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Language support improves oral communication skills of undergraduate nursing students: A 6-month follow-up survey

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ABSTRACT

Background: With the widening of participation in higher education, it is essential in the discipline of nursing that students are able to communicate proficiently to deliver quality patient care. However, undergraduate students can experience significant difficulties with spoken communication critical to professional nursing, which places them 'at risk' of failure during the nursing course.
Objectives: To examine the relationship between students' use of academic literacy support and oral communication skills.
Design: Prospective, correlational survey design.
Setting: A large multi-campus university in Western Sydney, Australia.
Participants: A total of 1699 assessment ratings of first and second year nursing students were completed at both baseline and at the 6-month follow-up in 2015.
Methods: The CLIP index was embedded as an assessment requirement in four clinical skills-based units and assessed at the end of each semester in the first two years of the Bachelor of Nursing program. In this study, first and second year students were assessed in Semester 1 at baseline and also six months later in Semester 2.
Results: From Semester 1 to Semester 2, the mean CLIP scores improved from 15.8 (SD: 3.7) to 17.2 (SD: 3.3) and all four components of the mean CLIP index improved. The smallest improvement was in the area of pronunciation while the lexical component had the greatest improvement. In addition, students who attended an academic literacy consultation or workshop for oral language support were over 1.5 times more likely to achieve an improvement in CLIP score (AOR: 1.58, 95% CI: 1.26 to 1.98).
Conclusion: The CLIP tool can be used to track and monitor students' oral language skills over the course of their study, and identify 'at risk' students requiring additional support through on-campus language support programs.

1. Introduction

For almost two decades, a defining feature of contemporary higher education in counties such as Australia, Canada and the United Kingdom has been a commitment to advancing equity for traditionally under-represented groups (Gale and Parker, 2013). Commonly known as widening participation, increasing access to learning opportunities for a wide cross-section of the population has resulted in a steady increase in students from non-traditional backgrounds including non-school leavers, students who are first-in-family to participate in university education, as well as those from low socioeconomic status (SES) regions and non-English speaking backgrounds (NESB) (Heaslip et al., 2017; Klinger and Murray, 2012; Murray, 2013).

Approved programs of study that lead to qualification as a registered nurse are primarily located within higher education (Heaslip et al., 2017) hence, it is not surprising that the increase in students from non-traditional backgrounds is also reflected in nursing student cohorts (Garone and Van de Craen, 2017). This diversity is particularly evident in universities where students from culturally and linguistically diverse backgrounds (often immigrants) and those from low SES backgrounds are geographically concentrated. In these universities, focused strategies have been implemented to promote inclusive education resulting in

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a significant increase in the proportion of these under-represented groups (King, 2017; Western Sydney University, 2016).

While widening participation is important to ensure equity of access to higher education, it is also important that higher education providers implement strategies to promote student retention and success. To this end, Universities monitor student success which is generally defined as the number of units successfully completed as a percentage of the total number of units attempted (Gale and Parker, 2013). While success rates for some under-represented groups are similar to the general student cohort (e.g. students from regional areas) (Australian Government, 11 September, 2017a), the success rate for students from NESB backgrounds is still lower (85.95%) than that of the general student cohort (87.24%) (Australian Government, 11 September, 2017b).

Given that nursing requires an ability to interact with healthcare professionals and the general public, nursing students must learn to communicate skilfully in diverse environments; however, in the context of widening participation, some nursing students may find it challenging to demonstrate this ability, especially in unfamiliar academic, cultural and clinical settings.

Inadequate oral language proficiency can be problematic in the clinical setting, as it increases the risk for miscommunication (O'Neill, 2011). Verbal communication accounts for a substantial proportion of information exchange between healthcare professionals and as such has been identified as a major contributor to patient safety (Hull, 2016). To practise as a Registered Nurse in English-speaking countries requires applicants to meet a minimum English language proficiency threshold (Australian Nursing and Midwifery Accreditation Council, 2012; College of Registered Nurses of British Columbia, 2017; Nursing and Midwifery Council, 2017; Nursing and Midwifery Board of Australia, 2015). While the nature of higher education necessitates a focus on academic writing skills, universities are obliged to prepare students with the full range of skills required to register successfully. In nursing this includes competence to communicate verbally both conversationally and professionally (Rogan et al., 2006).

