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EVALUATING THE APPREHENSION REGARDING SPEECH INTERVENTIONS FOR VELOPHARYNGEAL DYSFUNCTION AMONG SPEECH AND LANGUAGE PATHOLOGISTS

Original Research

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ABSTRACT

Background: Velopharyngeal dysfunction (VPD) is a complex speech disorder that poses substantial challenges for speech-language pathologists, particularly in accurate assessment, treatment planning, and interdisciplinary coordination. Despite its reported occurrence in 10–40% of individuals following cleft palate repai, limited attention has been given to the professional confidence and apprehension of clinicians managing this condition. Understanding these factors is essential, as clinician uncertainty may influence decision-making, referral patterns, and overall quality of care for individuals with VPD.

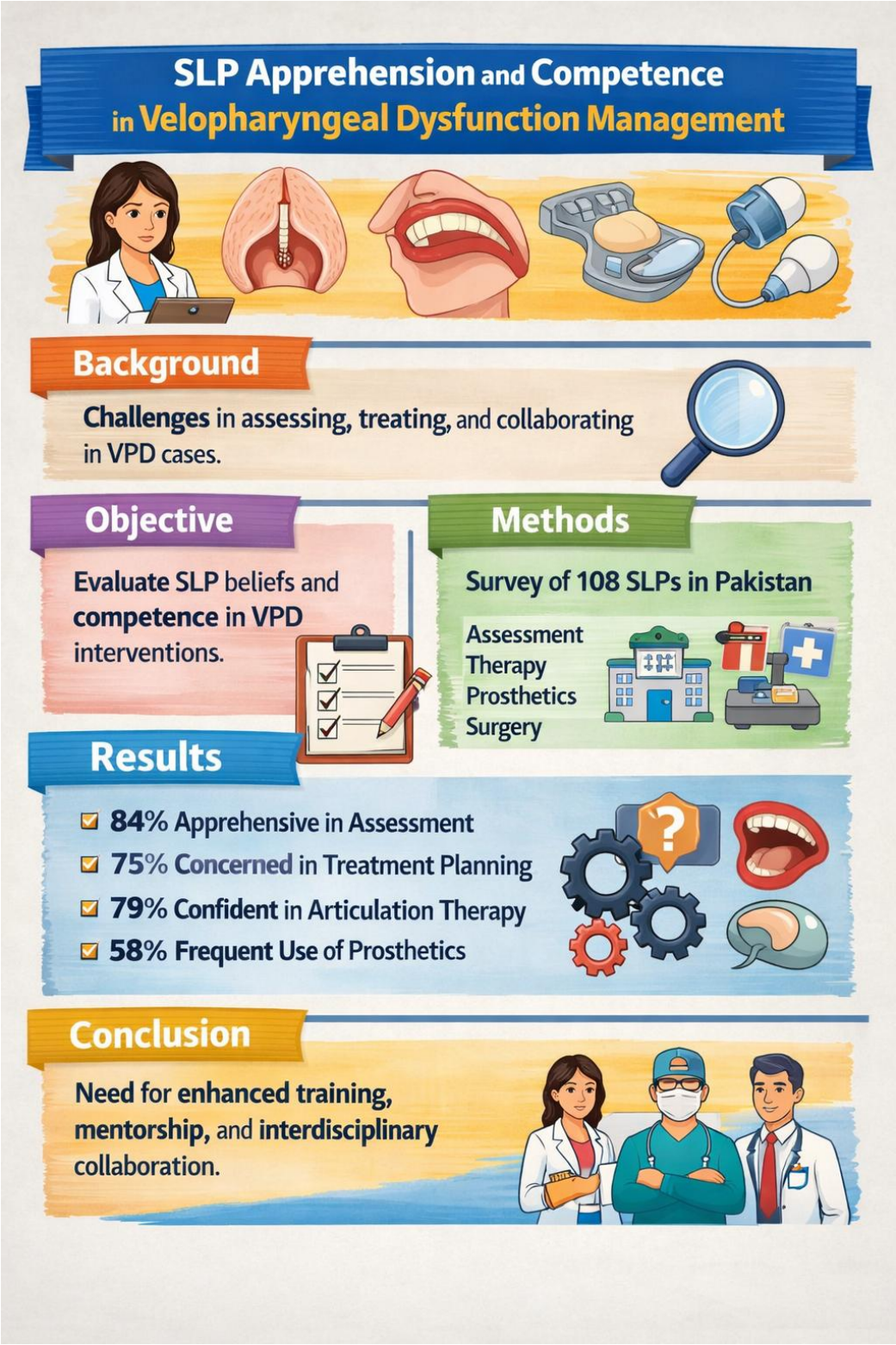
Objective: This study aimed to evaluate the level and specific domains of apprehension and perceived competence among speech-language pathologists regarding speech interventions for velopharyngeal dysfunction.

