

**Development and Validation of Video-based assessment for Pragmatic
Skills in Adolescents**

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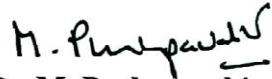
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CERTIFICATE

This is to certify that this dissertation entitled **“Development and Validation of Video-based assessment for Pragmatic Skills in Adolescents”** is a Bonafide work submitted as part of fulfilment of the degree of Master of Science (Speech Language Pathology) of the student with Registration Number P01II24S123015. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other university for the award of any other Diploma or Degree.

Mysuru
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CERTIFICATE

This is to certify that this dissertation entitled “**Development and Validation of Video-based assessment for Pragmatic Skills in Adolescents**” is a Bonafide work submitted in part fulfilment for the degree of Masters in Science (Speech-Language Pathology) of the student Registration number: P01II24S123015. This has been prepared under my supervision and guidance. It is also certified that this has not been submitted earlier for the award of any Diploma or Degree to any other University.

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DECLARATION

This is to certify that this dissertation entitled “**Development and Validation of Video-based assessment for Pragmatic Skills in Adolescents**” is the result of my own study under the guidance of Dr. Priya. M. B, Assistant Professor in Speech Pathology, Centre for Speech and Language Disorders in Children, Adults and Senior Citizens, All India Institute of Speech and Hearing, Mysore, and has not been submitted earlier to any other university for the award of any other Diploma or Degree.

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இன்னா செய்தாரை ஒறுத்தல் அவர்நாண
நன்னயம் செய்து விடல்.

— திருக்குறள் 314

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CHAPTER 1

INTRODUCTION

Language disorders are communication disorders characterized by persistent difficulties in the acquisition and use of language across different modalities due to deficits in comprehension and production (Paul, 2013). Children with a language delay often show language characteristics of children of younger age in their typical development (Leonard, 1979). One of the main aspects of the language characteristics is the practical usage of language, referred to as pragmatics. A child's pragmatic abilities reflect multiple factors such as social, cultural, daily interaction, economic condition, etc.

Pragmatic abilities develop gradually with increasing complexity over age, as older children tend to comprehend higher conversational markers, such as idioms, sarcasm, etc., better than younger children (Fatima, 2022). Cognitive abilities and exposure to different social cues are crucial for pragmatic development, as older children better understand social contextual cues (Vaz & Karuppali, 2019). The development of pragmatics is strongly associated with the development of the theory of mind (Fatima & Babu, 2024). Adolescence is a phase during which social interactions, especially with peers, become increasingly significant (Asaridou et al., 2019). Children of older age have better pragmatic judgmental skills compared to those of younger age, as the skills get shaped by multiple factors such as maturation in social cognition and executive functions (Anil et al., 2021). Hence, a pragmatics assessment at any age should not be done in isolation, rather, it should take into account the influence of all such factors (Hyter, 2007).

Pragmatics communication disorder is defined as persistent difficulties with social use of verbal and non-verbal communication (American Psychiatric Association, 2013). Assessment of pragmatics is an important aspect of the assessment battery in language disorders. Although all the language domains are considered equally important, pragmatics is often left out during assessment. Children with language disorders frequently have impairment concerning pragmatics, causing them to have reduced use of their language skills. Pragmatic skills are important to represent the child's language skills appropriately, and any disorder that could cause a pragmatic impairment can restrict the child's practical usage of language.

Assessment of pragmatics is a dynamic process that includes an interview with the parents, observing the child's performance of various tasks involving language usage in various severity levels and situations. One major drawback in the assessment of pragmatics is the lack of developmental norms as pragmatics is a very heterogeneous domain which has variations due to multiple factors such as language exposure, socioeconomic situations, etc (Adams, 2002). Interview tests may include checklists or questionnaires, which are assessed based on the parents' experience and prior knowledge of the child's language use. On the other hand, performance-based tests directly assess the child's language usage by giving them tasks and situations requiring them to use their language in different contexts to answer the task appropriately.

Standardized test materials do not assess the child's pragmatic abilities in real-life situations, as older children need to be assessed based on different speech acts. Combining a standardized test result and interview assessment with the parents provide a more accurate diagnosis (Bishop & McDonald, 2009). The speech acts categorize utterances by functions and

require contextual knowledge for accurate understanding, as the conversational structure plays a crucial role (Levinson, 1983).

One of the recent advances in assessment of pragmatic skills is the development of video-based assessment tools. Clinical Assessment of Pragmatics (CAP) (Lavi, 2016) is a video-based pragmatics assessment tool in the Western context. It provides a more ecologically valid assessment environment for assessing pragmatics, as the videos provide a context closer to real-life situations than interview and questionnaires. The tool was determined to be reliable, with good sensitivity and specificity in diagnosing pragmatic abilities in terms of pragmatic judgement and performance (Linda & Lavi, 2016). It also helps assess pragmatic impairment in associated conditions such as autism spectrum disorder and pragmatic language impairment (Lavi, 2016).