According to Cummins' (1979) theory of second language acquisition, there is a distinction between the concrete, conversational language used to accomplish everyday tasks (basic interpersonal communicative skills) and the more abstract, decontextualised language used in academic writing (Cummins, 2008). Conversational fluency can be achieved in a relatively short period of time, and for most students, approximately 2 years of exposure, to achieve conversational English language fluency to a functional level (Cummins, 1999).

The ability to verbally communicate technical, academic knowledge in a comprehensible form is an important prerequisite to becoming a successful nurse (Choi, 2005). This is often difficult to achieve, particularly for students from a culturally and linguistically diverse (CALD) background (Benzie, 2010). While it is helpful for nurses to understand the colloquial speech of patients (Frank, 2000; McKauge et al., 2009), there is an expectation that all graduate nurses are able to understand and articulate medical-related terminology and jargon during their professional interactions (Dahm, 2012). It may be challenging for both native English-speaking and non-native English-speaking nursing students to learn, pronounce, and fluently articulate medical terms and nursing expressions. Consequently, some students may require additional oral communication support during their nursing studies.

2. Background

Differences in perceptions of stressed words, rhythm, and intonation, have resulted in adverse patient outcomes (Crawford et al., 2017; Xu et al., 2010). Thus, students need to demonstrate linguistic competency in all aspects of oral language including fluency, vocabulary, grammar, and pronunciation. Fluency is the ability to engage in a conversation with a natural flow characterised by a normal speed without prolonged pauses or hesitation. This requires coherence, or the capacity to interact with the conversation by initiating, developing, and organizing it into a clear, logical structure (Roca-Varela and Palacios, 2013).

Vocabulary refers to a person's lexical resource, that is, their comprehension of words, phrases, and idiomatic expression. A thorough understanding of vocabulary means not only an ability to paraphrase, but also understand the meanings of idioms, jargon, and colloquialism in dialogue (Roca-Varela and Palacios, 2013; Seedhouse et al., 2014). For nursing students, vocabulary expands beyond textbook terminology to a medical language which includes acronyms, abbreviations, and other expressions that must be explained in different ways among other health professionals and patients (Hull, 2016). As a result, both native English-speaking and NESB students may find it difficult to communicate using this specialised language in a clinical setting.

Grammar includes range and accuracy which refers to the capacity to use complex sentences with subordinate clauses and prepositional phrases, and varying sentence structures to converse in a natural and effective manner while minimising mistakes and misunderstandings by using the appropriate tense (Roca-Varela and Palacios, 2013; Seedhouse et al., 2014).

The final component of oral language is pronunciation, or the ability to speak in a clear and understandable way through the use of tone, rhythm, intonation, and syllable and word stress in sentences (Seedhouse et al., 2014). Together, these elements contribute to the accent of a speaker, which can be an obstacle to comprehensible oral communication. Moreover, first language interference can persist after many years of learning English, especially if there are substantial differences in the structure and pronunciation of the speaker's native language and English (Derakhshan and Karimi, 2015). This can be problematic if it hinders the student's ability to communicate clearly. For instance, if an accent is too strong, the listener may strain to understand the speaker (Seedhouse et al., 2014), and the improper emphasis on a word or phrase may change the meaning and inference of the sentence, leading to situations of error and misunderstanding as previously described (Crawford et al., 2017; Hull, 2016). In order to minimise adverse patient outcomes, mastery of each element of oral language is essential (Iedema and Manidis, 2013).