Methods: A cross-sectional descriptive survey was conducted among 108 practicing speech-language pathologists working in hospitals, clinics, private practices, and rehabilitation centers in Pakistan. Data were collected using a structured, self-administered questionnaire comprising demographic variables and 17 closed-ended items assessing apprehension and competence across six domains: assessment and treatment planning, articulation therapy, voice and resonance therapy, prosthetic management, surgical collaboration, and compensatory strategies. Responses were recorded on a five-point Likert scale. Descriptive statistical analysis was performed using SPSS version 20.

Results: The sample was predominantly female (89.8%), with most participants having 2–5 years of clinical experience (81.5%) and holding a bachelor's degree (83.1%). Apprehension during VPD assessment was reported at least sometimes by 84.1% of participants, while 75.3% reported similar levels of concern during treatment planning. Concerns regarding intervention effectiveness were reported often or always by 74.1% of respondents, and 73.2% reported feeling overwhelmed by the complexity of VPD. In contrast, strong confidence was observed in articulation therapy, with 43.5% always targeting specific phonemes and 50.0% consistently applying correct placement techniques. Pre- and post-surgical speech assessment was performed often or always by 76.0% of participants. Prosthetic devices were frequently used by 36.1%, while only 61.2% reported consistent confidence in overall VPD intervention knowledge, despite 76.9% believing they could manage case complexity.

Conclusion: Speech-language pathologists demonstrated solid technical competence in specific intervention domains but reported substantial uncertainty regarding comprehensive VPD management and treatment outcomes. These findings highlight the need for enhanced training, structured mentorship, and stronger interdisciplinary collaboration to improve clinical confidence and optimize care for individuals with velopharyngeal dysfunction.

Keywords: Cleft Palate, Clinical Competence, Professional Practice, Speech Disorders, Speech-Language Pathology, Velopharyngeal Insufficiency, Velopharyngeal Dysfunction



INTRODUCTION

Velopharyngeal dysfunction (VPD) is a complex and clinically significant disorder characterized by the failure of the velopharyngeal valve to close appropriately during speech and swallowing, resulting from structural abnormalities, neuromuscular impairment, or maladaptive learned behaviors (1). Effective velopharyngeal function depends on the coordinated movement of the soft palate, lateral pharyngeal walls, and posterior pharyngeal wall to achieve adequate separation between the oral and nasal cavities during speech production (2). Disruption of this mechanism commonly leads to hypernasality, audible nasal air emission, reduced speech intelligibility, and secondary psychosocial consequences that can substantially impair communication effectiveness and overall quality of life. Persistent velopharyngeal insufficiency (VPI) remains a frequent

complication following primary cleft palate repair, with reported prevalence ranging from 10% to 40%, while approximately one quarter of individuals with submucous cleft palate are affected (3). Clinically, VPD is broadly categorized into velopharyngeal insufficiency, in which structural inadequacy prevents closure; velopharyngeal incompetence, where neuromuscular control is impaired; and velopharyngeal mislearning, in which inappropriate articulation patterns persist despite adequate anatomy (4,5). Each subtype presents distinct diagnostic challenges and therapeutic demands, underscoring the need for nuanced clinical judgment and specialized expertise. Speech-language pathologists (SLPs) play a central role in the multidisciplinary management of VPD, contributing to perceptual speech assessment, differential diagnosis of resonance and articulation disorders, treatment planning, and implementation of targeted interventions (6,7). Their responsibilities extend to identifying compensatory articulation patterns, collaborating with surgeons and prosthodontists, coordinating pre- and post-surgical evaluations, and delivering evidence-based speech therapy tailored to individual patient needs (8). Effective VPD management therefore requires SLPs to possess a comprehensive understanding of velopharyngeal anatomy and physiology, surgical and prosthetic options, and specialized therapeutic approaches.

Despite this recognized importance, emerging evidence suggests considerable variability in SLPs' confidence and perceived competence in managing VPD. Differences in clinical opinions and practices have been documented, particularly in assessment protocols, treatment decision-making, and perceptions of intervention efficacy for hypernasality and nasal air emission (9). This uncertainty is further compounded by the inherently complex nature of VPD intervention, which may involve articulation and resonance therapy, use of prosthetic devices such as palatal obturators or speech bulbs (10), and close coordination with surgical teams for procedures including pharyngeal flap or sphincter pharyngoplasty (11). Such advanced competencies are not always uniformly addressed in general SLP training programs. Beyond technical expertise, VPD management demands sophisticated clinical decision-making regarding timing of intervention, selection of surgical versus prosthetic management, and realistic prognostication of outcomes. These decisions require not only experience but also professional confidence and trust in clinical judgment, with clinician apprehension potentially influencing referral patterns, treatment choices, and patient outcomes (12). The lack of universally standardized clinical guidelines and the wide diversity of assessment and treatment approaches reported across practice settings further contribute to clinician uncertainty (8). Although multidisciplinary care involving SLPs, surgeons, otolaryngologists, and prosthodontists has been associated with improved speech outcomes (13), the degree of SLP involvement and interdisciplinary integration varies considerably. While surgical interventions have demonstrated favorable outcomes, with improvement in hypernasality reported in up to 85% of cases following pharyngoplasty (14), optimal results are consistently linked to the integration of appropriate speech therapy (15). Nevertheless, limited evidence exists regarding the specific domains in which SLPs experience apprehension or lack confidence when managing individuals with VPD, particularly across assessment, treatment planning, therapeutic technique selection, and interdisciplinary collaboration. The objective of the present study is therefore to systematically investigate the level and specific areas of clinical apprehension among practicing SLPs in the management of velopharyngeal dysfunction, with the rationale of identifying gaps in confidence related to assessment, intervention strategies, prosthetic and surgical coordination, and compensatory management, in order to inform targeted educational initiatives and strengthen clinical practice.

