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Degrees of separation: health literacy education in speech language pathology programs

Abstract

Objectives: To explore how Speech Language Pathology (SLP) leaders implement HLE within higher education SLP programs.

Introduction: Adequate health literacy skills are a vital aspect of an individual's quality of life and well-being. Low health literacy is related to low life expectancy and higher prevalence of disease and illness. Historically however, healthcare providers, such as SLPs have overlooked the health literacy skills of their clients. Currently, there is minimal data exists on whether SLP leaders are incorporating health literacy education (HLE) into their programs and student training.

Methods: An electronic survey was emailed to SLP leaders (i.e., administrators and/or faculty), who were members of SLP higher education programs accredited through the American Speech-Language Hearing Associations' (ASHA) Council on Academic Accreditation, questioning their implementation of HLE health and health literacy strategy (HLS) use.

Results: More than half (56%) of participants implemented HLE within their SLP programs. Only 4% *always* teach students why health literacy is important and 75% *never* instruct students to encourage clients to ask questions. Although HLE and HLS occurred in SLP programs, use of each varied greatly.

Conclusion: SLP leaders are implementing HLE; however, there is a lack of consistency in the HLS being taught. National SLP curriculum standards should be mandated to increase HLE instruction and consistency of HLS use. Future researchusing qualitative data is needed to gain a better understanding of how SLP leaders integrate HLE into their programs and why they value doing so. This could include how SLP leaders define and describe health literacy, how it is being taught and assessed, and why they believe HLE is important for their clients.

Keywords: health literacy, health literacy education, health literacy strategies, speech-language pathology

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Introduction

Health literacy is defined as "the degree to which individuals have the capacity to obtain, process, and I understand basic health information and services needed to make appropriate health decisions".[1,2] Unfortunately, over one-third of the adults in the United States (U.S.) have low or poor health literacy skills, leading to poor health outcomes[1] and negatively impacting an individual's quality of life and well-being.[3] Low health literacy is affiliated with an increase in health disparity, meaning that people with lower health literacy are also likely to have a lower level of education, lower level of income, decreased life expectancy, and higher prevalence of disease and illness.[3,4] Health literacy is critical for health promotion and general well-being of the patient.[5] However it is often overlooked by many health providers.[6,7]

Despite the critical importance of individuals having adequate health literacy skills, distribution of health information has failed to have a substantial impact beyond educated and economically advantaged populations.[8] This is largely due to the complexity of healthcare jargon and complicated calculations of medications. For example, instructions to take medications BID (three times per day) does not imply medications are to be taken at breakfast, lunch, and supper. Low health literacy compounds this problem and is a concern in healthcare because of the negative impact it has on health promotion and health outcomes. Health literacy escapes the attention and understanding of many healthcare providers[8,9] and can be a barrier to effective healthcare communication exchange.[10] Healthcare providers who do not understand their patients' health literacy levels can provide services that are misunderstood, underutilized or not practiced by their patients, leading to ineffective treatment and negative health outcomes.[6,11]

Speech-language pathology (SLP) is a healthcare profession that "identifies, evaluates, and treats speech and language problems, including swallowing disorders.[12] SLPs require frequent communication with patients and caregivers to ensure best practice.[12] SLPs often have lengthy consultations with patients and caregivers compared to primary healthcare providers.[13] SLPs who don't recognize and assist patients with low health literacy can provide instructions that patients do not comprehend, resulting in noncompliance and decreased health outcomes.

There is a dearth of research on health literacy and SLP. Minimal data exists on whether SLP leaders are incorporating health literacy education (HLE) into their programs and student training. Scholars report students in SLP programs have superficial knowledge of health literacy, and that there is a need for additional research in strategies for SLP leaders to combat low health literacy among their patients.[14]

Overall, poor health literacy can negatively impact an individual's quality of life, general well-being,[3] and raise the cost of health care.[5]

These findings support the need for further HLE in SLP programs. The implementation ofHLE in SLP programs could increase health literacy skills for clients served by these allied health professionals. Therefore, the purpose of this study was to explore how SLP leaders implement HLE within higher education SLP programs.

Methods

We used a cross-sectional design to determine if SLP leaders implement health literacy education (HLE) within their higher education SLP programs. We selected this design in order to study the prevalence of HLE in SLP programs by collecting data from numerous SLP leaders using a single survey.[15]

Participants

The study population included SLP leaders from higher education SLP programs accredited by the Council on Academic Accreditation (CAA). We selected participants from accredited programs because the accreditation status ensures that the SLP leaders are providing services of the highest professional quality.[16] Using the ASHA website, we formulated a list of SLP programs accredited by the CAA. A website search of each program provided the email addresses of 4,113 SLP leaders. We sent an email to these leaders across 262 SLP programs, inviting them to participate in the study. The email included a link that directed them to an electronic survey. Only SLP leaders were included in the study.

