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Clinical Placement Quality Survey–Student (CPQS-S): A tool to evaluate allied health placement quality

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Driven by the need to understand placement quality indicators in action, the Clinical Placement Quality Survey–Student (CPQS-S) is a psychometrically robust survey designed to evaluate allied health students' perception of placement. The CPQS-S was developed and validity established through the consensus of an interprofessional expert panel (n = 9). To determine test-retest reliability and internal consistency, students (n = 39) completed the CPQS-S twice. Construct validity was then determined by factor analysis (n = 719). The factor analysis identified four discrete themes relating to the students' perception of what constitutes a quality clinical placement experience, furthermore, these quality indicators demonstrated excellent test-retest reliability. The CPQS-S is a valid and reliable tool for evaluating allied health students' perception of a quality clinical placement experience, underpinned by current best practice frameworks. The CPQS-S provides all stakeholders with an easily scalable and objective method for evaluating placement quality to engage in quality improvement processes.

Keywords: Clinical education, allied health, evaluation, health education, survey

Clinical education is essential to allied health university curricula in Australia and internationally (Health Workforce Australia, 2011). Professional practice experiences occur across a diverse range of settings and are often referred to as a 'clinical placement'. A quality clinical placement provides students with opportunities to apply theoretical and practical learning, and demonstrate clinical aptitude in the practice environment (Campbell et al., 2021; Siggins Miller Consultants, 2012; Wiseman & Page, 2001). Clinical placement is considered fundamental to development of professional capabilities (Courtney-Pratt et al., 2012).

Clinical placement models and settings vary across health professions, driven by increases in health degree programs globally and subsequently, student numbers (Norton et al., 2018). Innovations in supervision, for example 'long-arm' supervision or models where multiple students are supervised by one clinical educator are now commonplace (Alpine et al., 2019). Student placements are also no longer exclusively in the health domain; they may occur in a range of settings including hospitals and associated health settings, schools, private clinics, aged care facilities and the community. Whilst these progressions are reflective of contemporary health care practice, they create challenges when monitoring the breadth, type and quality of student experiences (Health Workforce Australia, 2011). For example, challenges may arise in providing then evaluating equitable learning opportunities. Thus, valid and reliable methods to measure placement quality are critical to ensuring positive student experiences and learning outcomes (Wiseman & Page, 2001).

Existing tools that measure the quality of clinical placements from the student perspective are predominantly from the nursing field (Courtney-Pratt et al., 2015; Papastavrou et al., 2016; Sand-

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Jecklin, 2009; Taylor et al., 2017). Although these tools are widely published in the literature, their applicability in allied health is limited due to inherent differences in the models of clinical education and assessment, such as entry level registration versus internship upon employment. Whilst these tools provide an evidence-informed foundation for assessing the quality of a clinical placement experience in a health setting, the development of a tool specific to allied health clinical education would enable a more targeted evaluation of placement quality.

There is an identified paucity of evidence surrounding the evaluation and quality improvement of clinical placement experiences within the allied health literature (Campbell et al., 2021; Venville et al., 2018). A handful of self-evaluation tools exist, such as the Improving Quality In Practice Placements (iQIPP) framework (Rodger et al., 2010). The iQIPP assists in preparing a quality placement from the perspective of student, supervisor and host organization, however, it fails to provide a measure of the quality of the experience at the conclusion of placement (Rodger et al., 2010). Similarly, other tools, such as The Maastricht Clinical Teaching Questionnaire (Stalmeijer et al., 2010) and Generic Supervision Assessment Tool (Hamilton et al., 2022), are primarily completed by the supervisor with focus on their role within a clinical placement and associated competencies. Students or supervisees can complete a companion version that reliably provides feedback on the educators' performance (Hamilton et al., 2022; Stalmeijer et al., 2010). While the student-educator relationship is one component of a quality clinical placement experience, best practice quality frameworks advocate for additional factors to be considered such as resourcing and facilities within the environment and a workplace culture that values learning (Health Workforce Australia, 2011; Siggins Miller Consultants, 2012). In sum, these robust tools assist in developing the foundations of a quality clinical placement and/or consideration of placement quality from a supervisor perspective. However, there is a need for a tool that assesses the quality of a clinical placement from the student perspective, at the conclusion of the placement experience, to enable university and host organization quality improvement processes to occur.

McAllister et al. (2018) recently developed a seven-item tool known as the Placement Quality Survey (PQS) to measure placement quality in allied health, dentistry, medicine and pharmacy. The tool is based on the Best Practice Clinical Learning Environment (BPCLE) framework by Siggins Miller Consultants (2012) with additional features of supervision outlined by Cusick et al. (2014) and was designed to capture perspectives of students, university academics, placement supervisors and placement site managers. Validity and reliability measures for the student survey were undertaken with 161 students from nine health disciplines (allied health as well as dentistry and medicine) and the survey was found to be a reliable and valid means of measuring student perspectives of placement quality. Unfortunately, however, it was not validated with placement supervisors nor placement site managers, limiting the survey's rollout and clinical uptake.

