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ORIGINAL RESEARCH REPORTS

Interdisciplinary Management of People with Communication and/or Swallowing Disorders: Confidence, Knowledge and Experience of Undergraduate Allied Health Students

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Abstract

Purpose: Interprofessional collaboration is an important aspect of health practice. Individuals with communication and/or swallowing impairments are often managed by interdisciplinary teams including speech-language pathologists (SLPs), and other healthcare professionals. Literature reports that other allied health professionals may not be confident working with this caseload and little evidence exists that explores undergraduate allied health students' confidence, knowledge, and experience working with this caseload, and as part of an interdisciplinary team. Such knowledge is essential in order to inform curriculum and to improve overall professional practice and patient outcomes. This research aimed to investigate: (1) the knowledge and confidence of non-SLP undergraduate allied health students who have worked with individuals with communication and swallowing disorders; and (2) how often these students have worked with a SLP on placement.

Method: 131 undergraduate allied health students from physiotherapy, occupational therapy, social work, and nutrition and dietetics completed a survey to evaluate their confidence, knowledge, and experience when working with this caseload, and as part of an interprofessional team with SLPs.

Results: Participants had equal levels of confidence across disciplines and were more confident working with people with communication impairments compared to swallowing impairments. Student participants from all professions stated they would like more education regarding working with this caseload.

Discussion: Findings revealed a want for further education regarding communication and swallowing impairments. There was an overall lack of experience working with SLPs, indicating a potential lack of interprofessional education in allied health students' tertiary education.

Keywords: Allied health, Communication disorders, Swallowing disorders, Interdisciplinary practice, Undergraduate education

1. Introduction

Communication and swallowing impairments are the main scope of practice of speech-language pathologists (SLPs) [1]. Individuals with communication or swallowing impairments often have comorbid conditions requiring management by non-speech-language pathologist health professionals, and due to the likely complexity of their presentation, individuals with health conditions resulting in communication or swallowing

impairments are often subsequently managed by interprofessional healthcare teams [2]. In addition to SLPs, these teams typically consist of other relevant allied health (such as physiotherapy, occupational therapy, nutrition and dietetics, and social work) and primary health (medical and nursing) professionals, who may be the first point of contact for patients within the healthcare system and serve an important role when a patient is referred to speech-language pathology services [3]. However, these professionals often feel ill-equipped or undereducated when working with an individual with a communication or

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swallowing impairment [4]. This may be due to reduced knowledge regarding speech-language pathology as a profession, or around communication and swallowing difficulties, stemming from lack of education provided as part of tertiary curriculums [5].

In Australia, SLPs train at the tertiary level, completing either a minimum 4-year undergraduate degree or a graduate-entry master's program, where they learn how to work with individuals with communication and swallowing impairments [6]. When knowledge and understanding of communication and swallowing is not embedded into other health professionals' tertiary or continuing professional education, managing an individual with communication and swallowing difficulties may cause anxiety due to a lack of confidence [7]. A professional's lack of confidence or competence in their service provision can impact the quality of care that a patient receives [7,8]. Further, interprofessional collaboration and education is a crucial part of a health professional's training and practice [9]. A professional's understanding of the different professional roles in interprofessional client/patient care is recommended to improve service delivery and health care outcomes [3], and is a core competency of interprofessional practice [10].

Several studies have investigated medical professionals' knowledge regarding communication impairments. The results of these studies have indicated that medicine and nursing staff and students alike often feel less confident in their interactions with people with communication impairments compared to professionals who have had explicit training in this area [11], or are experienced working with this population [12]. Much of the research has focused on the perceptions of primary medical professionals before and after specific training, with results from multiple studies showing improvements in understanding of, and confidence regarding, working with individuals with communication impairments [11,13].

There is a paucity of research on health professionals' confidence working with communication impairments with a specific focus on allied health professionals. Two papers by Cameron and colleagues [7,14], investigated both primary and allied health professionals likely to work with people with language impairments (e.g., aphasia), post-stroke. The studies investigated the confidence and knowledge of various health professionals (e.g., allied health assistants, audiologists, dieticians, occupational therapists, physiotherapists, social workers etc.) after having participated in a pre-post intervention program aimed at delivering communication strategies (i.e., a communication partner

training program). The results of these studies indicated that the confidence of allied health professionals regarding working with people with aphasia significantly increased post-intervention. Both studies were conducted within an acute setting, however, allied health professionals will often work with individuals with communication and/or swallowing disorders in other settings (e.g., rehabilitation, education, nursing homes, and disability). The articles also only focused on people with aphasia and their communication difficulties. There is little focus on research outside of speech-language pathology regarding working with individuals with swallowing impairments (i.e., dysphagia). Of the allied health professions, occupational therapy has the largest body of evidence regarding working with individuals with dysphagia, which focuses on the activities of daily living surrounding feeding behaviours and eating as part of dysphagia rehabilitation [15].