Testing instrument

We developed an electronic survey using Qualtrics© 2017 (Qualtrics, Provo, UT). The survey included an introduction, instructions for completion, and forty-three survey questions across three sections: 1) demographic questions, 2) HLE questions, and 3) Health Literacy Strategies (HLS) questions. Eleven demographic questions collected professional information about the SLP leaders and their programs (e.g., years of experience, departmental role, departmental location). We developed eight HLE questions to determine if health literacy is being taught, how often it is being taught, and who in the department teaches it. To determine which HLS strategies are being taught and the frequency of the instruction, we developed 26 HLS questions by using the health literacy strategies from the Agency for Healthcare Research and Quality[10] and the Health Literacy Universal Precautions Toolkit, 2nd Edition (HLUPT-2). The AHRQ commissioned the development, validation, and reliability of the toolkit in 2010[2] and was updated to the 2nd edition in 2016. The HLUPT-2 targets five main topics related to health literacy: 1) Awareness, 2) Spoken Communication, 3) Written Communication, 4) Self-Management and Empowerment, and 5) Supportive Systems. Each topic contains five strategies, except for Self-Management which contains six strategies, for an overall total of 26 health literacy strategies. Next, we transformed each strategy into a Likert-type question to determine the extent to which HLS was being taught in SLP programs. For example, one strategy to improve spoken communication is the use of plain, non-medical language. Therefore, we created a survey question to target that particular strategy, "How often do you instruct your students to use plain, non-professional jargon while communicating with clients?" HLE and HLS survey responses were obtained by using a 5-point Likert-type scale for each question (5= *always*, 4= *most of the time*, 3= *about half of the time*, 2=*some of the time*, 1= *never)*. The responses were condensed into sum scores of high, medium, and low frequencies for analysis across all five topics of health literacy. High, medium, and low frequencies were determined by calculating the sum of the numeric value assigned to each five-point Likert-type survey question regarding HLE. Participants with a sum score greater than or equal to104 were considered to be high frequency HLE users. Medium frequency HLE users were indicated by participants with a sum score ranging from 53 to 103. Participants with a sum score of less than or equal to 52 were considered to be low frequency HLE users.

Validity and reliability

The survey for this study was developed based on the HLUPT-2. Seven faculty in SLP and one scale development expert reviewed the survey to assess the degree of item relevance related to health literacy and to establish face and content validity. All of the experts agreed that the survey accurately reflected health literacy and correct internal structure and content. Expert professional judgment is an integral part of instrument development, including item content, item format, and measuring system.[17] For the reliability measure, the Cronbach alpha was .98, indicating a good level of internal consistency.

Statistical analysis

Descriptive statistics were used to determine the frequency of demographic data and how often participants reported using HLE and the HLS. We used chi-square (χ^2) analysis to explore how SLP leaders reported the relationship between SLP program demographics and the frequency of HLE and HLS use in higher education SLP programs. Cramer's V analysis was used to determine the strength of association between reported SLP program demographics, HLE and HLS variables. The thresholds provided by[18] were used to determine the strength of the results: *Very strong* (> 0.25), *Strong* (> 0.15), *Moderate* (> 0.10), *Weak* (> 0.05), and *No or very weak*(≤ 0.05 - 0).

Ethical consideration

The Institutional Review Board approved this study.

Results

After excluding partial and incomplete data, we performed data analyses of 423 surveys. Fifteen participants held an administrative role (4%), 406 indicated faculty status or holding a dual role of faculty and administrator (96%) (Table 1). The majority (52%) of the participants were employed at institutions with a student population over 10,000 that were classified as a Masters or Baccalaureate institution (55%). Most participants were located in health or science departments (67%), with nearly all (94%) of their programs existing for ten or more years and holding ASHA accreditation for ten or more years (92%). Nearly ninety percent (89%) of the participants reported that their SLP clinic was on-campus and most of the participants (56%) had 20 or more years of experience in SLP.

We performed numerous chi-square analyses to explore how SLP leaders reported the relationship between SLP demographics, HLE, and HLS. We also utilized Cramer's *V* to determine the strength and direction of the relationship between the SLP demographics, HLE, and HLS. Results from these analyses are summarized below.