The BPCLE framework outlines key indicators of placement quality and is widely accepted and utilized in clinical education (Siggins Miller Consultants, 2012). It was developed following review of 23 global education frameworks and outlines five quality indicators of best-practice in clinical education: (1) culture for quality, (2) effective supervision, (3) learning opportunities, (4) effective communication and collaboration, and (5) resources and facilities. The aim of this study was to utilize the evidenced-based BPCLE framework by Siggins Miller Consultants (2012) to develop a valid and reliable tool to evaluate the quality of allied health clinical placement experiences from the student perspective.

METHODS

Ethics Considerations

Ethical approval for the study was granted by the Griffith University Human Research Ethics Committee (GU HREC #2015/177). Participants were informed that their involvement was voluntary and would be anonymous.

Study Design and Participants

The study design was a cross-sectional, descriptive online survey conducted in three parts. Phase 1 developed and assessed the validity of the tool. Phase 2 determined the test-retest reliability of the tool and phase 3 analyzed each item of the tool with a multi-factorial analysis.

Phase 1 included nine clinical placement experts from multiple allied health professions. In phase 2, participants were pre-registration allied health students completing clinical placements from an Australian university. Participants were enrolled in either a Master of Speech Pathology (SP) (n = 18), Master of Physiotherapy (PT) (n = 14) or Bachelor of Nutrition and Dietetics (ND) (n = 7) at Griffith University's Gold Coast campus. To be included, participants were required to have completed a clinical placement as part of their university program within the past 12 months, but no sooner than one month prior to completing the initial survey. Phase 3 participants were Master of Physiotherapy (n = 488) and Master of Speech Pathology (n = 231) students who had completed a clinical placement within their program.

Phase 1 Survey Development

Items for the tool were developed to assess the five quality indicators proposed by Siggins Miller (2012). The survey development team were placement academics involved in on-campus activities and not the assessment of students during clinical placement and three students from the School of Allied Health. The nine-person expert panel from the disciplines of physiotherapy, speech pathology, nutrition and dietetics, occupational therapy and exercise physiology reviewed the items on the tool (Dessinger & Moseley, 2003). Via a cycle of consensus moderation, the questions were reviewed, then modified, removed or new questions added.

Phase 2 Test-Retest Reliability

Test-retest reliability was established with a cross-sectional, observational survey design (Aday & Cornelius, 2011). A multimodal approach was used to maximize participant response rates. The placement academics of the disciplines involved held face to face information sessions with the eligible student cohorts and embedded the survey link into standard post placement email communication. Social media, on campus posters and a small monetary incentive further assisted recruitment. The survey instructions prompted the participant to complete the survey based on their most recent clinical placement. To establish test-retest reliability participants completed the same survey after a two-week interval from their first survey to minimize bias. In addition to the CPQS-S, information on the clinical placement location, participant demographics and five survey evaluation items were collected.

Phase 3 Factor Analysis

Following phase 2 the CPQS-S was embedded into the Griffith University Master of Physiotherapy and Master of Speech Pathology programs as the post-placement evaluation tool (See Appendix A). All

participants in phase 3 were physiotherapy or speech pathology students who had completed a clinical placement. The phase 3 datum collection was separate to phase 2 and occurred from June 2015 to October 2019 to allow sufficient responses for statistical power of a principal factor analysis.

Data Analysis

Descriptive analyses were performed for each item, this included mean and standard deviation (SD). Data from the phase 2 SurveyMonkey® responses was reviewed for errors and cleaned for extraction to Statistical Package for Social Sciences® (SPSSv 25.0, IBM, Chicago IL) to analyze test-retest reliability and factor analysis. Incomplete (< 75%) participant responses were excluded. To establish agreement for the binary and the Likert scale items, an exact or close percentage (> 75%) agreement was accepted. Close agreement was defined as a change in response of one point on a five point Likert scale item (Dalton et al., 2012).

The reliability of the survey was measured through repeated testing assessed at two different time points. Participants completed the CPQS-S immediately post placement and then repeated the same survey two weeks later. Although analysis using Intraclass Correlation Coefficient (ICC) is effective for quantifying the reliability of continuous data, the items in the CPQS-S are nominal or ordinal and were not designed to have a summative score. Therefore, kappa coefficient of Cohen (Cohen's kappa), and weighted kappa were used to estimate the chance-corrected agreement as a measure of test-retest reliability (Streiner & Kottner, 2014). Cohen's kappa and percentage agreement was used for nominal domains and weighted kappa and Cronbach alpha for the ordinal responses.

