Validation of a post-entry English language assessment for commencing undergraduate nursing students

Presenter

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Disclosure

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Learning Objectives

- Identify a post-entry assessment strategy that a nursing program can use to assess the English language and literacy skills of commencing undergraduate students.
- Examine the validity of a diagnostic tool, the PELA, used in teaching and learning to identify students at risk of underperformance in nursing program studies.

Statement: There is no conflict of interest to declare. This presentation is free from commercial bias or interests.
Context

- Background of UWS nursing students
- Identifying and supporting commencing nursing students requiring literacy and language support (Glew, 2013)
- Implementation of literacy and language screening
- Validation of a post-entry English language assessment (PELA) writing task
Aim and Background for the Study

Aim

- evaluate a PELA screening tool as a predictor of academic performance

Background

- nursing students with English as an additional language (EAL) may underperform academically (Glew, 2013; Salamonson et al., 2013)

- PELA - used in literacy screening but its predictive validity to identify students at risk of academic underperformance was not known
Study Setting - University of Western Sydney

The Western Sydney Region
- 1.9 million people
- 9% of Australia’s population
- 150 cultural/ethnic groups
- Australia’s 3rd largest economy
- 60% of Sydney's growth by 2026
- 9000 km²

The University
- 40,000 students in 2012
- 50,000 students by 2020
  - 90% local
  - 10% international
- 6 campuses
  (University of Western Sydney, 2012b)
Greater Western Sydney

UWS in greater Western Sydney provides higher education in a region with significant challenges:

- many areas suffer economic and social disadvantage
- a large Indigenous community
- low participation in higher education
- rapid growth in population not matched by infrastructure investment
- a very diverse multicultural community with:
  - 150 cultural/ethnic groups
  - almost one third of residents born overseas
  - 50% first or second generation Australians

(University of Western Sydney, 2012a)
Demographics of Bachelor of Nursing students

74 different countries of birth

2011 Pathway

Australia, 42%
Southern & Central Asia, 14%
South-East Asia, 13%
North-East Asia, 10%
Oceania (excl Aust), 6%
Americas, 2%
Middle East, 3%
Southern & Eastern Europe, 1%
North-West Europe, 1%
Africa, 9%
Unknown, 11%
School, 36%
TAFE, 15%
Work, 24%
Other, 14%
Unknown, 11%

(Salamonson & Koch, 2012) (Lombardo & Salamonson, 2012)
Demographics of Bachelor of Nursing students

International/Domestic
- Domestic: 82%
- International: 18%

First in Family
- No: 58%
- Yes: 34%
- Unknown: 8%

(Lombardo & Salamonson, 2012)
Study Participants and Method

The participants

- commencing undergraduate BN students - 2010 to 2013 (four cohorts over a 4 year period)
- completed a post-entry English language assessment (PELA) writing task and English language acculturation scale (ELAS)
- completed a nursing unit with a focus on literacy skills
- consented to linking data and academic grades

Prospective survey design

- examined the relationship between levels in the PELA writing task and ELAS, and socio-demographic information and academic performance at the end of first semester
PELA Screening

The PELA

- 20 minute writing task
- graded for competency using a language literacy criterion
- **Level 1 (proficient)** - competent in writing
- **Level 2 (borderline)** - requiring some assistance with language and literacy in order to succeed in their studies
- **Level 3 (poor, and requiring additional support)** - at risk of not having adequate writing skills for university studies (Barthel, 2009)
ELAS Screening

The ELAS

- a validated self-report tool - questions on English and other languages in which to speak, read and think
- 1 to 5 rating on English language usage
- ‘1’ - use of only non-English language
- ‘2’ - use of non-English more than English
- ‘3’ - use of both non-English and English
- ‘4’ - use of English more than non-English
- ‘5’ - use of only English
- aggregate score range, 5 to 25 (Salamonson et al., 2013)

Socio-demographic information

- Country of birth, age and gender, residency status, length of stay in Australia, number of hours worked per week
## ELAS Questions and Scale

<table>
<thead>
<tr>
<th></th>
<th>Questions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In general, what language(s) do you speak?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>In general, what language(s) do you read?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>What language(s) do you usually speak at home?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>In which language(s) do you usually think?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>What language(s) do you usually speak with your friends?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