Aside from the aforementioned articles, there is a lack of research specific to the confidence, knowledge and experience of all allied health professionals working with individuals with communication or swallowing impairments. There is also limited research surrounding how these professionals work interprofessionally, and with a SLP when supporting this caseload. Additionally, no studies have studied the perceptions of, or the differences in confidence, knowledge, and experience between, students from different allied health disciplines when working with people with communication or swallowing impairments as part of an interprofessional team. Confidence in new graduates has been determined to have a significant impact on the quality of their practice, with studies in nursing showing that new nursing graduates with greater confidence in their interprofessional collaboration skills were more likely to engage in interprofessional collaboration [16]. Further, a study conducted by Cameron and colleagues [17] found that when undergraduate occupational and physiotherapy students were delivered an intervention related to strategies in communicating with people with aphasia, their confidence and knowledge around supporting this caseload improved. With strong evidence supporting the positive relationship between good interprofessional collaboration and improved patient healthcare outcomes [18], the lack of materials and education provided to non-speech-language pathology allied health professionals regarding working with individuals with communication or swallowing impairments, particularly at the student level, may impact the care of patients with these complex conditions.

It is essential to determine the confidence, knowledge, and experience of future professionals (i.e., undergraduate allied health professional students) when working with people who have communication and/or swallowing disorders, as they are highly likely to encounter these caseloads when they graduate. As these future allied health professionals may be integral to the team-based care of this caseload, it is important to understand their perceptions around the future care of these individuals, in order to tailor the curriculum and work integrated learning experiences that ultimately better support their patients. Therefore, the aim of the current study was to investigate: (1) the knowledge and confidence of non-SLP undergraduate allied health students who have worked with individuals with communication and swallowing disorders, and (2) how often these students have worked with a SLP on placement.

2. Methods

2.1. Ethical approval

Ethical approval for the overall research project was granted by the University of Newcastle Human Research Ethics Committee (H-2018-0117).

2.2. Participants

Participants were a convenience sample of 131 undergraduate allied health students at the University of Newcastle. The inclusion criteria for the participants were that the students were in their third or fourth year of study an allied health undergraduate degree, including physiotherapy (PT) ($n = 31$), occupational therapy (OT) ($n = 38$), social work (SW) ($n = 32$), and nutrition and dietetics (ND) ($n = 30$). Third- and fourth-year students were targeted as participants as these are the years students commence their adult population clinical placements at the University of Newcastle. Participants included 112 females, 18 males, and 1 non-binary. Student ages ranged from 20 to 50 years old, with a mean age of 31.9 years. Demographics for all participants by program are shown in [Table 1](#).

Participants were asked to complete a short questionnaire in either paper-based or online form across

a four-week period in April 2018 and advised that due to the anonymous nature of the questionnaire, their consent was implied by way of completion/return of the questionnaires to the researcher. Cross-sectional survey studies are, in general, prone to non-response bias (Sedgwick, 2014), and this was a consideration when conducting and analysing the research data. Response rates are reported in [Table 2](#).

2.3. Questionnaire

The 30-item self-report questionnaire consisted of Likert-scale, multiple choice, and closed-ended questions ([appendix](#)) and was purpose-designed for the study in line with relevant literature on survey design [[19,20](#)] and the content matter [[7,8,13](#)].

Content validity was determined by way of an individual (unrelated to the research project, a SLP with experience in communication and swallowing difficulties), who assessed each item and ensured the quality of the survey and that each item measured what it should [[21](#)]. Similarly, the questionnaire was pilot tested by another individual (unrelated to the research project, and not a member of the population under investigation) to assess face validity to ensure content was cohesive and easy to understand and complete for those unfamiliar with the constructs under investigation [[20](#)].

2.4. Analysis

Data were analysed using JMP statistical analysis software, where data was coded from 0 to 4 (from strongly disagree to strongly agree). For some questions, data was recoded to investigate agreement (strongly agree and agree) and non-agreement (neither agree nor disagree, disagree, strongly disagree). Analysis involved descriptive statistics (e.g., measures of frequency and variation). Inferential statistics were derived using contingency analysis and conditional logistic regression models. Pearson's chi-squared test was used to determine statistical significance difference between variables.