An effective nursing curriculum demonstrates the ability to transform students into professional nurses who can communicate fluently in various healthcare settings (Choi, 2005; Crawford et al., 2017). There has been much research regarding the success of English-language support programs for nursing students; however, the majority of research has been qualitative (Mikkonen et al., 2016).

Programs that implement role-playing scenarios and oral presentations engage students by building confidence through speaking, vocabulary building, and understanding the appropriate use of colloquialism and medical terminology (Guhde, 2003; Olson, 2012). In addition, some universities have established mentorship programs to promote opportunities for non-native English-speaking students to interact with native English speakers, thereby providing models of spoken English that can help non-native speakers to refine elements of oral language such as pronunciation and fluency, and thus improve proficiency (Benzie, 2010).

In order to understand the progression of oral skill acquisition throughout an educational program, there is a need to develop a brief tool to measure the various components of oral language over time. According to the Cummins (1981) model, Cognitive Academic Language Proficiency (CALP) takes five to seven years to develop. This academic process of learning requires critical thinking in socially decontextualised settings; however, the research is limited as it has only been conducted on children. Little is known about CALP for students studying in higher education who must also learn discipline-specific terminology. A tool that can measure the individual components of oral language skills in a specific field, such as undergraduate nursing studies, has the potential to assess and track student development of oral language proficiency. Such a tool can then monitor the development of students' oral language skills over the course of their study, and identify

'at risk' students requiring additional support through on-campus programs.

3. Methods

3.1. Aim and Design

This study used a prospective, correlational survey design to examine the relationship between students' use of Professional Communication Academic Literacy (PCAL) support and oral communication performance as measured by a **C**oherence, **L**exical, Grammat**i**cal, **P**ronunciation (CLIP) index. PCAL support involved targeted literacy and language support through one-on-one consultations and oral communication skills workshops for groups of students. Specialised tutors with training in teaching English delivered support which focused on developing student confidence and competence in spoken communication for clinical assessments, and on improving speaking proficiency in English as an additional language (EAL). The support included developing speaking skills involving fluency, grammar, pronunciation and use of vocabulary, colloquialism and medical terminology for clinical role-play scenarios and interactions with patients and healthcare staff.

The CLIP index (developed by PG, YS & BE) was embedded as an assessment requirement in four clinical skills-based units and assessed at the end of each semester in the first two years of the Bachelor of Nursing program. In this study, first and second year students were assessed in Semester 1 at baseline and also six months later in Semester 2.

3.1.1. Coherence, Lexical, Grammatical, Pronunciation (CLIP) Index

CLIP is a measure of oral communication competence based on a 4-item index with a descriptor framework for speaker use of: (i) fluency and coherence; (ii) lexical resource; (iii) grammatical range and accuracy; and (iv) pronunciation (Seedhouse et al., 2014). The descriptor framework and 4-item CLIP index were developed from widely available speaking skill descriptors and assessment bands, which have been extensively used in English language testing (Isaacs et al., 2015; Read and Nation, 2006; Seedhouse et al., 2014). Participants were rated on the 5-point CLIP index based on the speaker descriptors (Table 1). The CLIP index 1 = Limited oral communication; 2 = Adequate oral communication; 3 = Good oral communication; 4 = Very good oral communication; 5 = Excellent oral communication. The CLIP was particularly used to identify 'at risk' students with a limited CLIP index of 1 as the descriptors indicated an unsatisfactory level of oral communication skills for use on clinical placement.

3.2. Study Setting and Participants

This study was a sub-project of the university-wide program of research focusing on student transition, retention and success, approved by the University Human Research Ethics Committee (H10338). In this program of research, all commencing students were sent an email to their student email account, informing them about the university-wide program of research. In addition to informing them about the purpose of this research program, they were provided with an opportunity to opt-out so that their de-identified administrative data were not used in this research program. Additional ethics approval was sought for this sub-project to retrieve: i) nursing students' CLIP tool assessment results; and ii) their attendance at PCAL workshops or consultations in the first semester of 2015.