Kappa can range from -1 to +1, where 0 represents the agreement occurring by random chance and 1 represents perfect agreement between answers (McHugh, 2012). A kappa < 0 indicates no agreement, 0.01–0.20 none to slight, 0.21–0.40 fair, 0.41–0.60 moderate, 0.61–0.80 substantial, and 0.81 to 1.00 indicates almost perfect agreement (McHugh, 2012). Percentage agreement was considered high if it exceeded 75%, moderate between 40 and 75% and low if less than 40% (Rodrigues et al., 2019). For weighted kappa linear weights, proportional to the number of categories apart were used. Internal consistency was assessed using Cronbach alpha coefficient. Scores were interpreted as the following $\geq .90$ – Excellent, $\geq .80$ – Good, $\geq .70$ – Satisfactory, $\geq .60$ – Fair, $\geq .50$ – Poor, and $\leq .50$ – Unacceptable (Taber, 2017). Open item response datum were omitted from analysis.

Principal factor analysis was undertaken to classify the main constructs and redundant items in the CPQS-S (Takane & de Leeuw, 1987; Timmerman & Lorenzo-Seva, 2011). The Kaiser–Meyer–Olkin (KMO) test identified if the data was suitable for factor analysis (Kaiser, 1960). A KMO output of ≥ 0.6 determined that correlations were adequate for conducting principal components analysis (PCA) (Tabachnick & Fidell, 2007). A threshold of statistical significance of the multiple regression analyses was $P < 0.05$.

RESULTS

Phase 1 Survey Development

The multidisciplinary panel convened to establish face and content validity of the questions and update the tool based on a feedback cycle and consensus moderation. The CPQS-S was then embedded in SurveyMonkey®. The tool had two selected response items, 20 yes/no items, 16 five-point Likert scale items and 14 open response comment boxes that sought additional information on negative responses. Survey logic directed participants to appropriate items.

Phase 2 Participant Demographics and Test-Retest Reliability

Forty-nine students responded to the invitation to participate in phase 2 with 39 completing both surveys (79.6% test-retest response rate). The students represented speech pathology, physiotherapy, and nutrition and dietetics.

The participants completed the surveys 9.4 ± 2.6 days apart. The time taken to complete the survey was 9.6 ± 4.1 minutes. Students evaluated the CPQS-S on a five-point Likert Scale from ‘strongly disagree’ (1) to ‘strongly agree’ (5). The students agreed that the survey length was reasonable (4.0 ± 0.8), in a logical order (4.1 ± 0.7) and that the questions were clear (3.9 ± 1.0), and concise (4.1 ± 0.9). The students further agreed that they were able to express their opinions about their placement with the questions provided (3.9 ± 0.8).

Table 1 displays the Cohen’s kappa and percentage agreement for nominal domains (binary responses). Of the 20 binary items, 16 items were completed in all surveys and had exact agreement of ≥75% with Cohens kappa ranging from 0.23 (fair agreement) to 1.0 (almost perfect). The remaining four binary items were only available via survey logic leading to a low response rate not appropriate for inclusion in the analysis. Table 2 displays the weighted kappa for linear weights (Likert Scale), proportional to the number of categories apart were used. For the 16 Likert items the weighted kappa’s ranged from 0.23 (fair agreement) to 0.81 (almost perfect). The Cronbach’s alpha (Cα), determined internal consistency for each Likert scale item and ranged from 0.69 (fair) to 0.95 (excellent). These indicate a high reliability coefficient for internal consistency. The analysis of both Likert and binary items indicate a high test reliability for the CPQS-S.

TABLE 1: CPQS-S Test-Retest reliability, absolute agreement percentage (%) and Cohen’s kappa calculations (k), n=39.

Item	Absolute agreement (%)	Cohens kappa (k)	Interpretation Absolute agreement	Interpretation Cohen’s kappa (k)
Section 2				
2 Orientation	1.00	1.00*	High	Almost perfect
3 Physical Environment	1.00	1.00*	High	Almost perfect
4 Staff	0.95	0.48*	High	Moderate agreement
5 Policies	0.87	0.59*	High	Moderate agreement
6 WPHS	0.95	0.77*	High	Substantial agreement
7 Clinical Presentation	0.87	0.37*	High	Fair agreement
Section 4				
10 Expectations	0.92	0.68*	High	Substantial agreement
11 Conduct	0.92	0.75*	High	Substantial agreement
12 Timetabling	0.90	0.71*	High	Substantial agreement
13 Clinical Load	0.90	0.65*	High	Substantial agreement
14 Assessment	0.92	0.76*	High	Substantial agreement
15 Learning Objectives	0.90	0.71*	High	Substantial agreement
Section 7				
27 Space	0.87	0.23	High	Fair agreement
28 Resources	0.97	0.89*	High	Almost perfect
Section 8				
29 Fair and transparent	0.95	0.64*	High	Substantial agreement
Section 9				
32 Contact university	0.92	0.83*	High	Almost perfect

* Indicates significant p value p<0.05.