(Salamonson et al., 2013)
## Results: Characteristics of participants (4 years)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, mean (SD) median years (Range: 17 to 69 years)</strong></td>
<td>26.8 (8.7) 24.0</td>
</tr>
<tr>
<td><strong>Sex, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>411 (15.4)</td>
</tr>
<tr>
<td>Female</td>
<td>2258 (84.6)</td>
</tr>
<tr>
<td><strong>Year of commencements, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>639 (23.9)</td>
</tr>
<tr>
<td>2011</td>
<td>645 (24.2)</td>
</tr>
<tr>
<td>2012</td>
<td>776 (29.1)</td>
</tr>
<tr>
<td>2013</td>
<td>609 (22.8)</td>
</tr>
<tr>
<td><strong>Country of birth, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>1323 (49.6)</td>
</tr>
<tr>
<td>Born outside Australia</td>
<td>1346 (50.4)</td>
</tr>
<tr>
<td><strong>Enrolment category, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>2269 (85.0)</td>
</tr>
<tr>
<td>International</td>
<td>400 (15.0)</td>
</tr>
<tr>
<td><strong>Length of stay in Australia, mean (SD) median years</strong></td>
<td></td>
</tr>
<tr>
<td>(Range: 0 to 46)</td>
<td>8.3 (7.8) 6.0</td>
</tr>
<tr>
<td><strong>English language acculturation scale (ELAS) score, mean (SD) median (Range: 6 to 25)</strong></td>
<td>20.5 (5.2) 23.0</td>
</tr>
</tbody>
</table>
Results: Group comparisons - PELA levels by characteristics of participants

- Post-entry language assessment: Level 1 (n=1314)
- Post-entry language assessment: Level 2 (n=769)
- Post-entry language assessment: Level 3 (n=586)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
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<tbody>
<tr>
<td>Gender Female</td>
<td>86.1%</td>
<td>82.6%</td>
<td>84.0%</td>
</tr>
<tr>
<td>Age ≤ 24 years</td>
<td>57.7%</td>
<td>53.7%</td>
<td>43.2%</td>
</tr>
<tr>
<td>Australian-born</td>
<td>70.1%</td>
<td>40.6%</td>
<td>15.4%</td>
</tr>
<tr>
<td>ELAS score ≤ 25</td>
<td>63.9%</td>
<td>33.4%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Domestic students</td>
<td>94.5%</td>
<td>81.3%</td>
<td>68.6%</td>
</tr>
<tr>
<td>Lived in Australia ≤ 6 years</td>
<td>9.5%</td>
<td>3%</td>
<td>13%</td>
</tr>
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</table>

P-values: P < 0.001
Results: Significant predictors of academic performance

High final total mark in first year nursing unit: > 63%

 Level 1 PELA - strongest predictor

 Level 1 PELA - twice as likely to obtain a high final mark (AOR: 1.95, 95% CI: 1.63-2.34), adjusting for older age group, Australian-born status, and having an ELAS score of 25

High Grade Point Average (GPA): > 4.2 (Range 1 to 7)

 Level 1 PELA - significant and independent predictor

 Level 1 PELA - second strongest predictor of obtaining a high GPA (AOR: 1.73, 95% CI: 1.44-2.08), adjusting for age, ELAS score and duration of stay in Australia
Findings

The findings revealed:

- less than two-thirds (63.9%) of the participants were monolingual in the English language with PELA Level 1

- approximately half of the participants had PELA Level 1 (‘proficient’ in writing)

- complexity of socio-demographic group differences (distribution of PELA Levels)

- more than half (56%) with PELA Level 3 were recent arrivals who lived only up to 6 year in Australia

- PELA writing task can indicate the written proficiency of commencing students, this is not captured by the ELAS
Findings: Convergent and predictive validity

The findings provided evidence of:

- convergent validity of the PELA and ELAS - significant and inverse relationship between the PELA levels and ELAS scores ($r=-0.52, p<0.001$)

- predictive validity of PELA levels for academic performance - essay, overall unit mark and GPA at the end of the semester

- PELA Level 1 - the strongest and independent predictor of a high overall mark for the nursing unit

- PELA Level 1 - the second strongest predictor of a high GPA (>4.2)
Limitations

- The findings may not be representative of nursing students at other universities
- The PELA was double-marked but variation in marker consistency can occur
- Language and literacy support was available to all students and some may have used more support, and thus performed better than their counterparts

Recommendation

- A validated PELA as a brief writing task used for screening can identify students requiring language and literacy support at course commencement.
I would like to acknowledge the substantial literacy program development work of Dr Sharon Hillege and her research with the literacy team members on commencing nursing students in the School of Nursing and Midwifery at the University of Western Sydney. This program and research underpins this presentation on the validation of the PELA. Thanks also to the nursing academics, literacy support staff and the Dean of the School, Professor Rhonda Griffiths, whose sustained support of the literacy interventions is invaluable to the nursing program.

Lombardo, L., & Salamonson, Y. (2012). Orientation report, 4642 Bachelor of Nursing. Symposium conducted at the University of Western Sydney, School of Nursing and Midwifery, Sydney, Australia.


Salamonson, Y. & Koch, J. (2012, April). Bachelor of Nursing (4642) & Bachelor of Nursing (Adv) (4648), Students commencing 2012: Report from the first year advisors, progressive report no. 2. Symposium conducted at the University of Western Sydney, School of Nursing and Midwifery, Sydney, Australia.