Administrative data of undergraduate first and second year nursing students who did not opt out of this research program, and who were assessed using the embedded CLIP tool in their clinical skills assessments were retrieved. We chose to use administrative data to accurately capture the majority of students who had assessment results using the CLIP tool and their utilisation of the PCAL support service. To ensure identifiable student information were protected, only the chief investigator with expertise and experience in data linkage managed the data merging processes. Following data merge; student ID and name were deleted prior to data analysis.

Data retrieved also included demographic characteristics, enrolment category and attendance at PCAL support consultations or workshops. The study was undertaken at a large multi-campus university in Western Sydney, one of the most culturally and linguistically diverse regions of Australia.

The CLIP index scores were linked to academic grades, enrolment status and use of PCAL support. Data for those students who opted out of the institutional program level research were not included in the analysis.

3.3. Data Analysis

We used the Statistical Package for the Social Sciences (SPSS) and Amos versions 24.0 software (SPSS Inc., Chicago, IL) for data analysis. Factorial validity was examined using exploratory factor analysis (EFA) of CLIP data collected at baseline and confirmatory factor analysis (CFA) of CLIP data collected at the 6-month follow-up. We used principal component analysis to perform the EFA; the scree plot values guided the number of components to be extracted, and component loadings of 0.40 or higher were retained (DeVellis, 2012). Following EFA, CFA of the structure was evaluated using Amos version 24.0. We selected the following fit indices: chi-square, Adjusted Goodness-of-Fit Index (AGFI), Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI). Values of > 0.95 were considered as good fit (Bentler, 1990). As the Root Mean Square Error of Approximation (RMSEA) can have artificially large values with small degrees of freedom as was the case in this study (Kenny et al., 2015), this popular measure of model fit was not selected as one of the fit indices. The internal consistency of the 4-item CLIP was calculated using Cronbach's alpha; 'Cronbach's alpha if item deleted' was also computed to assess the contribution of each item to the overall CLIP.

As both scores were not normally distributed, comparison of baseline and follow-up CLIP scores were analysed using the non-parametric Wilcoxon signed-rank test. Multivariate logistic regression analyses were used to examine for predictors of those who achieved maximum CLIP score (i.e. 20) at baseline, and to examine for predictors of positive change in CLIP scores at 6-month follow-up. These predictor variables were: a) Age (up to 25.5 years versus > 25.5 years); b) Gender (Male versus female); c) Country of birth (Australian-born versus overseas-born); d) First-in-family to study at university (Yes versus No); e) Language spoken at home (English versus other than English); f) Enrolment category (Domestic versus International); and g) Attended PCAL consultation or workshop (Yes versus No). A p value of < 0.05 was considered statistically significant.

4. Results

A total of 1699 assessment ratings were completed at both baseline and the 6-month follow-up representing 85% of the 1999 enrolled students who were eligible to undertake clinical skill assessments at the 6-month follow-up. Table 2 reports the sample characteristics. Nearly one-fifth (19%) of students were males and the average age was 27.6 years (*SD*: 8.4, Range: 18–62). More than half (52%) were born outside Australia, with 49% speaking a language other than English at home. Approximately one-third (34%) attended at least one PCAL consultation or workshop during the period of the study. From Semester 1 to Semester 2, the mean CLIP score improved from 15.8 (SD: 3.7) to 17.2 (SD: 3.3), which was a statistically significant increase (Wilcoxon signed ranks test, $Z = 13.694$, $p < 0.001$).

Table 1
Descriptors of CLIP item ratings.