METHODS

This study employed a cross-sectional descriptive design conducted over a six-month period from August 2024 to November 2024, with the objective of assessing the level of uncertainty and apprehension related to speech intervention practices for velopharyngeal dysfunction among practicing speech-language pathologists. Data were collected from multiple clinical settings in Lahore, Pakistan, to ensure representation across diverse practice environments, including tertiary care hospitals (Lahore General Hospital, The Children's Hospital Lahore, Mayo Hospital, and PSRD Hospital), rehabilitation centers (Bases and Mind Professionals), and private clinical practices. This multi-setting approach was adopted to capture variability in clinical exposure and service delivery models related to VPD management. A total of 108 speech-language pathologists were recruited using a probability-based random sampling technique. Eligibility criteria included actively practicing SLPs with a minimum qualification of a bachelor's degree or diploma in speech-language pathology, clinical experience ranging from 2 to 8 years, current employment in a hospital or private clinical setting, and willingness to provide informed consent. Professionals from other disciplines involved in VPD management, such as otolaryngologists and craniofacial surgeons, as well as undergraduate SLP students, were excluded to maintain homogeneity of the sample and focus specifically on SLP clinical perspectives. The sample size was calculated using Epi Info software, ensuring adequate statistical representation for descriptive analysis.

Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument consisted of two sections. The first section gathered demographic and professional information, including age, gender, highest educational qualification, years of clinical experience, current workplace setting, and prior exposure to patients with velopharyngeal dysfunction. The second section comprised 17 closed-ended items designed to explore levels of apprehension and perceived expertise across six core domains of VPD management: assessment and treatment planning, articulation therapy, voice and resonance therapy, use of prosthetic devices, collaboration with surgical teams, and management of compensatory strategies. Responses were recorded using a five-point Likert scale ranging from "Always" to "Never," allowing graded assessment of confidence and uncertainty across clinical domains. Prior to data collection, the questionnaire was reviewed for face clarity and

content relevance to ensure comprehensibility and alignment with the study objectives. Data analysis was performed using the Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistical methods were applied to summarize demographic characteristics and response patterns. Frequencies and percentages were calculated for categorical variables, while tabular and graphical representations were used to illustrate distributions of responses across the different domains of VPD intervention. Given the exploratory nature of the study, no inferential statistical tests were applied, and analysis was restricted to descriptive interpretation of observed trends. Ethical approval for the study was obtained from the Institutional Review Board (IRB) of the University of Health Sciences, Lahore. All participants were provided with written informed consent forms in both English and Urdu prior to enrollment. Participation was voluntary, and respondents were informed of their right to withdraw from the study at any stage without any consequence. Confidentiality was strictly maintained by anonymizing data through coding procedures, and no identifying information was disclosed or stored in a manner that could compromise participant privacy.

RESULTS

A total of 108 practicing speech-language pathologists participated in the study. The sample was predominantly female, with 98 participants (89.8%), while males accounted for 11 participants (10.2%). Most respondents had early to mid-career clinical experience, with 88 participants (81.5%) reporting 2–5 years of practice, followed by 13 participants (12.0%) with 6–8 years and 8 participants (6.5%) with more than 8 years of experience. In terms of academic qualifications, the majority held a bachelor's degree (n=89, 83.1%), while 25 participants (23.1%) had completed a master's degree and 4 participants (3.8%) reported other professional qualifications. Employment settings were diverse, with hospital-based practice being most common (n=43, 39.8%), followed by private practice (n=21, 19.4%), rehabilitation centers (n=20, 18.5%), clinics (n=16, 14.8%), and other settings (n=8, 8.4%). Exposure to patients with velopharyngeal dysfunction varied, with most respondents reporting novice to intermediate experience, while smaller proportions identified as having advanced or expert-level exposure, and a minority reported no prior experience with VPD cases. Regarding evaluation and treatment planning, apprehension was commonly reported. A substantial proportion of participants indicated feeling apprehensive at least occasionally during VPD assessment, with 45 respondents (41.7%) reporting "sometimes," 32 (32.4%) "always," and 11 (10.2%) "often," while only 18 participants (16.8%) reported feeling apprehensive seldom or never. Similar patterns were observed in treatment planning, where 80 participants (75.3%) experienced apprehension ranging from "sometimes" to "always," and fewer respondents reported minimal or no apprehension. Concerns about the effectiveness of speech interventions were prominent, as 80 participants (74.1%) reported being often or always concerned, and only a small proportion reported seldom or no concern. The perceived complexity of VPD management was also evident, with 80 respondents (73.2%) reporting feeling overwhelmed at least some of the time.