Health literacy education

Results of the chi-square analysis (Table 2) that measured SLP demographics and HLE revealed a significant association $\chi^2(4, n=409) = 10.1$, $p = .039$, $V = .111$) between location of work time and high, medium, or low use of HLE in SLP programs, and also between years of SLP experience and high, medium, or low use of HLE in SLP programs, $\chi^2(4, n = 88) = 10.5$, $p = .032$, $V = .245$).

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Table 1 Participant demographics

Demographics	Number (N)	Percentage (%)
Implement HLE		
Yes	**215**	**54%**
No	**167**	**46%**
Department Role		
Administration	15	4%
Faculty/dual	406	96%
Size of Student Population		
Less than 10,000	42	48%
More than 10,000	46	52%
Department Location		
Education or Other	29	33%
Health or Sciences	59	67%
Institution Type		
Doctoral University	40	45%
Master's or Bac.	48	55%
Yrs. Of Program Existence		
Less than 10 yrs.	5	6%
More than 10 yrs.	83	94%
Yrs. ASHA Accredited		
Less than 10 yrs.	7	8%
More than 10 yrs.	81	92%
Number of Faculty		
Less than 10	40	45%
More than 10	48	55%
Clinic Location		
On campus	79	89%
Off campus	10	11%
Yrs. Of SLP Experience		
Less than 20 yrs.	32	36%
More than 20 yrs.	49	56%
Not an SLP	7	8%

Table 2 SLP Demographics and Health Literacy Education

			Health Literacy Education Use		
			Frequencies [n (%)]		
Demographics	**$\chi 2$**				
	p-value	**Cramer's V**	**Low Use**	**Medium Use**	**High Use**
Department Role					
Administration			15 (4%)	0 (0%)	0 (0%)
Faculty or Dual	0.068	0.113	298 (70%)	66 (16%)	42 (10%)

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Table Continued...

			Health Literacy Education Use		
			Frequencies [n (%)]		
Demographics	**χ2**				
	p-value	**Cramer's V**	**Low Use**	**Medium Use**	**High Use**
Location of Work Time					
Administration			22 (5%)	0 (0%)	0 (0%)
Faculty or Dual	.039*	0.111	280 (69%)	65 (16%)	42 (10%)
Size of Student Population					
Less than 10,000			14 (16%)	16 (18%)	12 (14%)
More than 10,000	0.195	0.193	18 (21%)	22 (25%)	6 (7%)
Department Location					
Education or Other			9 (10%)	15 (17%)	5 (5%)
Health or Sciences	0.525	0.121	23 (26%)	23 (26%)	13 (15%)
Institution Type					
Doctoral University			16 (18%)	19 (22%)	5 (6%)
Master's or Bac.	0.24	0.18	16 (18%)	19 (22%)	13 (15%)
Yrs. Of Program Existence					
Less than 10 yrs.	.		4 (5%)	1 (1%)	0 (0%)
More than 10 yrs.	0.104	0.227	28 (32%)	37 (42%)	18 (21%)
Yrs. ASHA Accredited					
Less than 10 yrs.			4 (5%)	2 (2%)	1 (1%)
More than 10 yrs.	0.492	0.127	28 (32%)	36 (41%)	17 (19%)
Number of Faculty					
Less than 10		.	15 (17%)	16 (18%)	9 (46%)
More than 10	0.84	0.063	17 (19%)	22 (25%)	9 (55%)
Clinic Location					
On campus			28 (32%)	33 (38%)	17 (19%)
Off campus	0.682	0.093	4 (5%)	5 (6%)	1 (1%)
Yrs. Of SLP Experience					
Less than 20 yrs.			7 (8%)	14 (16%)	11 (13%)
More than 20 yrs.			21 (24%)	23 (26%)	5 (6%)
Not a SLP	.032*	0.245	4 (5%)	1 (1%)	2 (2.3%)

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Health literacy strategy

We also performed chi-square and Cramer's *V* analysis on each of the five HLS categories. This included: 1) Awareness, 2) Spoken Communication, 3) Written Communication, 4) Self-Management and Empowerment, and 5) Supportive Systems. Below are the results of these chi-square tests.

Awareness

Results of the chi-square analysis that measured SLP demographics and awareness (Table 3) revealed a significant association $\chi^2(4, n = 409) = 16$, $p = .003$, $V = .140$) between location of work time and awareness. There was also a significant association between years of program existence and awareness, $\chi^2(2, n = 88) = 9.2$,$p = .010$, $V = .323$).

