Factors Impacting On

Bachelor of Nursing Students’

Clinical & Academic Performance and Progression

Victoria Pitt
RN,MNur(Research), GDipNurs(Palliative Care), GCertPTT,
DipAppSc(Nursing)

A thesis submitted to fulfil the requirements of a
Doctorate of Philosophy (PhD) Degree
University of Newcastle
December 2013
Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository, subject to the provisions of the Copyright Act 1968.

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I hereby certify that this thesis is submitted in the form of a series of published papers of which I am a joint author. I have included as part of the thesis a written statement from each co-author; and endorsed by the Faculty Assistant Dean (Research Training), attesting to my contribution to the joint publications. I have renumbered sections of submitted or published papers in order to generate a consistent presentation in the thesis.

Victoria Pitt

David Powis
Acknowledgements

This study would not have been completed without the support of many people. To acknowledge them all would constitute another chapter but I would like to take this opportunity to acknowledge a few.

Firstly, I would like to thank all the students who participated in this study, gave their time and allowed access to their records. I hope that your contribution will benefit future students.

I also thank the peer reviewers of each publication included in this thesis. Their comments not only strengthened the papers, but provided me with insights that I will continue to use as my academic career develops.

I would like to acknowledge the inspiration, encouragement and constructive feedback that I received from my supervisors, Professor David Powis, Professor Tracy Levett-Jones and Dr Sharyn Hunter.

I would also like to thank my husband Darrin, and children Angelique and Kurtis, who walked alongside me for every step of this journey. Lastly, I would like to thank my mother whose interest in the stories behind the data ensured I never lost sight of the people behind the numbers.

This thesis is dedicated to my father who always believed in me.
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Victoria Pitt
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Publication two

Publication three

Publication four

Publication five

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Pitt, V., Powis, D., Levett-Jones, T., & Hunter, S. (Submitted for publication).

Nursing students’ personal qualities: A descriptive study. Nurse Education Today

Victoria Pitt  David Powis  Tracy Levett-Jones  Sharyn Hunter
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Hunter, S., Pitt, V., Croce, N., & Roche, J. (In press). Critical thinking skills of
undergraduate nursing students: Description and demographic predictors.
Nurse Education Today (0), doi: 10.1016/j.nedt.2013.08.005

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We, David Powis, Tracy Levett-Jones and Sharyn Hunter attest that Research
Higher Degree candidate Victoria Pitt was the principal contributor to the
conception, design, writing and revision of the paper/publication:
The influence of critical thinking skills on performance and progression in a
pre-registration nursing program Nurse Education Today

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List of Conference Presentations

Abstracts provided in Appendix A


Glossary of Terms

The following abbreviations and conventions have been used throughout this thesis.

<table>
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<tr>
<th>Abbreviation</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIN</td>
<td>Assistant in Nursing</td>
<td>Working as an assistant to nurse position without certificate qualification</td>
</tr>
<tr>
<td>AIN III</td>
<td>Assistant in Nursing</td>
<td>A level 3 certificate gained through a Technical and Further Education course</td>
</tr>
<tr>
<td>BN</td>
<td>Bachelor of Nursing</td>
<td>A three year full time equivalent nursing pre-registration program</td>
</tr>
</tbody>
</table>
| Course Aggregate mark | Measure of Weighted Average Mark (WAM) for Nursing courses with theory focus. Calculated by - \[
\frac{\sum(MVW)}{\sum(VW)}
\]
| GPA          | Grade point average | Calculated by Total grade points/number of course units taken (e.g. Grade point total of 100/20 (20 Units taken) = 5 GPA) |
## Glossary of Statistical Symbols and Terms

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance. A test of the statistical significance of the differences among the mean scores of two or more groups on one or more variables.</td>
<td></td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>chi-square test</td>
<td>Used to test if there are differences in a table by comparing the observed versus the expected values.</td>
</tr>
<tr>
<td>$r_p$</td>
<td>Correlation statistic</td>
<td>A statistic used to measure the level of association between two variables. Pearson's Product Moment Correlation is one of these statistics.</td>
</tr>
<tr>
<td>$r_s$</td>
<td>Correlation statistic</td>
<td>A statistic used to measure the level of association between two variables. Spearman's Rank Order Correlation is one of these statistics.</td>
</tr>
<tr>
<td>$df$</td>
<td>Degrees of freedom</td>
<td>Value associated with a statistical test that is used to determine the level of significance; this value is dependent on the number of cases and/or number of samples utilised in the statistical test.</td>
</tr>
<tr>
<td>$M$</td>
<td>mean</td>
<td>The average of all scores reported in the sample or category.</td>
</tr>
<tr>
<td>$U$</td>
<td>Mann Whitney U test</td>
<td>Nonparametric alternative statistical test for the t-test – This test is used to determine the difference between two sample medians is significantly different.</td>
</tr>
<tr>
<td>$p$</td>
<td>probability value</td>
<td>The probability that a statistical result would occur by chance if a NULL hypothesis was true. A probability value less that .05 (i.e., $p &lt; .05$) would suggest that the probability of obtaining observed scores would occur fewer than 5 out of 100 times by chance. Therefore, when probability values are less than .05, observed scores can be described as “significantly different” since there is a low likelihood of obtaining these observed scores by chance alone.</td>
</tr>
<tr>
<td>$N$</td>
<td>sample size</td>
<td>Total number in population sample</td>
</tr>
<tr>
<td>$n$</td>
<td>sub sample size</td>
<td>Total number in sample</td>
</tr>
<tr>
<td>$SD$</td>
<td>standard deviation</td>
<td>A measure of the spread/ dispersion of scores around the mean score.</td>
</tr>
<tr>
<td>$t$</td>
<td>t-test statistic</td>
<td>A statistical test used to determine whether the difference between two sample means is significantly different. Two variations of this test have been utilised in this thesis: 1. Independent Samples t-test: compares the mean scores on a single variable from two different samples. 2. Paired Samples t-test: compares the mean difference of scores on a single sample.</td>
</tr>
<tr>
<td>WALD</td>
<td>Wald test</td>
<td>Used in logistic regression to determine how significant a variable is in a statistical model. Values $&lt; 0.05$ indicate variables that contribute significantly to the predictive validity of the model.</td>
</tr>
</tbody>
</table>
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Abstract

Nursing is experiencing an international workforce shortage driven in part by an aging population and escalating health care demand. One strategy to combat this workforce shortage has been to increase the number of students entering pre-registration nursing programs. However, the effectiveness of this strategy is dependent on the extent to which nursing students successfully progress to graduation. Driven by the need to improve student success in nursing programs, this longitudinal, descriptive correlational study conducted in an Australian university, sought to examine the factors that influence Bachelor of Nursing (BN) students’ ($n = 139$) academic performance, clinical performance and progression.

Factors identified as significantly influencing students’ overall academic performance included: first year academic performance, critical thinking skills, personal qualities such as aloofness, involvement with others and self-control, part-time enrolment and class attendance. Only the personal quality traits (self) confidence and to a lesser extent resilience were found to significantly predict students’ clinical performance. Student progress was significantly influenced by the following factors: first year academic performance, critical thinking ability, entry pathway, resilience, part-time enrolment and engagement (with the program).

Study results indicate the need for structured support services for first year students, students experiencing course failure and those returning from a leave of absence. Consideration should also be given to the inclusion of pre-existing bioscience knowledge, critical thinking skill and personal qualities measures into student selection procedures. It is considered that these strategies will have a positive influence on student success.