3. Results

Out of 131 participants, 129 responded to every question (response rate: 98.5%), with 2 others not

Table 1. Participant demographics by program.

Program	N	Gender			Average Age	Number born in Australia	Number with English as first language
		Male	Female	Nonbinary			
PT	31	8	23	0	22	29 (93.5%)	31 (100%)
OT	38	5	33	0	23	35 (92.1%)	36 (94.7%)
SW	32	2	29	1	21.5	30 (93.8%)	30 (93.8%)
ND	30	3	27	0	22	28 (93.3%)	28 (93.3%)

Table 2. Participant response rate by program.

	PT	OT	SW	ND
Number enrolled	86	92	52	70
Number responded:				
Face to Face	23	32	29	31
Online	8	6	1	1
Response rate (%)	36.0	41.3	57.7	45.7

responding to a small number of items. Responses from every participant were analysed, with those who did not complete a particular item not being counted for that item only.

3.1. Confidence working with communication and swallowing impairments

At least 60% of all participant groups agreed they felt confident working with communication impairments, as shown in Fig. 1: physiotherapy $n = 21$ (70%), occupational therapy $n = 24$ (63.2%), social work $n = 23$ (71.9%), nutrition and dietetics $n = 23$ (76.7%). There was no significant difference between program groups found regarding confidence when working in their future profession with people with communication difficulties ($p = 0.67$).

Figure 2 shows the levels of agreement in relation to confidence with swallowing impairments was less than those reported for communication, with social work students reporting the highest level of agreement, $n = 20$ (62.5%), followed by nutrition and dietetics, $n = 17$ (56.7%). Physiotherapy students, $n = 12$ (38.7%) and occupational therapy students, $n = 13$ (34.2%) reported confidence to a lesser degree compared to social work and nutrition and dietetic students, but this difference was non-significant.

Conditional logistic regression was carried out to determine whether there was an overall significant

difference between participant confidence working with communication disorders compared to swallowing disorders. Students showed 5.83 times more agreement in their responses to confidence when working with communication compared to swallowing impairments ($OR = 5.83$, 95% CI: 2.5, 13.9). This effect was found to be significant based on the results of a Likelihood Ratio test $p < 0.001$.

3.2. Knowledge of communication and swallowing impairments

Across all participant groups, there were varying levels of agreement in relation to understanding of the different types of communication impairments: nutrition and dietetics $n = 15$ (50%), physiotherapy $n = 14$ (45.2%), social work $n = 13$ (40.6%), and occupational therapy $n = 13$ (34.2%), as seen in Fig. 3.

In relation to knowledge around swallowing impairments, level of perceived knowledge ranged from 6 to 27%, as follows: nutrition and dietetics $n = 8$ (26.7%), occupational therapy $n = 8$ (21.1%), social work $n = 3$ (9.4%), and physiotherapy $n = 5$ (6.1%) as seen in Fig. 4.

Although there was some variation across programs around their agreement on these variables, analysis revealed no statistically significant difference between the four programs regarding understanding of communication ($p = 0.60$) and swallowing ($p = 0.33$) difficulties.

3.3. Experience working with communication and swallowing impairments

The data revealed that 46.7% of nutrition and dietetics students ($n = 14$) had never had experience

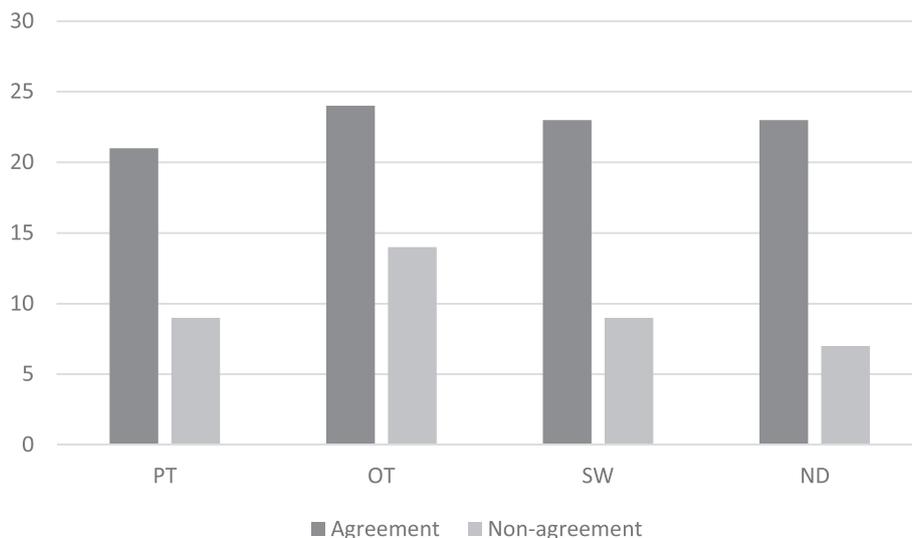


Fig. 1. Reported confidence working with communication impairments by program.