Table 3 SLP demographics and awareness

			Awareness		
			Frequencies [n (%)]		
Demographics	**X2**				
	p value	**Cramer's V**	**Low Use**	**Medium Use**	**High Use**
Department Role					
Administration			13 (3%)	1 (0.2%)	1 (.02%)
Faculty or Dual	0.249	0.081	275 (65%)	29 (7%)	102 (24%)
Location of Work Time					
Administration			22 (5%)	0 (0%)	0 (0%)
Faculty or Dual	.003**	0.198	155 (62%)	29 (7%)	103 (26%)
Size of Student Population					
Less than 10,000			5 (6%)	9 (10%)	28 (32%)
More than 10,000	0.502	0.125	8 (9%)	6 (7%)	32 (36%)
Department Location					
Education or Other			1 (1%)	6 (7%)	22 (25%)
Health or Sciences	0.107	0.225	12 (16%)	9 (10%)	38 (43%)
Institution Type					
Doctoral University			7 (8%)	7 (8%)	26 (30%)
Master's or Bac.	0.784	0.074	6 (7%)	8 (9%)	34 (39%)
Yrs. Of Program Existence					
Less than 10 yrs.			3 (3%)	1 (1%)	1 (1%)
More than 10 yrs.	.010**	0.323	`10 (11%)	14 (16%)	59 (56%)
Yrs. ASHA Accredited					
Less than 10 yrs.			3 (3%)	1 (1%)	3 (3%)
More than 10 yrs.	0.09	0.234	10 (11%)	14 (16%)	57 (65%)
Number of Faculty					
Less than 5			6 (7%)	8 (9%)	26 (30%)
More than 10	0.784	0.074	7 (8%)	7 (8%)	34 (39%)
Clinic Location					
On campus			10 (11%)	13 (15%)	55 (63%)
Off campus	0.305	0.164	3 (3%)	2 (2%)	5 (6%)
Yrs. Of SLP Experience					
Less than 20 yrs.			1 (1%)	6 (7%)	25 (28%)
More than 20 yrs.			10 (11%)	7 (8%)	32 (36%)
Not a SLP	0.142	0.198	2 (2%)	2 (3%)	3 (3%)

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Spoken communication

Years of SLP leader experience was the only variable that demonstrated any significant difference related to spoken communication. Results of the chi-square analysis revealed a significant association $\chi^2(4, n = 88) = 5.8, p = .053, V=.258)$ between years of SLP experience and spoken communication.

Written communication

Years of SLP leader experience was the only variable that demonstrated any significant difference related to written communication. Results of the chi-square analysis revealed a significant association $\chi^2(4, n = 88) = 10.5, p = .033, V=.244)$between years of SLP leader experience and written communication.

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Self-Management and empowerment

Results of the chi-square analysis (Table 4) that measured SLP demographics and self-management and empowerment revealed a significant association $\chi^2(4, n = 409) = 11.7, p = .019, V = .120$) between location of work time and self-management and empowerment. There was also a significant association between clinic location and self-management and empowerment, $\chi^2(2, n = 88) = 8.2, p = .016, V = .306$), as well as years of SLP leader experience and self-management and empowerment, $X^2(4, n = 88) = 10.0, p = .041, V = .238$).

Table 4 SLP demographics and self-management & empowerment

			Self-Management		
			Frequencies [n (%)]		
Demographics	**χ2**				
	p value	**Cramer's V**	**Low Use**	**Medium Use**	**High Use**
Department Role					
Administration			13 (3%)	2 (0.5%)	0 (0%)
Faculty or Dual	0.603	0.049	311 (74%)	82 (19%)	13 (3%)
Location of Work Time					
Administration			22 (5%)	0 (0%)	0 (0%)
Faculty or Dual	.019**	0.12	291 (71%)	83 (19%)	13 (2.7%)
Size of Student Population					
Less than 10,000			15 (17 %)	24 (27%)	3 (3%)
More than 10,000	0.797	0.072	19 (22%)	23 (26%)	4 (5%)
Department Location					
Education or Other			9 (10%)	18 (21%)	2 (2%)
Health or Sciences	0.518	0.122	25 (8%)	29 (33%)	5 (6%)
Institution Type					
Doctoral University			18 (21%)	18 (21%)	4 (5%)
Master's or Bac.	0.346	0.155	16 (18%)	29 (33%)	3 (3%)
Yrs. Of Program Existence					
Less than 10 yrs.			4 (5%)	1 (1%)	0 (0%)
More than 10 yrs.	0.104	0.227	30 (34%)	46 (52%)	7 (8%)
Yrs. ASHA Accredited					
Less than 10 yrs.			4 (5%)	2 (2%)	1 (1%)
More than 10 yrs.	0.38	0.148	30 (34%)	45 (51%)	6 (7%)
Number of Faculty					
Less than 10			13 (15%)	25 (28%)	3 (2%)
More than 10	0.265	0.174	21 (24%)	22 (25%)	5 (6%)
Clinic Location					
On campus			26 (30%)	45 (51%)	7 (8%)
Off campus	.016**	0.306	8 (9%)	2 (2%)	0 (0%)
Yrs. Of SLP Experience					
Less than 20 yrs.			6 (7%)	22 (25%)	4 (5%)
More than 20 yrs.			24 (27%)	23 (26%)	2 (2%)
Not a SLP	.041**	0.238	4 (5%)	2 (2%)	1 (1%)

