire data into the OMR® system, a template was developed to enable recognition of the response marks and allocation of the scanned data within the designated categories.

Eligible returns from the primary survey questionnaire forms were manually and sequentially numbered to provide an identity for reference purposes when cross-referencing data and wherever clarity was uncertain. The perforated spine of the questionnaire was then removed to enable scanning and each questionnaire individually separated and secured in sequence. Due to some incompatibility issues with the instrument design and the scanning software, close monitoring was required during data scanning to pick up double feeds, missing pages, or out of order pages. These issues resulted in a large number of data requiring manual entry. Throughout the process, all data were randomly and routinely checked for final accuracy. The text entries were visible on the computer screen and able to be entered manually into the correlating data cells for subsequent theming. Where the data were difficult to

read electronically, the original hard copy was referred to. Once scanning into the OMR software was completed satisfactorily, the individual questionnaires were fastened to ensure each respondent's data were kept together and then securely stored in the event further referencing to the hard copies was required.

Quantitative demographic data were cross-tabulated and presented as percentages in frequency distributions to illustrate age-groups; industry types; undergraduate university attendance; and prior employment. Comparative data involved levels of perceived confidence and competency that the GRNs felt they had gained from a GNP. These were also demonstrated using frequency distribution tables to provide comparison with the original UWA (2000) study. The additional demographic data collection provided an opportunity to link the GRN categories with possible influences upon their reported experiences.

For each rotation a mix of closed and open-ended questions followed related to the *perceived benefits, problems, cause of most stress* and *further comment*. As per the Triangulation Design transformation model (Creswell & Plano Clark, 2007), the qualitative data was transformed to quantitative to allow integration and mixing of data, and reported in its textual format in the Discussion Chapter. Quantification of the qualitative data was achieved through applying themes to the commonly reported experiences as described further in the Data Analysis section.

3.4.2 Secondary Survey Data Procedures

The secondary survey of the graduate nurse coordinators was web-based, and as such, the data were available electronically and easily exported to a Microsoft Office Excel 2007 spreadsheet for analysis. Data that were used to clarify

discrepancies from the primary survey questionnaire responses were incorporated into the primary data collection. The data from the secondary survey related to specialty rotation length was able to validate that obtained in the primary survey. However, the data from the graduate nurse coordinators related to the number of graduates in a unit at the same time as the GRN respondents, confirmed that the data were, in fact, not an accurate representation.

There was no transformation of the secondary survey qualitative data as doing so would not have added any value to the interpretation of results. These data were obtained only to clarify components of the primary survey data and to provide supplementary information (Appendix F). All quantitative data were presented as either frequency distributions or table formats and, where required, triangulated with the primary data.

3.4.3 Data Triangulation Procedures

To inform the associations between the variables, and in accordance with mixed methods Triangulation Design, the quantitative and qualitative data from the primary survey questionnaire were analysed separately, and then merged by transforming the qualitative data to quantitative (Creswell & Plano Clark, 2007). Cross-tabulation between data groups were performed to establish what relationships existed between variables, for example, the length of specialty rotations and the degree of satisfaction with the transitional programs. Links between demographic, employing organisation type, undergraduate educational institution, and employment outcomes and intentions were also examined for trends, as well as possible influences upon current and future nursing career choices. These analyses have allowed for structural and functional theorisation of relationships (Kamoche, Pang &

Wong, 2011) between variables and comparisons with the UWA (2000) data as shown in the Findings Chapter, and considered further in the Discussion chapter. Matrices that were presented were predominately in relation to demographic data and the quantified themes as is demonstrated by the example in Table 3.4.