In contrast, higher confidence levels were observed in articulation therapy skills. Most participants reported consistent engagement in targeting specific phonemes, with 47 respondents (43.5%) indicating "always" and 39 (36.1%) "often." Similarly, techniques focusing on correct placement and manner of articulation were frequently applied, with 54 participants (50.0%) reporting "always" and 31 (28.8%) "often." Knowledge related to voice and resonance therapy was also relatively strong. Awareness of suprasegmental features affected by VPD was reported as "often" or "always" by 82 participants (75.1%), and familiarity with goals and techniques of voice therapy was reported by 79 participants (73.2%) at these same frequency levels. Use of prosthetic devices such as palatal obturators and speech bulbs showed greater variability. Regular or frequent use was reported by 63 participants (58.3%), while 28 participants (25.9%) reported occasional use, and smaller proportions reported seldom or no use. Knowledge regarding the functional role of prosthetic devices in VPD management followed a similar distribution, with just over half of respondents indicating frequent familiarity. Collaboration with surgical teams appeared comparatively strong. Pre- and post-surgical speech assessments were performed "often" or "always" by 81 participants (76.0%). Confidence in combining surgical intervention with speech therapy was reported by 71 participants (65.8%) at "often" or "always" levels. Professional consultation was also common, with 72 participants (66.7%) reporting frequent or consistent consultation with colleagues regarding VPD management.

With respect to compensatory strategies, most respondents perceived these approaches as effective, with 79 participants (74.2%) reporting "often" or "always." A similar proportion believed that compensatory strategies could, in some cases, be comparable to surgical intervention, as indicated by 74 respondents (69.6%) reporting frequent or consistent agreement. Overall self-perceived competence indicated that 67 participants (61.2%) felt confident in their general knowledge of speech interventions for VPD at "often" or "always" levels. Furthermore, 84 participants (76.9%) reported that they felt capable of managing the clinical complexity of VPD most of the time. Comparative analysis demonstrated meaningful variation in reported apprehension across professional characteristics. Speech-language pathologists with shorter clinical experience (2–5 years) reported higher levels of apprehension during evaluation and treatment planning compared to those with longer experience. Among clinicians with 2–5 years of experience, 68.2% reported feeling apprehensive "often" or "always," whereas this proportion declined to 46.2% among those with 6–8 years of experience and further to 37.5% among those with more than 8 years of experience. A similar gradient was observed for perceived overwhelm related to VPD complexity, with early-career clinicians reporting the highest frequency of feeling overwhelmed. Educational qualification also showed variation in apprehension levels. Participants holding bachelor's

degrees demonstrated higher rates of frequent apprehension ("often" or "always") in assessment and treatment planning compared to those with master's degrees (64.0% vs 44.0%). Respondents with postgraduate qualifications more frequently reported confidence in managing intervention effectiveness and complex clinical decision-making. Differences were additionally observed across workplace settings. Hospital-based SLPs reported comparatively lower levels of frequent apprehension (52.4%) than those working in private practice (66.7%) and rehabilitation centers (65.0%). Clinicians working in multidisciplinary hospital environments more commonly reported confidence in surgical collaboration and treatment planning, whereas those in private or clinic-based settings more frequently reported uncertainty, particularly regarding intervention effectiveness and prosthetic management. Overall, higher clinical experience, advanced educational qualification, and hospital-based practice were associated with reduced levels of reported apprehension and greater perceived competence across core domains of VPD management.