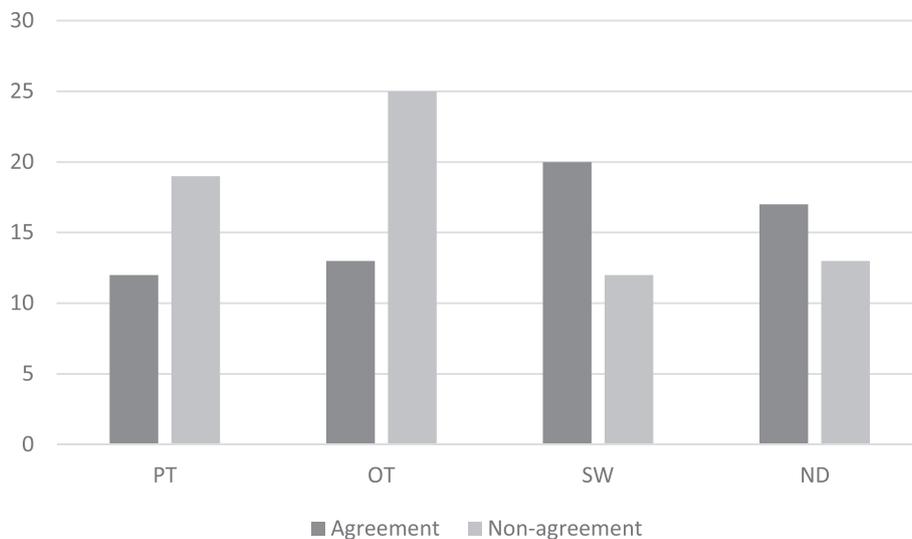


Fig. 2. Reported confidence working with swallowing impairments by program.

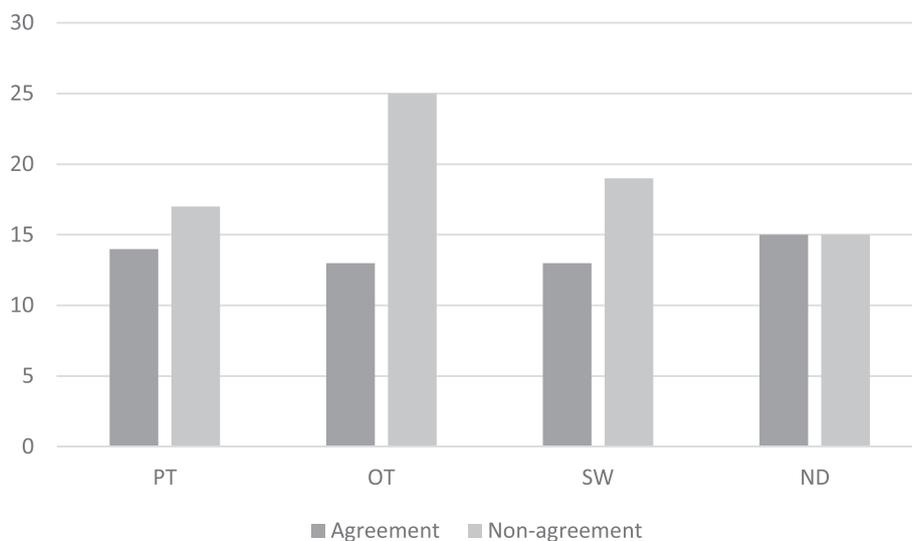


Fig. 3. Reported knowledge of communication impairments by program.

working with people with communication difficulties, compared to physiotherapy ($n = 1$, 3.23%), occupational therapy ($n = 0$, 0.00%), and social work ($n = 4$, 12.50%) students. Nutrition and dietetic students had also no respondents answer ‘often’ or ‘very often’ for this question, with physiotherapy having 5 ‘often’ responses (16.13%), occupational therapy having 4 (10.53%), and social work having 7 (21.88%). Social work also had the only ‘very often’ response for this question ($n = 1$, 3.13%). Numerical data is presented in [Table 3](#).