Criteria	Level 5	Level 4	Level 3	Level 2	Level 1
Fluency and coherence - ability to use clear continuity, rate of speech and link complex ideas and language together to form coherent, connected speech.	Speaks fluently with little repetition, self-correction and hesitation to express complex concepts; and uses coherent well connected language.	Speaks continuously with some repetition, self-correction, and hesitation to search for an expression; and uses a range of connected language.	Speaks at length to avoid silence with some loss of coherence, repetition, self-correction, and hesitation to search for words; and uses mostly connected language.	Maintains a flow of speech but uses repetition, self-correction, or slow speech pace with hesitation to search for words; and uses repetition of phrases to connect language that reduces fluency.	Speech has frequent and noticeable pauses, repetition, and self-correction with a lack of fluency and coherence; and breakdowns in connected language occur with frequent unclear vocabulary and meaning.
Vocabulary (lexical resource) - ability to use a range of vocabulary with precision to express complex meanings and attitudes adequately and appropriately.	Uses an exceptional range of vocabulary and expressions with full flexibility and precision to explain meaning, and express all formal and informal vocabulary and phrases; and accurately communicate using skilfully rephrasing.	Uses a very good range of vocabulary and expressions with flexibly to explain words beyond a single meaning, express formal and informal vocabulary and use words that commonly occur together with occasional inaccuracy; and successfully communicates using rephrasing.	Uses a good range of vocabulary to make meaning clear, with some inaccurate word choices; has some lack of formal and informal words but not enough to cause confusion or misunderstanding in the listener; and communicates by rephrasing to convey meaning.	Uses an adequate range of vocabulary but may lack words for unfamiliar topics using limited flexibility or a narrow understanding of meaning with overuse of informal words and some inaccurate word usage; and communicates by rephrasing with a limited range of words to convey meaning.	Uses vocabulary limited to a familiar topic to convey basic meaning but for unfamiliar topics uses frequently inaccurate word choices with many short responses and long pauses; and communicates with limited rephrasing on unfamiliar topics, and simple vocabulary to convey personal details.
Grammatical range and accuracy - ability to use a range of sentence structures that are accurate and appropriate to ensure effective communication of complex topics and ideas.	Effortlessly uses an accurate and exceptional range of simple and complex sentences with natural expression; and produces consistently accurate connected language with very occasional 'slips' in complex communication.	Uses a very good range of simple and complex sentences with flexibility and occasional inaccuracy; and produces a majority of accurate sentences with good connected language, some omitted words and occasional lack of structure in complex communication.	Uses a good range of simple and complex sentences with some flexibility in structures and some inaccurate usage; and frequently produces accurate simple sentences with mostly connected language but some complex sentences lack structure in communication.	Uses an adequate range of simple and complex sentences with limited flexibility and frequent inaccurate usage that may reduce comprehension; and produces some simple sentences with reasonable accuracy but lacks accurate connected language in complex communication.	Uses some simple sentences but lacks accurate usage of complex sentences and this frequently impedes listener comprehension; produces apparently memorised expressions, or lacks connected language using frequent one-word questions and answers.
Pronunciation - ability to use a range of words and sounds in speech that is fully comprehensible to the listener.	Effortlessly uses an exceptional range of words and sounds with precision and subtlety; accurate use of speech features throughout communication; and accent has no effect on comprehension.	Uses a very good range of words and sounds with only occasional lapses; sustains speech features throughout communication; and accent has a minimal effect on comprehension.	Uses a good range of words and sounds with some speech features not sustained; generally uses speech features in communication with mispronunciation or accent reducing clarity and comprehension at times.	Uses an adequate range of linking words and sounds with some speech features but often speaks each word separately; uses some speech features in communication with mispronunciation or accent frequently reducing clarity and comprehension.	Uses limited words and sounds with accurately and lapses in control are frequent; uses limited speech features with frequent mispronunciations or accent causing a lack of clarity and difficulty in comprehension.

Table 2
Characteristics of years 1 and 2 nursing students (n = 1669).