TABLE 2: CPQS-S Test-Retest reliability, linear weighted kappa calculations and 95% confidence interval (CI), n= 39.

Item	Cronbach Alpha	Weighted (95% CI)	Kappa	Interpretation Cronbach Alpha	Weighted Kappa
Section 1					
1 Clinical educator/s performance	0.94	0.78* (0.59 – 0.96)		Excellent	Substantial agreement
Section 3					
8 Welcoming	0.94	0.73* (0.49 – 0.97)		Excellent	Substantial agreement
9 Prepared	0.71	0.48* (0.25 – 0.72)		Satisfactory	Moderate agreement
Section 4					
16 Clear expectations	0.89	0.72* (0.54 – 0.91)		Good	Substantial agreement
Section 5					
17 Participate patient care	0.82	0.58* (0.34 – 0.83)		Good	
18 Develop skills	0.69	0.39* (0.13 – 0.65)		Fair	Fair agreement
19 Effective feedback	0.90	0.71* (0.50 – 0.92)		Excellent	Substantial agreement
20 Reflect	0.91	0.69* (0.46 – 0.91)		Excellent	Substantial agreement
21 Clinical educator/s consistent	0.87	0.62* (0.38 – 0.89)		Good	Substantial agreement
22 Clinical educator/s CE time review	0.84	0.59* (0.37 – 0.81)		Good	Moderate agreement
Section 6					
23 Felt respected	0.93	0.74* (0.49 – 0.99)		Excellent	Substantial agreement
24 Felt valued	0.88	0.64* (0.40 – 0.89)		Good	Substantial agreement
25 Ask questions	0.92	0.73* (0.51 – 0.95)		Excellent	Substantial agreement
26 Felt included	0.95	0.81* (0.63 – 0.99)		Excellent	Almost perfect agreement
Section 9					
30 Percentage care	0.90	0.73* (0.54 – 0.91)		Excellent	Substantial agreement
31 Confidence post	0.94	0.76* (0.58 – 0.95)		Excellent	Substantial agreement

* Indicates significant p value p<0.05

Phase 3 Factor Analysis

The thirty-two items of the CPQS-S were appropriate for principal components analysis (PCA). Some items were excluded due to a low response rate from the survey logic (See Appendix A). These items relate to the perception of the assessment not being fair or transparent and outcomes if contact was made with the university. Item 15 (learning objectives) and item 31 (confidence post-placement) were not present in all iterations of the survey resulting in missing data. The remaining 30 items were included for PCA from 719 (SP = 231, PT = 488) surveys with a response rate $\geq 75\%$. From the initial 791 surveys, 72 were excluded as they contained eight or more missing items.

Prior to performing the PCA the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The KMO measure of sampling adequacy was 0.9 for the CPQS-S indicating that factor analysis was appropriate as it exceeded 0.6. The Bartlett’s Test of Sphericity reached statistical significance, supporting the

factorability of the correlation matrix. Using principal components analysis and scree tree it was decided to retain four components for further investigation.

The analysis yielded four factors explaining a total of 46.4% of the variance, with Component 1 contributing at 25.4%, Component 2 at 7.5%, Component 3 at 6.9% and Component 4 at 6.6%. Eigenvalues were 7.624, 2.252, 2.063 and 1.972 respectively (See Table 3). There were similar solutions between Varimax and Oblimin rotations. The oblique rotation (Oblimin) was analyzed as the survey included correlated factors (Yong & Pearce, 2013). The interpretation of four components was consistent with the initial survey design in phase 1.

Factor One was themed ‘student-educator relationship’. It comprised of 12 items that explained 25.4% of the variance with factors loadings from 0.335 to 0.486. Factor Two items related to the ‘culture of learning’ and comprised of three items that explained 7.5% of total variance with the factor loadings from 0.888 to 0.921. Factor Three was comprised of two items that explained 6.9% of the total variance with factor loadings of 0.993. Factor Three items related to ‘supportive relationships’. Factor Four comprised of ten items that explained 6.6% of total variance with factors loadings from 0.299 to 0.608. Factor Four items related to ‘resources and facilities’. The proportion of total variance explained by four factors (communality) ranged from 11% to 98%. There was no cross-loading of items but items 27 (space), 28 (space and resources) and 32 (contact with university staff) did not load into any factor.

DISCUSSION

The current study found the CPQS-S to be a measure of allied health student’s perception of the quality of a clinical placement in relation to the key placement quality indicators identified by Siggins Miller Consultants (2012). The study further identified that discrete components of clinical placements inform the overall perception of quality from the student viewpoint.

Interpretations of Findings

The factor analysis identified four independent themes with no cross loading, providing support for the survey design whereby the included survey items are not combined to form a summative/total score. In addition, the identification of independent themes suggests each item in the CPQS-S should be completed for a thorough understanding of placement quality.