In relation to experience working with swallowing impairments, the data revealed that both social work ($n = 18$, 58.06%) and nutrition and dietetics ($n = 18$, 60.00%) students had higher ‘never’ responses regarding having worked with individuals with swallowing impairments when compared with

physiotherapy ($n = 3$, 9.68%) and occupational therapy ($n = 3$, 7.89%). Numerical data shown in [Table 3](#).

3.4. Perceptions around further education on communication and swallowing impairments

Across the four disciplines, most students responded that they agree they would like to learn more about communication and swallowing difficulties. In relation to communication difficulties specifically, further analysis of this data revealed that occupational therapy students responded with the lowest proportion of agree responses ($n = 35$, 92.11%), and that social work students had the highest proportion of agreement responses ($n = 30$, 93.75%).

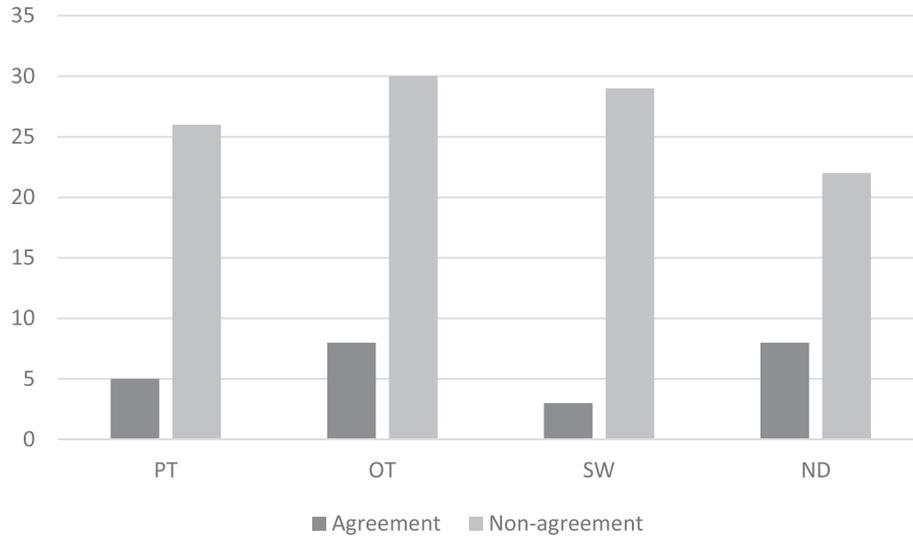


Fig. 4. Reported knowledge of swallowing impairments by program.

Table 3. Frequency of student experience working with communication and swallowing impairments by program.

Program	Never	Rarely	Sometimes	Often	Very Often
Communication					
PT	1 (3.23%)	7 (22.58%)	18 (58.06%)	5 (16.13%)	0 (0.00%)
OT	0 (0.00%)	13 (34.21%)	21 (55.26%)	4 (10.53%)	0 (0.00%)
SW	4 (12.50%)	8 (25.00%)	12 (37.50%)	7 (21.88%)	1 (3.13%)
ND	14 (46.67%)	10 (33.33%)	6 (20.00%)	0 (0.00%)	0 (0.00%)
Swallowing					
PT	3 (9.68%)	14 (45.16%)	13 (41.94%)	1 (3.23%)	0 (0.00%)
OT	3 (7.89%)	23 (60.53%)	11 (28.95%)	1 (2.63%)	0 (0.00%)
SW	18 (58.06%)	8 (25.81%)	4 (12.90%)	1 (3.23%)	0 (0.00%)
ND	18 (60.00%)	8 (26.67%)	4 (13.33%)	0 (0.00%)	0 (0.00%)

In relation to swallowing impairments, data revealed that social work students had the lowest proportion of agreement responses ($n = 27$, 84.38%), while the nutrition and dietetic students had the highest ($n = 29$, 96.67%). See Fig. 5.

There was no significant difference found between disciplines regarding wanting to learn more about communication ($p = 0.9928$) and swallowing ($p = 0.3758$) difficulties.

3.5. Participant understanding of working with speech-language pathologists

Most participants reported that they understood the role of a SLP. The discipline with the highest proportion of students who reported agreement with this statement was physiotherapy ($n = 27$, 87.10%), followed by occupational therapy ($n = 33$, 86.84%), social work ($n = 27$, 84.38%), and nutrition and dietetics ($n = 20$, 71.43%). No significant difference was found between programs on this variable ($p = 0.33$).