Table 1: Demographic Characteristics of Participants (n = 108)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	98	89.8
	Male	11	10.2
Years of Clinical Experience	2–5 years	88	81.5
	6–8 years	13	12.0
	>8 years	8	6.5
Highest Educational Qualification	Bachelor's degree	89	83.1
	Master's degree	25	23.1
	Other	4	3.8
Current Workplace Setting	Hospital	43	39.8
	Private practice	21	19.4
	Rehabilitation center	20	18.5
	Clinic	16	14.8
	Other	8	8.4

Table 2: Apprehension in Evaluation, Treatment Planning, and Perceived Complexity of VPD

Domain	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)
Apprehension during assessment	32 (32.4)	11 (10.2)	45 (41.7)	8 (6.5)	10 (9.3)
Apprehension during treatment planning	23 (21.3)	19 (18.6)	38 (35.2)	16 (14.8)	12 (11.1)
Concern about intervention effectiveness	41 (38.0)	39 (36.1)	20 (18.5)	6 (5.6)	2 (1.9)
Feeling overwhelmed by VPD complexity	10 (9.3)	32 (29.6)	38 (34.3)	24 (22.2)	4 (3.8)

Table 3: Competence in Articulation, Voice, and Resonance Therapy

Domain	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)
Targeting specific phonemes	47 (43.5)	39 (36.1)	20 (18.5)	2 (1.9)	0 (0.0)
Correct placement and manner techniques	54 (50.0)	31 (28.8)	14 (13.0)	8 (6.5)	2 (1.9)

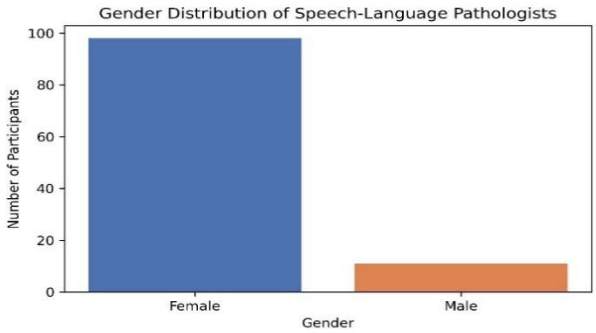
Awareness of suprasegmental features	44 (40.8)	38 (34.3)	19 (18.6)	6 (5.6)	2 (1.9)
Knowledge of voice therapy goals and techniques	44 (40.8)	35 (32.4)	16 (14.8)	13 (12.0)	0 (0.0)

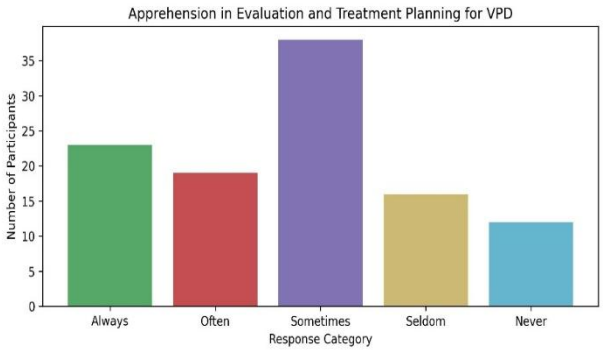
Table 4: Prosthetic Use, Surgical Collaboration, Compensatory Strategies, and Overall Competence

Domain	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)
Use of prosthetic devices	24 (22.2)	39 (36.1)	28 (25.9)	13 (12.0)	4 (3.8)
Knowledge of prosthetic function	24 (22.2)	39 (36.1)	28 (25.9)	13 (12.0)	0 (0.0)
Pre-/post-surgical speech assessment	40 (38.0)	41 (38.0)	22 (20.4)	4 (3.8)	1 (0.9)
Belief in surgery + speech therapy	37 (34.3)	34 (31.5)	25 (23.1)	10 (9.3)	2 (1.9)
Consultation with colleagues	38 (35.2)	34 (31.5)	22 (20.4)	12 (11.1)	2 (1.9)
Effectiveness of compensatory strategies	49 (45.4)	30 (28.8)	25 (23.1)	4 (3.8)	0 (0.0)
Compensatory strategies vs surgery	30 (28.8)	44 (40.8)	20 (18.5)	12 (11.1)	2 (1.9)
Overall confidence in VPD intervention	29 (26.9)	38 (34.3)	25 (23.1)	11 (10.2)	5 (4.6)
Ability to manage VPD complexity	28 (25.0)	56 (51.9)	18 (16.8)	6 (5.6)	1 (0.9)

Table 5: Apprehension During Assessment and Treatment Planning by Professional Characteristics

Variable	Category	Often/Always n (%)	Sometimes n (%)	Seldom/Never n (%)
Years of Clinical Experience	2–5 years (n=88)	60 (68.2)	20 (22.7)	8 (9.1)
	6–8 years (n=13)	6 (46.2)	5 (38.5)	2 (15.3)
	>8 years (n=8)	3 (37.5)	3 (37.5)	2 (25.0)
Educational Qualification	Bachelor's degree (n=89)	57 (64.0)	21 (23.6)	11 (12.4)
	Master's degree (n=25)	11 (44.0)	9 (36.0)	5 (20.0)
	Other (n=4)	2 (50.0)	1 (25.0)	1 (25.0)
Workplace Setting	Hospital (n=43)	23 (52.4)	13 (30.2)	7 (16.4)
	Private practice (n=21)	14 (66.7)	5 (23.8)	2 (9.5)
	Rehabilitation center (n=20)	13 (65.0)	5 (25.0)	2 (10.0)
	Clinic/Other (n=24)	15 (62.5)	6 (25.0)	3 (12.5)