It is known that the length of a survey impacts completion rates (Streiner & Norman, 2010), thus, the potential time burden to students was an important consideration during the design and evaluation of CPQS-S. Test-retest data provided support for the survey length, with findings demonstrating that students considered the time cost of under ten minutes appropriate. The completion time of the CPQS-S was also similar to tools commonly used in other health disciplines (Courtney-Pratt et al., 2015; McAllister et al., 2018). Evaluation of missing data further supported the length of the survey. Under 10% of the total data set were missing eight or more items demonstrating that nearly all students completed the full survey and providing support for implementing the CPQS-S without modification to the current format.

TABLE 3: Pattern and structure matrix for PCA with Oblimin rotation of four factor solution of 30 CPQS-S items.

Item Name	Pattern coefficients				Structure coefficients				Communalities	
	1	2	3	4	1	2	3	4		
19 Effective feedback	0.834	0.051	-0.069	-0.047	0.832	0.229	0.122	0.268	0.701	
1 CE performance	0.832	0.082	-0.082	-0.002	0.854	0.266	0.139	0.317	0.743	
24 Felt valued	0.803	0.073	-0.101	-0.044	0.808	0.249	0.154	0.264	0.671	
23 Felt respected	0.802	0.091	-0.092	-0.087	0.795	0.260	0.145	0.222	0.655	
21 CE consistent	0.779	0.094	-0.050	0.045	0.818	0.270	0.106	0.344	0.683	
18 Develop skills	0.775	0.069	-0.066	-0.007	0.791	0.239	0.118	0.288	0.635	
20 Reflect	0.743	0.108	0.021	0.042	0.780	0.267	0.035	0.328	0.621	
17 Participate patient care	0.715	0.037	-0.045	-0.028	0.715	0.189	0.089	0.241	0.516	
22 CE time review	0.644	0.068	-0.039	0.157	0.718	0.227	0.088	0.403	0.545	
29 Fair and transparent	0.473	0.056	0.053	-0.064	0.458	0.143	0.021	0.115	0.219	
10 Expectations	0.364	0.077	0.061	0.211	0.455	0.173	0.026	0.353	0.255	
30 Percentage care	0.335	-0.085	0.063	0.004	0.315	0.020	0.052	0.116	0.111	
32 Contact university	-0.258	0.146	-0.055	-0.017	0.230	0.095	0.055	0.093	0.078	
28 Resources	0.175	-0.013	0.048	0.135	0.219	0.035	0.035	0.197	0.066	
9 Prepared	-0.026	0.921	0.100	-0.005	0.161	0.904	0.001	0.093	0.827	
8 Welcoming	0.069	0.895	-0.021	-0.087	0.227	0.901	0.120	0.047	0.820	
16 Clear expectations	0.085	0.888	-0.012	0.082	0.303	0.917	0.115	0.220	0.860	
27 Space	0.043	0.216	0.019	0.034	0.100	0.228	0.008	0.075	0.056	
25 Ask questions	-0.014	0.065	0.993	0.004	0.056	0.045	0.987	0.021	0.978	
26 Felt included	-0.015	0.065	0.993	0.006	0.057	0.045	0.986	0.020	0.977	
12 Timetabling	0.064	-0.050	-0.124	0.608	0.284	0.051	0.139	0.629	0.416	
5 Policies	-0.008	0.011	-0.095	0.608	0.224	0.093	0.112	0.609	0.380	
3 Physical Environment	-0.079	0.079	0.034	0.570	0.145	0.127	0.014	0.549	0.312	
13 Clinical Load	0.078	0.012	0.049	0.557	0.283	0.090	0.028	0.585	0.350	
6 WPHS	-0.038	-0.036	0.052	0.493	0.132	0.010	0.044	0.473	0.230	
7 Clinical presentation	0.050	0.050	-0.235	0.472	0.248	0.143	0.256	0.503	0.317	
4 Staff	0.000	0.087	0.033	0.460	0.186	0.139	0.011	0.469	0.228	
11 Conduct	0.053	0.001	0.048	0.452	0.217	0.062	0.033	0.470	0.226	
2 Orientation	-0.053	-0.053	0.039	0.443	0.097	0.015	0.036	0.416	0.181	
14 Assessment	0.278	-0.010	-0.145	0.299	0.395	0.101	0.169	0.405	0.255	
Eigenvalue	7.624	2.252	2.063	1.972						
% of Total Variance	25.4%	7.5%	6.9%	6.8%						
Total Variance				46.3%						

Note: Major loadings for each item are bolded.

A number of questions had a low response rate due to the survey logic, as these questions are only prompted by a low or negative response. Due to the small number of responses, these questions were not included in the statistical analysis and thus not assigned an item number. Whilst not available for statistical analysis, low and/or negative response questions likely provide important pragmatic information to broaden stakeholders understanding of a perceived reduction in quality during a clinical experience. It is thus recommended that all items remain in future iterations of the CPQS-S.