Table 3.4. ***Percentage of Respondent Age Groups for Individual University***

University	<21-yrs	22-29	30-39	40-49	>50
Uni A (n=68)	0.0%	53.9%	22.1%	16.2%	8.8%
Uni B (n=99)	5.0%	46.5%	20.2%	19.2%	11.0%
Uni C (n=24)	20.8%	41.7%	33.3%	0.0%	4.2%
Uni D (n=10)	0.0%	30.0%	20.0%	20.0%	30.0%

3.5 Data Analysis

Data analysis in mixed methods research is conducted by means of the most suitable method to answer the research questions (Creswell & Plano Clark, 2007). While appropriate methods are used for each type of data, for example, quantitative methods for quantitative data, mixed methods research includes the option of transforming data to the opposing mode data to provide more options for data interpretation and presentation, such as quantifying qualitative. In the convention of mixed methods Triangulation Design, qualitative data transformation was employed in this research to provide comparative and correlational descriptions of the findings, particularly in relation to the GRNs' perceptions of their GNP experiences.

3.5.1 Primary Survey Data Analysis

While a large component of the qualitative data has been tabled in its raw format (see Discussion Chapter), it was also categorised into themes, as described

below, to provide more options for data correlation and comparison. The quantitative data were presented mainly as frequencies and percentages of occurrence, for example, the percentage of GRNs for each age bracket and the type of organisation they worked within. This quantification of the qualitative data by categorising into themes, and the validation of one type of data with the other, is typical of the Triangulation Design (Teddlie & Tashakkori, 2009).

3.5.1.1 Data Theming

According to Miles and Huberman (1994), data theming is one method of reducing qualitative data into more manageable components for analysis and presentation. In pure qualitative form, the reduction comprises sequential organisation of common patterns of data into groups until the condensed format provides a suitable display of relevant findings. In the current research, the majority of the qualitative data were themed using frequencies of response concepts for some sections, and degrees of positive or negative expressions for others, depending on how the data would be best represented.

On satisfactory completion of data entry for the primary survey questionnaire, the entire database was exported to a Microsoft Office Excel 2007 spreadsheet to enable further manipulation of the data and the thematic coding of the textual entries. Themes were developed according to subject, for example, comments related to the GRNs not feeling adequately supported in their transition were grouped under *lack of support* or items of workload causing stress were themed as *workload*. Following the initial theme allocation, and to enable filtering of the data and correlation amongst associated variables, the themes were applied to the data in a separate field. Table 3.5 shows the set of themes used for categorising *perceived causes of stress*.

Table 3.5. ***Themes Used to Code First Rotation Perceived Causes of Stress***

Themes	Themes
Nil (no causes of stress reported)	Poor Communication
Workload	Busyness of the Unit
Lack of Support	Bullying
Time Management	Poor Skill Mix of Staff
Lack of Knowledge	Work Life Balance

3.5.1.2 Primary Data Statistical Analysis

The OMR software used for the primary survey questionnaire provided basic reports for selected variables such as item analyses and cross-tabulations. Further statistical analysis was possible using the Microsoft Office Excel 2007 functionalities for percentages and frequencies. The predominant statistics required for comparison with the UWA (2000) data and additional reporting were item analyses, frequency distributions, and categorical and numerical values. The quantified qualitative data was used for comparative and trend analysis in relation to both, the UWA (2000) and the demographic data of the current research, predominately with the frequency of particular responses standardised in percentage terms (Calder, 1998).

3.5.2 Secondary Survey Data Analysis

Data from the secondary web-based survey were exported wholly from the web-based report to a Microsoft Office Excel spreadsheet for analysis and interpretation. Again, each entry was assigned an individual identification number to enable cross-referencing and tracking of data.

Quantitative data from the secondary survey of the graduate nurse coordinators were similarly presented as item analyses, frequency distributions, and categorical

and numerical values, with the qualitative data presented purely in table format to demonstrate the various textual feedback provided from the respondents.

The secondary survey data provided validation of some elements of the primary data and supported various assumptions made in relation to the GRNs' perceived experiences pertaining to program structure and support provision.

3.5.3 Validity and Credibility

Whilst postal survey questionnaires may be limited in respect to return rates and internal validity (due to reduced control over the investigation), the ability for the sample to be more representative of the target population maximises external validity (Calder, 1998). The return rate for the primary survey questionnaire of 24% is considered reasonable, implying a satisfactory degree of external validity.