Variable	
Age, mean [median] (*SD*) years (range: 18 to 62 years)	27.6 [25.1] (8.4)
Sex, *n* (%)	
Male	313 (19)
Female	1356 (81)
Country of birth, *n* (%)	
Australia	637 (38)
Born outside Australia	1028 (52)
Language spoken at home, *n* (%)	
English only	849 (51)
Other than English	820 (49)
First in family as a university student, yes *n* (%)	867 (58)
Students who attended PCAL staff consultation or workshop *n* (%)	567 (34)
CLIP score in Semester 1, mean [median] (*SD*) years (range: 4 to 20)	15.8 [16] (3.7)
CLIP score in Semester 2, mean [median] (*SD*) years (range: 4 to 20)	17.2 [19] (3.3)

4.1. Validity and Reliability of the CLIP Index

Using exploratory factor analysis of the 4-item CLIP index collected in Semester 1, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.87, indicating good inter-item correlations. Only one component was extracted accounting for 92% of total variance. All five items loaded on the single component structure with component loadings that ranged from 0.96 to 0.97. Data from the CLIP index collected in Semester 2 was subjected to confirmatory factor analysis, clearly indicating the one-component structure. Statistically significant at the 5% level, all paths from the CLIP construct to the four items had standardised factor loadings ranging from 0.96 to 0.97. Fit indices of this unidimensional model were as followed: $\chi^2 = 9.776$, df: 1, $p < 0.002$, AGFI = 0.958, TLI = 0.993, CFI = 0.999, RMSEA = 0.087.

The Cronbach's alpha of the CLIP index at baseline was 0.97. Corrected item-total correlations ranged between 0.92 and 0.95, well above the acceptable 0.3 cut-off (Polit and Beck, 2004). Cronbach's alpha of the CLIP index at the 6-month follow-up was 0.98.

4.1.1. Increased CLIP Component Scores From Semester 1 to Semester 2

Fig. 1 shows improvement in all CLIP component scores from Semesters 1 to 2. The smallest improvement was in the pronunciation component (mean increase: 0.28) and the largest improvement was in the lexical component (mean increase: 0.41).

4.1.2. Predictors of Improvement in Total CLIP Index Score at Semester 2

A total of seven (7) variables were entered simultaneously into the logistic regression model to examine for predictors of improvement in total CLIP index score.

Table 3 shows the logistic regression model of improvement in the CLIP index score at the end of Semester 2. Of the seven predictor variables considered, only one variable emerged as a statistically significant predictor of improved CLIP score. Students who attended a PCAL consultation or workshop were over 1.5 times more likely to achieve an improvement in CLIP score (AOR: 1.58, 95% CI: 1.26 to 1.98). Nevertheless, this accounted for only 3.1% of the variance (Nagelkerke's $R^2 = 0.031$) in the model. The chi-square statistic of Hosmer–Lemeshow goodness-of-fit test was 7.816 ($df = 8$, $p = 0.452$), indicating a satisfactory model fit.

5. Discussion

The results of this study showed that an overall improvement in oral communication skills can be achieved among both first and second year nursing students within 6 months, consistent with Cummins' theory that conversational fluency in English can be acquired reasonably quickly (Cummins, 1999). This study found noticeable improvements in the use of vocabulary, while the smallest improvement was in pronunciation. The development of vocabulary knowledge and the usage of lexicon have been identified as paramount in language acquisition in both a first and second language as it underpins an ability to read and capacity to speak (Moghadama et al., 2012). In fact, an extensive knowledge of vocabulary is essential for the successful development of second language skills in listening, speaking, reading and writing (Alqahtani, 2015; Moghadama et al., 2012). However, the linguistic challenges of developing native-like oral communication skills for adult students using EAL are complex and pronunciation has been identified as being "particularly resistant to change, even if those learners have received targeted pronunciation instruction" (Kennedy and Trofimovich, 2010).