In the current study, the primary aim was to develop a survey tool reflective of placement quality indicators from an allied student perspective, informed by best practice guidelines. The key factors identified in the CPQS-S are comparable to previously published tools across clinical education. From the perspective of nursing students', the culture of being welcomed and the need for support were two factors similar to the CPQS-S (Courtney-Pratt et al., 2014). Similarly, McAllister et al. (2018) and Pit et al. (2020) used the BPCLE to inform survey development and to evaluate interdisciplinary student perceptions of quality. The included students were from varying geographic locations and key findings identified factors similar to the CPQS-S including learning environment, organizational culture and appropriate resources. Respectively, these two studies recommended that future projects include more stakeholders and collect data over a longer study period. Data collection and analysis of the CPQS-S occurred over five years and included n = 719 data points. More recently, Campbell et al. (2021) published a framework to support quality in work-integrated learning. The CPQS-S provides valuable information across all domains identified by the framework including student experiences, curriculum design, institutional requirements and stakeholder engagement. By directly aligning with the BPCLE framework, the CPQS-S affirmed that relationships with supervisors and the wider staff, the culture for learning and resources and facilities are key components to evaluate allied health student perceptions of placement quality (Siggins Miller Consultants, 2012).

Importance of Findings

Allied health students spend considerable time in clinical placement settings during their study. Understanding the quality of placements can assist in improving the overall experience through ensuring high-quality learning experiences now and into the future (Drewery et al., 2016). Existing tools have focused on the preparation of the placement from largely the perceptions of supervisors. Whilst the CPQS-S confirms that the clinical educator is an important part of a placement experience, multiple discrete factors impact a students' perception of quality and the voices of students who experience the placement first-hand should also be elucidated.

Knowledge of clinical placement quality is important for universities and workplace organizations alike because allied health student learning experiences link to the success of graduates (Rowe & Zegwaard, 2017). In addition to graduate success, evaluating clinical placement quality is key to the university and workplace organization's quality improvement processes. The CPQS-S can assist universities and placement providers to evaluate the placement experience from the perspective of students by providing information on the discrete factors that inform the placement quality. The CPQS-S may also help shift the perception that the quality of a clinical placements is a binary paradigm i.e. 'achieved/not achieved' and move toward a more nuanced approach where multiple factors inform overall quality.

Implications for Students Participating in Clinical Placements

Successful clinical placements are a core requirement of health programs and students are well placed to comment on their experiences (McAllister & Nagarajan, 2015). It could be argued that the student

experience is at the center of clinical placements (Drewery et al., 2016), yet a number of existing tools are developed for, and completed by supervisors (Hamilton et al., 2022; Rodger et al., 2010; Stalmeijer et al., 2010). The CPQS-S was designed specifically for students to gather their perception of placement quality across multiple factors. A recent meta-analysis highlighted that student feedback has the ability to improve teaching behaviors (Röhl, 2021). The substantial influence of the student-educator relationship on overall quality was highlighted by the CPQS-S factor analysis, thus changes in teaching behaviors informed by CPQS-S feedback may improve overall placement quality.

Implications for Curriculum Design

Education providers have traditionally utilized feedback mechanisms to evaluate courses and teaching practices, these processes do not however reflect the BPCLE framework for clinical placements (Spooren et al., 2013). This blind spot in feedback and evaluation can be addressed by imbedding the CPQS-S into the curriculum to provide those responsible for curriculum design data to inform and change practice. In addition the CPQS-S can provide valuable data to demonstrate the quality of the clinical education program as required for accredited programs and furthermore where required guide quality improvement activities.

The increasing demand for clinical placements is well documented and is set to continue due to growth in the number of university health programs, cohort numbers and workforce needs (McBride et al., 2020; Williamson et al., 2020). Capacity building will be an ongoing challenge for placement academics tasked with sourcing sustainable placements. To meet the growing placement need, education providers need to implement robust mechanisms to ensure that rapid placement growth does not dilute the quality of students learning experience. The CPQS-S data can support capacity building by identifying and allowing placement academics to target and plan growth at sites that offer high quality experiences. Conversely, the data can provide feedback to action change when poorer quality outcomes are identified.

Implications for Institutions that Include Clinical Placements

Quality placement experiences require institutions to manage staff, risk, reporting and continual improvement (Campbell et al., 2021). Timely feedback that stems from a valid and reliable tool such as the CPQS-S could assist institutions to respond dynamically and be beneficial both for reporting and quality improvements. For example, it is known that clinical placement educators are less confident if they have not completed formal professional development (Newstead et al., 2018) and may lack knowledge to create quality learning experiences (Milne et al., 2022). Targeted professional development, guided by CPQS-S findings, has the ability to grow highly capable clinical educators who can reliably assess students and provide timely, meaningful feedback (Milne et al., 2022). Findings from the CPQS-S can therefore inform and change practice for clinical educators. Similarly, data from the CPQS-S can be reviewed by the themes, tracked over time and analyzed by clinical setting for the entire institution to support accurate and informative reporting.