Creswell, and Plano Clark (2007), suggest validity threats to concurrent data may occur when sample sizes for the quantitative and qualitative collection are unequal or when contradictory findings are not followed up. Both these concerns have been addressed in the current study. The first, in having the quantitative and qualitative data collection within the same instrument; and the second, by administering the smaller, web-based survey of the graduate nurse coordinators to clarify what appeared to be confounding data in relation to a small number of responses from the primary survey questionnaire.

3.5.4 Ethical Considerations

Ethics clearance for this research was gained from the University of Notre Dame, Australia's Human Research Ethics Committee in December 2009. The

application for clearance contained no contentious issues and the research was consequently considered low risk from an ethical point of view.

3.5.4.1 Anonymity

The primary survey questionnaires were distributed and receipted by the NMBWA so anonymity was preserved. Return envelopes had no identifying information on them to link a respondent to the data. Individual returned survey forms were identified by the application of sequential numbers to allow follow up of any unclear data by referring to the original copy. Anonymity was assured in all correspondence with the study participants. Answers to questions pertaining to workplace organisations in the survey questionnaire were regional and graded, for example, *tertiary, rural,* and *mental health,* to avoid identification of individual organisations. Not only would this information have not been useful to the overall research, it is possible response bias could have been introduced by influencing the way respondents answered should they feel there may have been some repercussion were they to provide feedback that may have been deemed negative. University names were de-identified for reporting purposes.

Responders to the secondary web-based survey of the graduate nurse coordinators were asked to indicate the type of organisation they belonged to for purposes of comparison between metropolitan, rural, private, tertiary and secondary facilities. As there were no identifying elements of the survey responders in the data screen, anonymity of the individual was maintained. However, a small number did name their establishment within the textual responses and these were de-identified for presentation purposes.

3.5.4.2 Informed Consent

The RN group providing the pilot testing of the primary survey questionnaire were given a comprehensive information letter describing the purpose, aims and objectives of the research and the purpose of their contribution prior to participation and were required to sign a written consent form ensuring confidentiality of any personal information gained in the session (Punch, 2006).

Participants in the primary survey questionnaire study were provided with a comprehensive explanation of the purpose of the research, and the aims and objectives were presented in the introductory letter (Appendix A). An invitation to be notified of associated publications was provided, as was an option to nominate to be involved in focus group interviews should they be deemed necessary. Return of the completed Survey Questionnaire signified implied consent.

The participants of the second web-based survey of the graduate nurse coordinators were provided with an information sheet as an attachment to the electronic mail sent via the WA Health Department system, describing the research and the value of their participation (Appendix D). The email itself contained a further description of the benefit that their assistance would contribute to the research and to Western Australian transitional programs.

3.5.4.3 Data Security

As recommended by the National Health and Medical Research Council, ownership of all data and findings remains the property of the researcher, and is secured at all times at the researcher's home address, in a secure room used only for study purposes. All electronic data has secure copies held at the School of Nursing, the University of Notre Dame, Australia, Fremantle Campus, and all the electronic

files are password protected. Data and findings in their entirety will be held for the recommended minimum of five years and, when required, will be destroyed by either shredding of the paper content or deletion of electronic files. The university maintains a copy of the data and completed theses for research purposes only.

3.6 Summary

This chapter has described how a mixed method approach incorporating triangulation of the data was believed to be the most suited to answering the research questions and to allow comparison with the UWA (2000) study; efficacy of nursing transition programs; and predictive effects the perceptions of the graduate nurse have on nursing career longevity. Development of the primary research instrument, based on the UWA (2000) survey, and the rationale for modifications and enhancements that were informed by instrument testing and similar literature, have also been discussed, as has the rationale for employing a further, smaller study of the graduate nurse coordinators. Similarly, the research study populations and instruments, procedural matters and issues encountered during these processes have been considered. The methods of data analysis for both the primary and the secondary studies have been described, including the processes utilised to mix and triangulate the findings. Ethical considerations regarding anonymity and participant consent have been also addressed.

The following chapter presents the findings from the graduate nurse survey questionnaire and the graduate nurse coordinator web-based survey in the convention of mixed methods triangulation design.