DISCUSSION

The present study provided a detailed exploration of apprehension and perceived competence among speech-language pathologists involved in the management of velopharyngeal dysfunction, revealing a nuanced pattern in which strong technical skills coexisted with considerable uncertainty related to clinical complexity and treatment outcomes. Overall, the findings suggested that while many clinicians felt confident performing discrete therapeutic tasks, they simultaneously experienced apprehension when required to integrate assessment findings, plan interventions, and predict outcomes in a condition as multifaceted as VPD. The demographic profile of the sample, particularly the predominance of female participants, reflected the established gender distribution within the speech-language pathology profession globally and regionally. The high proportion of early-career clinicians and those reporting novice to intermediate exposure to VPD cases was a clinically meaningful observation, as limited exposure to complex caseloads has been associated with reduced confidence in specialized areas of practice. This workforce composition provided important context for understanding the elevated levels of apprehension observed across several domains of VPD management, particularly in assessment and treatment planning. Educational background further contextualized these findings. The predominance of bachelor's-level qualifications mirrored the current professional training structure in Pakistan, where undergraduate education remains the primary entry point into practice. In contrast to systems where postgraduate training is increasingly emphasized, this structure may limit early exposure to advanced clinical reasoning, interdisciplinary coordination, and specialized populations such as VPD. Differences observed between clinicians with bachelor's and master's level education supported the notion that advanced academic preparation may contribute to greater confidence in managing complex clinical decisions, even when technical skill levels appear comparable.

One of the most salient findings was the high level of apprehension reported during assessment and treatment planning. This observation aligned with previous literature documenting wide variability in clinician approaches to cleft-related and resonance disorders, and persistent uncertainty regarding optimal assessment protocols and intervention pathways (16). Accurate assessment is the foundation of effective VPD management, yet it requires sophisticated differential diagnosis between structural insufficiency, neuromuscular incompetence, and learned misarticulations. The cognitive load associated with integrating perceptual judgment, instrumental assessments, and interdisciplinary input may explain why apprehension was particularly pronounced in this domain, especially among less experienced clinicians (17). Concern regarding treatment effectiveness emerged as another prominent theme. A substantial proportion of participants expressed frequent or constant uncertainty about whether their interventions produced meaningful outcomes. This finding echoed prior evidence highlighting gaps and inconsistencies in existing clinical guidelines and the heterogeneity of therapeutic approaches for VPD (18). In the absence of standardized outcome measures and clear decision algorithms, clinicians may struggle to evaluate progress objectively, reinforcing anxiety related to treatment efficacy. In contrast, respondents demonstrated strong confidence in articulation therapy and voice and resonance interventions. These areas represent core competencies in speech-language pathology training and are typically grounded in structured, skill-based techniques. The comfort observed in these domains suggested that clinicians were well prepared to address compensatory articulation errors and resonance-related features, which are common sequelae of VPD (19). However, the coexistence of technical competence with broader uncertainty highlighted a potential disconnect between executing individual techniques and integrating them into comprehensive, patient-specific management plans.

The moderate use of prosthetic devices reflected contemporary trends in VPD management, where advances in surgical techniques have reduced reliance on prosthetics for many patients. Nevertheless, prosthetic interventions remain clinically relevant for individuals who are not surgical candidates or who exhibit residual velopharyngeal insufficiency (20). Variability in prosthetic use may therefore represent appropriate case selection, but it may also indicate limited access to prosthodontic services or insufficient training in this area. Collaboration with surgical teams was relatively strong, particularly in pre- and post-surgical assessment, which aligned with best-practice recommendations emphasizing the central role of SLPs within multidisciplinary cleft and craniofacial teams (21). Nonetheless, the less consistent endorsement of combined surgical–speech approaches and consultation-seeking behavior suggested room for strengthening interdisciplinary communication. Given that integrated management has been shown to optimize speech outcomes following surgical intervention, enhancing collaborative frameworks remains a key area for professional development (22). The generally positive perception of compensatory strategies reflected an appreciation of individualized, patient-centered management, recognizing that not all cases of VPD require surgical correction. This perspective was consistent with contemporary treatment philosophies that emphasize functional outcomes and tailored intervention pathways rather than uniform procedural approaches (23). At the same time, the coexistence of high perceived capability with ongoing uncertainty in planning and outcome prediction revealed an important internal tension in clinical self-perception.