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Supportive systems

Results of the chi-square analysis (Table 5) that measured SLP demographics and supportive systems revealed a significant association $\chi^2(4, n = 409) = 12.3$, $p = .015$, $V = .123$) between location of work time and supportive systems. There was also a significant association between years of SLP leader experience and supportive services, $\chi^2(4, n = 88) = 13.0$, $p = .012$, $V = .271$).

Table 5 SLP Demographics and Supportive Services

			Supportive Services		
			Frequencies [n (%)]		
Demographics	**X2**				
	p value	**Cramer's V**	**Low Use**	**Medium Use**	**High Use**
Department Role					
Administration			13 (3%)	2 (0.5%)	0 (0%)
Faculty or Dual	0.504	0.057	338 (80%)	38 (9%))	30 (7%)
Location of Work Time					
Administration			22 (5%)	0 (0%)	0 (0%)
Faculty or Dual	.015**	0.123	317 (78%)	40 (10%)	30 (7%)
Size of Student Population					
Less than 10,000			23 (26%)	11 (23%)	8 (9%)
More than 10,000	0.949	0.035	24 (27%)	12 (24%)	10 (11%)
Department Location					
Education or Other			16 (18%)	9 (10%)	4 (5%)
Health or Sciences	0.506	0.124	31 (35%)	14 (16%)	14 (16%)
Institution Type					
Doctoral University			21 (24%)	11 (13%)	8 (9%)
Master's or Bac.	0.965	0.028	26 (30%)	12 (14%)	10 (11%)
Yrs. Of Program Existence					
Less than 10 yrs.			4 (5%)	1 (1%)	0 (0%)
More than 10 yrs.	0.394	0.145	43 (49%)	22 (25%)	18 (21%)
Yrs. ASHA Accredited					
Less than 10 yrs.			4 (5%)	2 (2%)	1 (1%)
More than 10 yrs.	0.915	0.045	43 (49%)	21 24%)	17 (19%)
Number of Faculty					
Less than 10			22 (25%)	10 (11%)	8 (9%)
More than 10	0.962	0.03	25 (28%)	13 (15%)	10 (11%)
Clinic Location					
On campus			40 (46%)	20 (23%)	18 (21%)
Off campus	0.228	0.183	7 (8%)	3 (3%)	0 (0%)
Yrs. Of SLP Experience					
Less than 20 yrs.			13 (15%)	7 (8%)	12 (14%)
More than 20 yrs.			29 (33%)	16 (18%)	4 (5%)
Not a SLP	.012**	0.271	5 (6%)	0 (0%)	2 (2%)

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Discussion

SLP leaders who implement HLE reported over twenty years of experience in classroom and clinical instruction. The majority of participants implementing HLE worked at a university with a student population of more than 10,000. Their SLP programs are largely located within colleges of health or sciences, and their clinic is located on-campus. The participants who reported implementing HLE worked in SLP programs that existed for 10 or more years and had maintained ASHA accreditation for more than 10years.

Three of the five health literacy strategies (awareness, self-management and empowerment, and supportive services) were significantly related to the participants' demographics. Health literacy awareness strategies were more likely to be used when SLP leaders had more than 20years of SLP experience, and when the SLP program had been in existence longer than 10years. Health literacy self-management and empowerment strategies were more likely to be used by SLP leaders with more than 20years of SLP experience, and when the program had an on-campus clinic. Health literacy support services strategies were more likely to be used by SLP leaders with more than 20years SLP experience.