Respondents who stated they had worked previously in any capacity with a SLP as part of a team

were in the minority. Only 1 nutrition and dietetics student (3.57%) responded in agreement with this question, compared to physiotherapy ($n = 10$, 32.26%), occupational therapy ($n = 12$, 31.58%), and social work ($n = 4$, 12.50%). Further analysis revealed a statistically significant difference on this variable ($p = 0.01$), with social work and nutrition and dietetics students had significantly greater non-agreement responses compared to physiotherapy and occupational therapy.

Most participants responded that they feel confident referring an individual with communication impairments and swallowing impairments to a SLP (see Fig. 5). However no statistically significant differences were found between disciplines for responses to questions regarding confidence referring individuals with communication ($p = 0.19$) or swallowing ($p = 0.65$) impairments to a SLP.

Most respondents agreed they would feel confident working with a SLP as part of a team to support an individual with a communication impairment or a swallowing impairment, see Fig. 5. However no statistically significant differences were found between disciplines for responses to questions

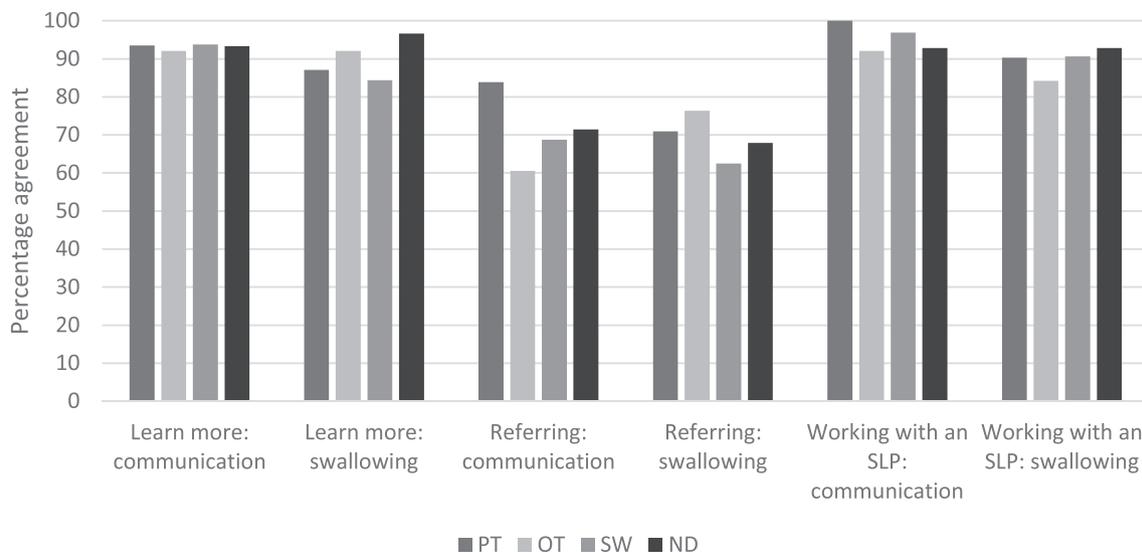


Fig. 5. Percentage agreement by participant group on variables relating to learning more, referring patients, and working with an SLP to support patients with communication and swallowing disorders.

regarding confidence working with a SLP as part of a team to support an individual with a communication impairment ($p = 0.24$), or a swallowing impairment ($p = 0.70$).

4. Discussion

The results of this study indicate that students enrolled in different undergraduate allied health programs demonstrate similar levels of self-reported confidence regarding working with people with communication or swallowing impairments. However, the results also show that allied health students feel significantly more confident working with people with communication impairments compared to people with swallowing difficulties. Despite this, most of the students stated that they want to learn more about communication and swallowing impairments.

There was no significant difference between the surveyed allied health students regarding confidence and knowledge when working with individuals with communication and/or swallowing impairments. This indicates that no single discipline is educated more than the others on these impairments.

Overall, more of the allied health students stated they had a good understanding of communication impairments, in comparison to knowledge around swallowing impairments. The scarcity of research into swallowing impairments outside of speech-language pathology may explain the significantly lower understanding about these impairments that the participants reported, with non-speech-language pathology allied health research on

dysphagia management only being a small amount found in occupational therapy and nutrition and dietetics [15,22].