This apparent contradiction, wherein most participants felt capable of managing VPD complexity but fewer reported consistent confidence in planning interventions, suggested a nuanced form of professional self-awareness. Rather than reflecting overconfidence, the pattern appeared to indicate recognition of clinical limitations and the inherent uncertainty of managing

complex disorders. Such metacognitive awareness is often associated with professional maturity and ethical clinical practice, even when it manifests as apprehension. The study possessed several strengths, including sampling across multiple clinical settings and focusing on a clinically underexplored construct of practitioner apprehension. However, limitations must be acknowledged. The geographic restriction to Lahore limited generalizability to other regions with different training structures and healthcare systems. The reliance on self-reported data introduced the possibility of response bias, and perceived competence may not accurately reflect actual clinical performance. Additionally, the cross-sectional design precluded assessment of how confidence and apprehension evolve over time. Future research would benefit from longitudinal designs examining how clinical experience, mentorship, and targeted training influence apprehension trajectories. Investigating the relationship between clinician confidence and patient outcomes would further clarify the practical implications of professional uncertainty. Structured mentorship programs, enhanced exposure to instrumental assessment, and standardized decision-making frameworks may represent meaningful strategies to bridge the gap between technical skill and clinical confidence in the management of velopharyngeal dysfunction.

CONCLUSION

This study demonstrated that speech-language pathologists managing velopharyngeal dysfunction often experience notable uncertainty regarding clinical complexity and intervention effectiveness, despite possessing adequate technical skills in key therapeutic areas. The findings highlight a critical gap between procedural competence and integrated clinical confidence, underscoring the need for enhanced training approaches that emphasize diagnostic reasoning, treatment planning, and outcome evaluation. Strengthening structured mentorship, expanding interdisciplinary collaboration, and integrating advanced VPD-focused education into professional development pathways may substantially improve clinician confidence and, in turn, optimize the quality of care delivered to individuals with velopharyngeal dysfunction.

AUTHOR's CONTRIBUTION:

Author	Contribution
Ayesha Rashid	Conceptualization, Methodology, Formal Analysis, Writing - Original Draft, Validation, Supervision
Masooma Rubab	Methodology, Investigation, Data Curation, Writing - Review & Editing
Minahl Rafiq	Investigation, Data Curation, Formal Analysis, Software
Madiha Maqsud	Software, Validation, Writing - Original Draft

REFERENCES

1. Alam, M. K. & Alfawzan, A. A. 2020. Dental Characteristics Of Different Types Of Cleft And Non-Cleft Individuals. Frontiers In Cell And Developmental Biology, 8, 789.
2. Alighieri, C., Hodges, A., Verbeke, J., Kestens, K., Bettens, K., Albite, R., May Tan, R. & Van Lierde, K. M. 2024. Effects Of Suspension Pharyngeal Flap On Speech In Filipino Individuals With Velopharyngeal Insufficiency. Folia Phoniatrica Et Logopaedica: Official Organ Of The International Association Of Logopedics And Phoniatrics (Ialp), 1-13.
3. Arganbright, J. 2024. Surgical Management Of Velopharyngeal Dysfunction. Facial Plastic Surgery Clinics, 32, 69-83.
4. Carvajal, D. C. Á., Inostroza-Allende, F., Meneses, M. B. G. & Villarroel, C. G. 2023. Speech Outcomes And Velopharyngeal Function In Children Undergoing Submucous Cleft Palate Repair. Journal Of Craniofacial Surgery, 34, 1766-1771.
5. Charters, E., Pelham, C., Novakovic, D., Madill, C. & Clark, J. 2023. Velopharyngeal Incompetence Following Transoral Robotic Surgery For Oropharyngeal Carcinoma: A Scoping Review. International Journal Of Speech-Language Pathology, 25, 540-548.
6. Fersing, C., Thevarajah, D., Sanquer, E., Chapuis, C., Amelot, A., Fougeron, C., Aljancic, L., Picard, A. & Kadlub, N. 2024. Validation Of An Objective Assessment Tool For Velopharyngeal Insufficiency In Cleft Lip And Palate Children. Journal Of Stomatology, Oral And Maxillofacial Surgery, 101968.
7. Haenssler, A. E., Fang, X. & Perry, J. L. 2020. Effective Velopharyngeal Ratio: A More Clinically Relevant Measure Of Velopharyngeal Function. Journal Of Speech, Language, And Hearing Research, 63, 3586-3593.
8. Hardin-Jones, M., Jones, D. L. & Dolezal, R. C. 2020. Opinions Of Speech-Language Pathologists Regarding Speech Management For Children With Cleft Lip And Palate. The Cleft Palate-Craniofacial Journal, 57, 55-64.
9. Hussain, S. A., Vijayakumar, C., Balasubramanian, S., Rahavi-Ezabadi, S., Sundar, V., Sybil, D. & Hussain, Z. 2024. Management Of Velopharyngeal Dysfunction (Vpd) Following Cleft Palate Repair: A Comprehensive Decision-Making Process Based On Severity And Structural Deficiencies. The Cleft Palate Craniofacial Journal, 10556656231225573.
10. Johansson, M. S., Becker, M., Eriksson, M., Stiernman, M. & Klintö, K. 2024. Surgical Treatment Of Velopharyngeal Dysfunction: Incidence And Associated Factors In The Swedish Cleft Palate Population. Journal Of Plastic, Reconstructive & Aesthetic Surgery, 90, 240-248.
11. Kuwabara, M. S., Sitzman, T. J., Szymanski, K. A., Perry, J. L., Miller, J. H. & Cornejo, P. 2024. The Pediatric Neuroradiologist's Practical Guide To Capture And Evaluate Pre-And Postoperative Velopharyngeal Insufficiency. American Journal Of Neuroradiology, 45, 9-15.