The study by Kennedy and Trofimovich (2010) found that for university students with EAL there may be no significant improvement in pronunciation even with intensive instruction on this oral communication skill during a semester of study. Compared to children who can readily acquire EAL, adult users of EAL generally do not achieve the same level of proficiency as children and as a result the learning is less than "complete" (Gürsoy, 2011), particularly in pronunciation skills. Oral communication difficulties involving pronunciation and accent occur in healthcare settings for nurses with EAL, including graduate nurses with EAL who completed their nursing studies in Australia or other English-speaking countries (Allan and Westwood, 2016; Clayton et al., 2016; San Miguel et al., 2006). Poor pronunciation and accent

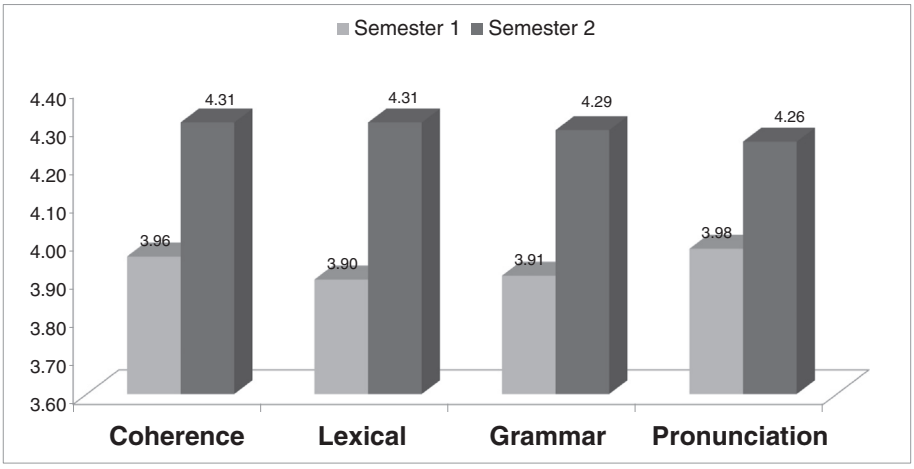

Fig. 1. Mean CLIP component scores: from Semester 1 to Semester 2 (n = 1699).

Table 3
Predictors of an overall increase in CLIP score at the 6-month follow-up.

Variables	Coefficient (B)	Standard error	Adjusted odds ratio (95% CI)	*p*-Value
Improved overall CLIP score at the 6-month follow-up				
Age: > 25 years	−0.11	0.11	0.89 (0.72–1.12)	0.339
Gender: male	−0.05	0.14	0.96 (0.73–1.25)	0.956
Australian-born	−0.11	0.16	0.90 (0.65–1.23)	0.507
Language spoken at home: English	−0.26	0.14	0.77 (0.59–1.01)	0.056
First-in-family to study in University	−0.10	0.11	0.90 (0.73–1.12)	0.904
International student	0.08	0.14	1.08 (0.82–1.43)	0.571
Attended PCAL consultation or workshop	0.46	0.12	1.58 (1.26–1.98)	< 0.001

CI denotes confidence interval.
Hosmer-Lemeshow goodness-of-fit for the model, chi-square = 7.82, 8 *df* ($p = 0.432$).

variation may cause some embarrassment, and in nursing it can also contribute to misunderstanding of care needs and impact on patient safety (Crawford et al., 2017). Difficulties with pronunciation can also increase anxiety for nursing students during practicums, resulting in feelings of being stigmatised and unsupported (Allan and Westwood, 2016). These factors may all contribute in some way to understanding why pronunciation among nursing students was the least likely to improve compared to other areas of oral communication measured by the CLIP index.

Interestingly, the results of this study found that those who accessed academic support, either individual consultations or workshops provided by the PCAL staff, were statistically more likely to improve their oral English language proficiency within 6 months, even after adjusting for socio-demographic factors. The improvement in CLIP index scores for nursing students in our study from Semester 1 to Semester 2 could be attributed to a number of factors that further enriched the support provided by PCAL staff. For instance, over the six month period of the study, students would have been exposed to greater opportunities for immersion in the English language within the classroom with teachers and peers and within the clinical practise setting with staff and patients. Researchers have identified that immersion in the language in settings/situations where there are both English-speaking and non-native English speaking students can be beneficial to improving oral communication skills (Olson, 2012; Salamonson et al., 2008).