Participants also felt significantly less confident working with swallowing impairments than they did working with communication impairments. And although participants reported they were more confident working with communication impairments, they only perceived having a good knowledge or understanding of communication impairments 50% of the time or less. Taken together, these findings may reflect a lack of information regarding communication and swallowing impairments in allied health tertiary programs. While some research has been conducted regarding allied health professionals working with individuals with communication impairments [17,23], it is quite limited in scope. This limited scope of research into communication impairments, combined with the lack of swallowing research in the non-speech-language pathology allied health disciplines, may impact these disciplines' focus on these impairments in tertiary curricula. A Canadian study of occupational therapy students' and graduates' satisfaction in their education found that dysphagia education was not incorporated into the core curriculum [24]. While this study is based on Canadian curriculums, the absence of dysphagia as part of the professional competencies and scope of practice of both occupational therapy [25] and nutrition and dietetics [26] in Australia is noted when comparing them to the competencies and scope of practice of the speech-language pathology profession [27]. This may reflect a lack of association and recognition of these issues as part of these discipline's extended

scope of practice. Due to physiotherapy and social work's general scarcity of research into the management of swallowing impairment, a similar lack of recognition may also be present.

Overall, most participants indicated their desire for increased knowledge about communication and swallowing impairments. This is an encouraging finding, as it suggests that undergraduate allied health students do not think of themselves as only working within the confines of their discipline but recognise that the challenges typically managed by other health professionals. The allied health disciplines that the participants are studying commonly work within interprofessional teams, including those involved in the management of individuals who have communication or swallowing impairments [2]. Knowledge of the roles of other members of the interprofessional team is a core competency of interprofessional practice [10]. While the direct management of an individual's communication or swallowing impairment is part of a SLPs scope of practice, it is heartening to find that the surveyed students' attitudes towards further professional education and development is not just limited to their specific practices.

Most students felt they understood a SLPs role and stated they would be confident working with a SLP as part of a team caring for people with communication and/or swallowing impairments in their future professional practice. However, it is noteworthy that few students had any substantial contact with a SLP on their clinical placements. Interprofessional collaboration is a large part of an allied health professional's scope of practice [9], however these findings suggest that students are not gaining exposure and experience working with SLPs, which may warrant further investigation.

In summary, the overall results may have future implications in relation to informing the curriculum of allied health programs in relation to academic content and work integrated learning exposure and experience. Ensuring that relevant content on communication and swallowing disorders is embedded into academic curriculum of those disciplines likely to form part of an interdisciplinary team is crucial and may increase these future professionals' knowledge and confidence in these areas. Similarly, working as part of an interdisciplinary team with SLPs when supporting these patients while on clinical placement may also increase exposure, knowledge and confidence not only with this caseload but also with the profession of speech-language pathology. It is important for members of an interdisciplinary health team to understand each other's roles and scope of practice, as this allows for

relevant, timely referrals to support patient care. These strategies have implications around ensuring that the practice of future and current health professionals is as informed and to as high a standard as possible. Finally, and most importantly, ensuring a more holistic academic and work integrated learning curriculum to include information about individuals with communication and swallowing disorders (including how to work interprofessionally to support them) may directly impact on the quality of care that patients receive [7,8].

4.1. Limitations and future directions

Participants were recruited in their final two years of study, however due to curriculum differences, this resulted in varying levels of clinical exposure/experience. Subsequently, this may have influenced reported confidence and understanding regarding working with communication and swallowing difficulties, as well as reported experience working with SLPs in a clinical setting. Future similar research would recruit participants across these disciplines in their final semester, or upon completion of their studies, to address any potential disparities.

Self-reported questionnaires are subjective measures of information; thus responses may not accurately reflect participants' knowledge of communication and swallowing impairments. While there is a documented link in literature between healthcare professionals' increased understanding and increased confidence [28,29], an objective measure of participant understanding, and knowledge may more accurately measure these constructs.

Further research exploring the understanding, attitudes, and confidence of graduate health professionals when working with individuals with communication and swallowing impairments is warranted. The lack of substantial research on this topic across the multiple allied health disciplines investigated in this study indicates a general lack of consideration regarding how the practice of professionals from these disciplines may be affected when working with people with these impairments. Research similar to this study may also be conducted into students of other health professions, such as medicine, nursing, or psychology.

5. Conclusion

These preliminary results indicate that while university-level allied health students feel somewhat confident towards working with individuals with communication and/or swallowing impairments, the vast majority would like to learn more

about these impairments. Allied health students are also significantly less confident working with people with swallowing impairments than they are with communication impairments. Results also show that only a minority of students across the disciplines have worked in any significant capacity with SLPs on their clinical placements. With interprofessional education and collaboration being a large part of professional development, the impact that future allied health students not having significant clinical experience with a SLP may lead to barriers in their future multi-, inter-, or transdisciplinary practice. That allied health students want to learn more about the various communication and swallowing impairments that they may encounter in their own professional practice should encourage further education on these topics. The results of this preliminary study also support further investigation into how best to incorporate education on swallowing and communication difficulties in non-speech-language pathology undergraduate allied health programs given the demonstrated interest in learning more about these impairments.