Implications for Clinical Placement Stakeholders

Stakeholder engagement is a key component of quality clinical education. Campbell et al. (2021) provided a helpful framework that represents key stakeholders and can be used to demonstrate the significance of the CPQS-S and its practical implications. Stakeholders require and benefit from multiple sources of feedback related to the quality of the placement experiences they offer. Anecdotally, clinical education providers often develop their own feedback surveys for students to

complete which may not reflect best-practice principles and have unknown validity and reliability. Utilization of the CPQS-S can be led by the stakeholder in addition to the educational institution, to provide feedback to individual supervisors, inform professional development activities, and assist the planning of future placement offers. An example of stakeholders utilizing the CPQS-S comes from the physiotherapy profession whereby physiotherapy clinical educators complete the assessment and written feedback of students via an electronic platform called APPLinkUp (Dalton & Keating, 2015). The CPQS-S has been embedded on APPLinkUp and de-identified data is accessible to each facility's clinical education manager (an evaluation project is in data collection phase). Within many institutions, student supervision is an employment requirement and key performance indicator. The CPQS-S data can provide a reliable and valid measure on the quality of the supervision provided and thus an assessment of that workplace performance indicator.

Strengths and Limitations for Consideration

Phase 1 included a broad sample of allied health disciplines but due to the timing of placements, there was not an opportunity to mirror this in phase 2. The timing of placements and volume of participants from speech pathology and physiotherapy was however sufficient for analysis. Similarly, participants in the phase 3 were completing either a Master of Physiotherapy or Master of Speech Pathology program. In response, it is recommended future studies are completed that focus on a range of allied health disciplines from a breadth of universities, across Bachelor and Master level programs. Key strengths of this study are the longitudinal collection of data and sample size of participants from two allied health professions resulting in a large data set. Future researchers work should consider student perceptions of quality during clinical placement from beginning to end of their program of study. A Rasch analysis is also recommended to explore the utilization of a survey score to determine recommended cut off points for high- and low-quality experiences. Translation of the CPQS-S into practice would furthermore be supported by the development of a dashboard or user interface that assists all stakeholders to interpret the data the action meaningful change.

CONCLUSION

The CPQS-S is a survey tool reflective of placement quality indicators from an allied health student perspective, that was informed by best practice guidelines. Utilization of the CPQS-S provides a mechanism to improve clinical education practices across four discreet factors relating to the quality of a students' experiences. The results of this study are relevant to all stakeholders involved in clinical education of allied health students; clinical partners who host allied health students, workplace supervisors and university academics. The CPQS-S can be embedded by any stakeholder involved in allied health clinical education and maybe used to aid curriculum design, interpret and inform quality improvement processes, facilitate placement capacity building, and guide appropriate professional development.

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APPENDICES

APPENDIX A: Questions of the Clinical Placement Quality Survey (CPQS-S) with response options.

Item	Questions	Response Options
Section 1		
1	How would you rate your educators' overall performance?	Excellent, Good, Adequate, Fair, Poor
Section 2		
2	An orientation to the facility was provided within the first week of placement?	Yes No
3	Orientation to the physical environment.	Yes No
4	Orientation to relevant staff.	Yes No
5	Where to find relevant policies and procedures.	Yes No
6	Site specific WH&S, Fire and Emergency procedures.	Yes No
7	The type of clinical presentations and clinical environment.	Yes No
Section 3		
8	The facility was welcoming and inclusive at the commencement of the placement. Please describe why you strongly disagree, disagree or are unsure. Please describe why you strongly agree or agree.	Strongly Agree, Agree, Unsure, Disagree, Strongly Disagree Free text Free text
9	I understood the clinical setting and was prepared to commence placement Please describe why you strongly disagree, disagree or are unsure. Please describe why you strongly agree or agree.	Strongly Agree, Agree, Unsure, Disagree, Strongly Disagree Free text Free text
Section 4		
10	Within the first week of the placement my educators discussed expectations of the placement with me.	Yes No
11	Were the following elements discussed as part of the placement expectations? Professional conduct	Yes No
12	Were the following elements discussed as part of the placement expectations? A clear timetable of activities and responsibilities	Yes No
13	Were the following elements discussed as part of the placement expectations? Expected clinical load for each week of placement	Yes No
14	Were the following elements discussed as part of the placement expectations? Assessment and performance	Yes No
15	Were the following elements discussed as part of the placement expectations? Learning objectives	Yes No
16	Overall, I was clear with regard to the expectations of the placement Please describe why you strongly disagree, disagree or are unsure regarding expectations of the placement.	Strongly Agree, Agree, Unsure, Disagree, Strongly Disagree Free text
Section 5		
17	I was provided adequate opportunity to actively participate in patient care. Please describe why you feel you were not provided with adequate opportunity to actively participate in patient care.	Never, Rarely, Sometimes, Often, Always Free text
18	My educators provided opportunity where the focus of the patient contact was on learning and developing my clinical skills. Please describe why you feel you were not provided with opportunity to focus on learning and developing your clinical skills.	Never, Rarely, Sometimes, Often, Always Free text
19	I was provided with effective feedback. Please describe why you feel you were not provided with effective feedback.	Never, Rarely, Sometimes, Often, Always Free text