This inconsistency of SLP leaders using these health literacy strategies during instruction supports previous research demonstrating that health literacy escapes the attention and understanding of healthcare providers.[8] SLP leaders who do not provide consistent health literacy instruction increase the likelihood that future SLPs will not recognize, assess, and address clients and/or caregivers health literacy.

A large body of literature documents the effectiveness of addressing client and/or caregivers' health literacy, including improved health outcomes. However, if HLS is not taught by SLP leaders, then the future SLPs may contribute to higher healthcare costs, instances of inappropriate healthcare visits, and decreased life expectancy. Additionally, clients and/or caregivers with below adequate health literacy skills are more likely to have decreased quality of life as they are less able to actively participate in the healthcare decision-making process.[20]

Implications

Effective communication between a healthcare provider and their clients is facilitated through good health literacy practice. This improves the client's ability to understand health information and to play an active role in their own healthcare decisions. Unfortunately, our findings show that only about half of the SLP leaders in SLP higher education programs provided HLE to their students. Furthermore, the implementation of HLE is primarily limited to participants from larger universities with on-campus clinics, those who work in programs that have been in existence and accredited for more than 10years, and whose SLP leaders have over 20years of SLP experience. In addition, there is limited HLS with the majority of strategies being instructed with low frequency.

These findings suggest that SLP students from newly established programs, with a smaller student population and SLP leaders with fewer years of SLP experience, will likely receive little to no HLE training. The lack of health literacy instruction will thereby limit the future SLP's knowledge and use of HLS once they reach clinical practice and thereby negatively impacting the overall health outcomes of clients.

Recommendations

Since no HLE standards are in place for higher education SLP programs, an opportunity exists to develop and implement a health literacy curriculum in order to improve SLP student training and clinical practice. Immediate action to enhance SLP leaders' knowledge of health literacy and HLS is crucial. More education is needed for SLP leaders with fewer years of experience. SLP leaders should review how SLP programs at larger institutions implemented HLE and HLS. Open discussions about HLE/HLS between SLP leaders and program evaluators during the program accreditation process could facilitate increased HLE. Also, increasing health literacy presentations at state, regional, and national SLP conferences could promote the importance of HLE instruction. Lastly, implementing strategies from the HLUPT-2 provides a simple and thorough starting point for SLP program education and implementation of HLE.

Strengths and limitations

This study is the first to explore how Speech Language Pathology (SLP) leaders report the use of HLE within higher education SLP programs. Our data represents a sampling of SLP leaders from 74% of U.S. higher education SLP programs, and we used the evidenced-based HLUPT-2 to develop HLS survey questions. This also seems to be the first study to address the use of HLE and HLS within SLP programs.

There were also some limitations. The operational definition of health literacy was not included in the introduction of the survey to reduce the risk of influencing participants' responses to the survey questions. However, several participants commented that they were unfamiliar with the term *health literacy* and they believed this may have negatively impacted their responses. We did not determine if SLP leaders were teaching at the time of the survey or if they had their certificate of clinical competence. We were also unable to exclude retired SLP leaders or former SLP leaders who remained listed on SLP program website. Furthermore, we were unable to determine if similar or opposing responses were obtained from multiple participants of the same program. This study only examined how SLP leaders reported on demographic data in relation to the implementation of HLE. To fully determine the source of HLE implementation, it is important to consider an expansion of the kind of data collected and in data collection techniques.[21] Through quantitative analysis we were unable to determine the depth of the SLP leaders' perception regarding the use of HLE.

Conclusions

Findings from the study demonstrate the importance of health literacy among healthcare providers. However, higher education SLP programs do not have HLE standards to ensure the use of HLE. Our results indicate only about half of SLP leaders implement HLE, suggesting a lack of importance placed on health literacy training. By failing to teach future SLPs to assess and address the health literacy needs of their clients, the SLP can inadvertently interfere with their clients' optimal health outcomes. When SLP leaders struggle to implement HLE in their preparation programs, there is a separation between clinician knowledge and client understanding, which may negatively impact overall client health care and well-being. Health literacy education decreases these degrees of separation. SLP leaders willing to acknowledge the importance of health literacy education favors the client's quality of life. We call for further investigation using

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qualitative data to gain a better understanding of how SLP leaders integrate HLE into their programs and why they value doing so. There are potentially other variables, such as how SLP leaders define and describe health literacy, how it is being taught and assessed, and why they believe it is important for their clients. Therefore, future research should be conducted to examine these issues.

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Conflicts of interest

No conflicts of interest exist.

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None.

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