Appendix

Student survey - Working interprofessionally to support people with communication and/or swallowing disorders: Undergraduate student perceptions

PART 1 - About you and your program

- Q1. Age _____
- Q2. Gender _____
- Q3. Country of Birth:
- Australia
 - Other (please specify) _____
- Q4. What is your first language?
- English
 - Other (please specify) _____
- Q5. Do you have any **other** fully or partially completed University or TAFE qualifications?
- No
 - Yes (Please specify) _____
- Q6. Have you or one of your family members ever received speech therapy?
- No
 - Yes (Describe) _____
- Q7. Which program are you currently enrolled in?
- Bachelor of Nursing
 - Bachelor of Nursing (Advanced Practice)
 - Bachelor of Nursing (Honours)
 - Bachelor of Nutrition and Dietetics (Honours)
 - Bachelor of Occupational Therapy (Honours)
 - Bachelor of Physiotherapy (Honours)
 - Bachelor of Social Work (Honours)
 - Bachelor of Teaching (Early Childhood and Primary) (Honours)
 - Bachelor of Teaching (Primary) (Honours)
 - Other (Please specify) _____
- Q8. Which year of your program are you currently enrolled in?
- 1
 - 2
 - 3
 - 4
 - Non-standard enrolment: _____

Ethical approval

Ethical approval has been granted from the University of Newcastle, Australia's Human Research Ethics Committee for research involving human participants (H-2018-0117).

Other disclosure

None.

Conflict of interest

The authors report no conflicts of interest.

Acknowledgments

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PART 2 – Confidence, knowledge, and experience: Communication and swallowing impairments

The following section will investigate students' confidence, knowledge, and experiences with people who have communication and/or swallowing difficulties. Please circle the place on the scale that applies to you.

Q9. Outside of my training/studies, I have had experience interacting with people who have communication difficulties (e.g., in the home or in public venues etc.)

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q10. Outside of my training/studies, I have had experience interacting with people who have swallowing difficulties (e.g., in the home or in public venues etc.)

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q11. I feel comfortable when interacting with people with communication difficulties

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q12. I feel comfortable when interacting with people with swallowing difficulties

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q13. I feel confident about working with individuals with communication difficulties in my future profession.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q14. I feel confident about working with individuals with swallowing difficulties in my future profession.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q15. I have a good understanding of the different types of communication difficulties that may present in adults or children

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q16. I have a good understanding of the different types of swallowing difficulties that may present in adults or children

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q17. How often have you worked with people with communication difficulties as part of your practical training during your degree?

0	1	2	3	4
Never	Rarely	Sometimes	Often	Very often

Q18. How often have you worked with people with swallowing difficulties as part of your practical training during your degree?

0	1	2	3	4
Never	Rarely	Sometimes	Often	Very often

Q19. In my future profession, I am not likely to work with people with communication impairments.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q20. In my future profession, I am not likely to work with people with swallowing difficulties.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q21. I would like to learn more about working with people with communication difficulties

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q22. I would like to learn more about working with people with swallowing difficulties

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Part 3 – Confidence, knowledge, and experience: Working with speech-language pathologists (SLPs) and in teams (e.g., multidisciplinary, interdisciplinary etc.)

The following section will investigate students' confidence, knowledge, and experience working with SLPs and in teams (e.g., multidisciplinary, interdisciplinary etc.)

Q23. Have you referred an individual you have worked with during your practical training to a SLP or other professional due to concerns regarding their **communication and/or swallowing**?

- No
 Yes – please describe briefly

Q24. Have you ever received a referral from a SLP regarding an individual with a **communication and/or swallowing difficulty**?

- No
 Yes – please describe briefly

Please circle the place on the scale that applies to you.

Q25. I understand what a SLP does.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q26. I have worked with a SLP on a team (e.g., multidisciplinary, interdisciplinary etc.)

0	1	2	3	4
Never	Rarely	Sometimes	Often	Very often

Q27. I would not feel confident referring an individual who I think may have communication difficulties to a SLP.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q28. I would not feel confident referring an individual who I think may have swallowing difficulties to a SLP.

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q29. I would be comfortable working with SLPs to support individuals with communication impairment as part of a team (e.g., multidisciplinary, interdisciplinary etc.)

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Q30. I would be comfortable working with SLPs to support individuals with swallowing impairment as part of a team (e.g., multidisciplinary, interdisciplinary etc.)

0	1	2	3	4
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

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