12. Lambert, E. M., You, P., Kacmarynski, D. S. & Rosenberg, T. L. 2021. Adenoidectomy And Persistent Velopharyngeal Insufficiency: Considerations, Risk Factors, And Treatment. International Journal Of Pediatric Otorhinolaryngology, 149, 110846.
13. Mata-Pose, L., Mayo-Yáñez, M., Chiesa-Estomba, C. M., Lechien, J. R., Vaira, L. A., Maniaci, A., Saibene, A. M., Calvo-Henríquez, C. & Cabo-Varela, I. 2023. Velopharyngeal Incompetence In Musicians: A State-Of-The-Art Review. Journal Of Personalized Medicine, 13, 1477.
14. Miyagawa, S., Yaguchi, H., Kunieda, K., Ohno, T. & Fujishima, I. 2024. Speech-Swallow Dissociation Of Velopharyngeal Incompetence With Pseudobulbar Palsy: Evaluation By High-Resolution Manometry. Dysphagia, 1-10.
15. Mohamed, N. M., Zayed, A. M., Amer, A. M., El-Sabbagh, A. H. & Shouman, O. O. 2022. A Multidisciplinary Approach To Sphincter Pharyngoplasty For Correction Of Velopharyngeal Dysfunction Following Repair Of Cleft Palate. Chinese Journal Of Plastic And Reconstructive Surgery, 4, 105-109.
16. Nam, S. M., Kim, Y. B., Park, K. C., Park, E. S., Choi, C. Y., Cha, H. G. & Jung, S. A. 2022. Speech Outcomes Of Treatment For Velopharyngeal Insufficiency: Combined Use Of An Overlapping Intravelar Veloplasty And Dynamic Sphincter Pharyngoplasty. Annals Of Plastic Surgery, 88, 518-523.
17. Ovadia, S. A., Smartz, T. & Thaller, S. R. 2024. Management Of Velopharyngeal Insufficiency Associated With Cleft Palate: Sphincter Pharyngoplasty And Pharyngeal Flap. Journal Of Craniofacial Surgery, 10.1097.
18. Paul, N., Augustine, C., Sharma, U. A., Nishant, K. & Jyotsna, S. 2020. Intensive Speech Therapy Programme Combined With A Speech Bulb Prosthesis In The Prosthodontic Rehabilitation Of Velopharyngeal Dysfunction. Cureus, 12.
19. Preetha, V. M., Vardhan, B. H., Gopal, K. S. & Lankupalli, A. S. 2021. Assessing The Prevalence Of Velopharyngeal Dysfunction And Obstructive Sleep Apnea By Correlating Cone Beam Computed Tomography Parameters Of Soft Palate With The Stop Bang Questionnaire. Journal Of Indian Academy Of Oral Medicine And Radiology, 33, 294-300.
20. Renkema, R., Misier, K. R., Rooijers, W., Osolos, A., De Gier, H., Poldermans, H., Padwa, B., Dunaway, D., Caron, C. & Koudstaal, M. 2024. Velopharyngeal Dysfunction And Speech-Related Characteristics In Craniofacial Microsomia: A Retrospective Analysis Of 223 Patients. International Journal Of Oral And Maxillofacial Surgery.
21. Tio, P. A., Rooijers, W., De Gier, H. H., Poldermans, H. G., Koudstaal, M. J. & Caron, C. J. 2023. Velopharyngeal Insufficiency, Speech And Language Impairment In Craniofacial Microsomia: A Scoping Review. British Journal Of Oral And Maxillofacial Surgery.
22. Vale, F., Paula, A. B., Travassos, R., Nunes, C., Ribeiro, M. P., Marques, F., Pereira, F., Carrilho, E., Marto, C. M. & Francisco, I. 2022. Velopharyngeal Insufficiency Treatment In Cleft Palate Patients: Umbrella Review. Biomimetics, 7, 118.
23. Wadhwa, B., Selvaraj, U., Bhandari, S. & Sharma, A. 2023. Influence Of Speech Aid Prosthesis With Speech Therapy On Speech Outcomes In Adult Patients With Persisting Velopharyngeal Insufficiency: A Retrospective Analysis. The Journal Of Prosthetic Dentistry.