Further, the use of the CLIP index score and feedback received during the skill assessment may have provided students with earlier recognition, greater insight and awareness of areas of language deficit. This self-awareness may have prompted these students to access the available oral communication support, to acquire the skills to be, as O'Neill (2011) describes, “a language learner and a competent professional” (p. 1127). This realisation may be more poignant and critical for students in a discipline-specific course like nursing, where the language used in a clinical context differs significantly to day-to-day conversational English. Like other language support programs (Rogan et al., 2006; San Miguel and Rogan, 2009; San Miguel et al., 2006), attendance at PCAL consultations and workshops appeared to be of benefit in improving oral communication skills. The PCAL consultations and workshops provided nursing students with a safe, non-threatening and supportive environment to practise nursing context-specific oral communication skills with nursing and literacy support staff. Other nursing studies (Rogan et al., 2006; San Miguel and Rogan, 2009; San Miguel et al., 2006), have identified that a language support program built students' confidence and competence in areas such as ‘small talk’, use of eye contact, how to terminate conversations and provide explanations. The programs also further developed students' skills in initiating conversations, using professional nursing language and ways to develop rapport with patients. Our study has shown that attendance at PCAL support was a predictor of improvement in CLIP index scores underscoring the benefits of immersion in the practise of clinical oral communication skills in a safe, controlled environment among peers with similar language issues.

While improving the communication skills of undergraduate nurses through assessment and provision of structured learning opportunities is not a new concept, this study adds strength to the available research. Others have identified the importance of using simulation to directly observe and evaluate not only clinical skills but competency in interdisciplinary communication (Choi, 2005; Mikkonen et al., 2016). It is through these types of clinical assessments that students with poor oral communication skills may be counselled and provided with additional structured learning opportunities to develop essential nursing skills of knowing when, how and what to communicate regarding patient care (Krautscheid, 2008). Further, Wilkinson et al. (2008) demonstrated that even a 3-day communication skills course achieved significant improvements in the nurse's ability to communicate with cancer/palliative care patients. The authors found not only an improvement in oral communication, but nurses reported greater confidence in communicating with patients. In addition, there was evidence to suggest that patient's satisfaction improved with the improvements in oral communication scores (Wilkinson et al., 2008).

The results from our study showed that oral communication skills can be improved with provision of additional targeted learning opportunities. In particular, the study validated the effectiveness of the CLIP index tool for the early identification of ‘at risk’ undergraduate nursing students. Further research is called for to examine the effectiveness of the CLIP index in monitoring students over the duration of a course and should include tracking of the development of oral communication skills, and qualitative insights from students about the benefits/challenges of the PCAL support program.

6. Conclusion

This study confirmed that oral communication skills can be improved through assessment, early identification and the provision of additional learning opportunities that focus on improving oral communication skills. The CLIP index tool was found to be useful in the early identification of ‘at risk’ undergraduate nursing students and implementation of appropriate language supports. This tool could be used to monitor the development of students' oral language skills over the course of their study, and identify ‘at risk’ students from first semester who require on-campus language support. In the context of widening participation, it is vital that such institutional support is readily available, particularly to meet the needs of non-native English speakers. A longitudinal mixed method study is needed to track the oral communication skills of undergraduate nursing students over the duration of a course with the inclusion of qualitative insights from students about language support.

Conflict of Interest and Funding

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CRediT authorship contribution statement

Yenna Salamonson: Formal analysis, Writing - original draft, Writing - review & editing. **Paul Glew:** Writing - original draft, Writing - review & editing. **Bronwyn Everett:** Writing - original draft, Writing - review & editing. **Joel M. Woodmass:** Writing - original draft, Writing - review & editing. **Joan Lynch:** Writing - original draft, Writing - review & editing. **Lucie M. Ramjan:** Writing - original draft, Writing - review & editing.

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