20	Relating to learning environment: Adequate time was provided to reflect on and to discuss my learning experience. Please describe why you feel you were not provided with adequate time to reflect on and discuss learning.	Never, Rarely, Sometimes, Often, Always Free text
21	My educator was consistent on their approach to supervision Please describe why you feel your educator was not consistence in their approach to supervision.	Never, Rarely, Sometimes, Often, Always Free text
22	My educator and I scheduled regular time for reviewing and monitoring of my placement performance Please describe why you feel there was insufficient time dedicated to reviewing and monitoring your placement.	Never, Rarely, Sometimes, Often, Always Free text
Section 6		
23	I felt respected by my educators in my role as a student Please describe why you did not feel respected in your role as a student	Never, Rarely, Sometimes, Often, Always Free text
24	I felt I was a valued member of the clinical team. Please describe why you did not feel valued as a team.	Never, Rarely, Sometimes, Often, Always Free text
25	I felt comfortable and open to ask and respond to questions with my educators. Please describe why you felt uncomfortable to ask and respond to questions with your educator.	Never, Rarely, Sometimes, Often, Always Free text
26	I felt included in the team outside of direct clinical contact for example team meetings.	Never, Rarely, Sometimes, Often, Always
Section 7		
27	Were you provided with a space to complete non-clinical tasks?	Yes No
28	Did the facility have resources available to support your learning?	Yes No
Section 8		
29	I felt that my assessment was fair and transparent Why did you feel it was not fair and transparent? Effective feedback was not provided throughout the placement. The expectations of the educator were not clear throughout the placement. My assessment outcomes were not clearly explained with clinical examples. I was not provided with the opportunity to achieve the objectives	Yes No Yes No
Section 9		
30	What percentage of your care would you was related to direct to patient/client interaction care?	0-20%, 21-40%, 41-60%,61-80%, 81-100%
31	Now that you have completed this placement, how would you rate your confidence to practice independently in your first week as a as a new graduate in this clinical area?	Not confident , Somewhat confident, Confident, Very Confident, Extremely Confident,
32	At any stage during the clinical placement did you have contact with any members from the university directly related to your clinical placement How effective did you find the input provided by this person	Yes No Excellent, Good, Adequate Fair, Poor



About the Journal

The International Journal of Work-Integrated Learning (IJWIL) publishes double-blind peer-reviewed original research and topical issues dealing with Work-Integrated Learning (WIL). IJWIL first published in 2000 under the name of Asia-Pacific Journal of Cooperative Education (APJCE). Since then the readership and authorship has become more international and terminology usage in the literature has favored the broader term of WIL, in 2018 the journal name was changed to the International Journal of Work-Integrated Learning.

In this Journal, WIL is defined as "*an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practice of work as an intentional component of the curriculum. Defining elements of this educational approach requires that students engage in authentic and meaningful work-related task, and must involve three stakeholders; the student, the university, and the workplace*". Examples of practice include off-campus, workplace immersion activities such as work placements, internships, practicum, service learning, and cooperative education (Co-op), and on-campus activities such as work-related projects/competitions, entrepreneurship, student-led enterprise, etc. WIL is related to, but not the same as, the fields of experiential learning, work-based learning, and vocational education and training.

The Journal's main aim is to enable specialists working in WIL to disseminate research findings and share knowledge to the benefit of institutions, students, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that leads to the advancement of effective practices, development of further understanding of WIL, and promote further research.

The Journal is ongoing financially supported by the Work-Integrated Learning New Zealand (WILNZ; www.wilnz.nz), and the University of Waikato, New Zealand, and received periodic sponsorship from the Australian Collaborative Education Network (ACEN) and the World Association of Cooperative Education (WACE).

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Types of manuscripts sought by IJWIL is primarily of two forms: 1) *research publications* describing research into aspects of work-integrated learning and, 2) *topical discussion* articles that review relevant literature and provide critical explorative discussion around a topical issue. The journal will, on occasions, consider good practice submissions.

Research publications should contain; an introduction that describes relevant literature and sets the context of the inquiry. A detailed description and justification for the methodology employed. A description of the research findings - tabulated as appropriate, a discussion of the importance of the findings including their significance to current established literature, implications for practitioners and researchers, whilst remaining mindful of the limitations of the data, and a conclusion preferably including suggestions for further research.

Topical discussion articles should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical and scholarly discussion on the importance of the issues, critical insights to how to advance the issue further, and implications for other researchers and practitioners.

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