Need for the study

Deficits in pragmatic abilities are seen in various communication disorders such as specific language impairment, autism spectrum disorder, among others. (Osman et al., 2011). Assessment of pragmatics mainly uses questionnaires or informal assessments. In addition to checklists and questionnaires, some tools, such as the Test of Pragmatic Language-2 (Terasaki & Gunn, 2007), use pictures of various social situations requiring children to demonstrate pragmatic judgment by giving an appropriate response.

Although there are many test materials to assess the different domains of language and assess pragmatic characteristics of an individual in depth, very few resources are specifically available in the Indian context. A recent survey of Speech Language Pathologists on approaches

towards pragmatic language assessment in Indian preschoolers revealed that assessment of pragmatics in the Indian context is predominantly done using informal methods (Rasheeka et al., 2024). Assessment materials are mainly available in the form of checklists and questionnaires, which lack cultural and linguistic appropriateness to evaluate the pragmatic abilities in the Indian context (Rasheeka et al., 2024). Further, most of them do not provide a point of reference that allows a clinician to determine whether scores are indicative of deficits or strengths in pragmatic areas. This lacuna is more pronounced in the adolescent age group. Divya (2023) developed a screening checklist for the assessment of pragmatic skills in Indian adolescents in the age range of 12 to 16 years. The availability of tools to assess pragmatic judgement and performance abilities in Indian adolescents is scarce and it could be beneficial to have test materials that assesses the same in this population.

Aim of the study

The study aims to develop a video-based assessment tool for assessment of pragmatic skills in adolescents aged 12 to 16 years.

Objectives of the study

The specific objectives of the study are as follows:

1. To develop and validate a video-based assessment tool to assess the pragmatic abilities of adolescents in the age range of 12 to 16 years.
2. To profile the pragmatic abilities of adolescents in the age group of 12 to 16 years using the developed video assessment tool for pragmatics.

CHAPTER 2

REVIEW OF LITERATURE

Language is a code that represents ideas about the world through a conventional system of arbitrary signals for communication. There are three major components of language, namely form, content, and use. ‘Form’ refers to the structure of language, which encompasses phonology, morphology, and syntax. ‘Content’ discusses semantics, and ‘use’ talks about pragmatics (Bloom & Lahey, 1978). Language development is an interactive process, where communicative competence depends on the integration of these components, rather than a mastery of isolated linguistic structures. Hart (1981) further elaborated that pragmatics governs how language is used in context, covering functions such as requesting, questioning, greeting, refusing, and explaining. Language development progresses from infancy through adolescence and is influenced by biological maturation, cognitive development, and environmental input, as well as caregiver interaction, socio-economic factors, and educational context (Owens, 2000; 2008).

Pragmatics as a Component of Language

Pragmatics is the study of language use in context, referring to how speakers convey meaning beyond the literal content of words and sentences. Pragmatics is the earliest developing aspect of language, emerging before formal linguistic structures, wherein communicative intent, such as requesting, appears in prelinguistic gestures and vocalizations (Bates, 1975). Children acquire word meanings, grammatical structures, and pragmatic conventions through interaction, emphasizing the roles of joint attention, conversational feedback, and pragmatic inference in early language acquisition. They rely on pragmatic cues such as speaker intention and context, to map

words to meanings, and pragmatic understanding supports vocabulary expansion and grammatical refinement (Clark, 2016; 2019).

Pragmatics is also defined as social competence, the ability to use language effectively across interpersonal contexts, encompassing communicative intentions, turn taking, repair strategies, and topic management (Prutting, 1982). Prutting and Kirchner (1987) developed a clinical appraisal framework that organized pragmatic behaviors into verbal, nonverbal, and paralinguistic categories, enabling systematic evaluation of appropriateness and effectiveness in naturalistic contexts. Concepts such as conversational implications, speech acts, and politeness are considered as the major principles explaining how meaning extends beyond literal linguistic content (Levinson, 1983). Cutting and Fordyce (2020) discussed pragmatics within sociolinguistic and cultural frameworks, emphasizing context, register, and appropriateness, and also highlighted pragmatic variations across cultures and social settings.

Development of Pragmatics

Pragmatic development is a gradual process that progresses from early communicative intent to sophisticated discourse skills. The pragmatic functions, such as requesting, rejecting, and commenting, emerge through gestures and vocalizations and are embedded in verbal interaction, enabling conversational turn-taking, topic initiation, and topic maintenance (Bates et al., 1975). Pragmatic rules are acquired through repeated social participation rather than explicit teaching. Pragmatic abilities emerge before the onset of spoken language, and infants are reported to use gestures to perform communicative acts, such as requesting and commenting. These functions are

found to predict later language development, thereby providing a strong foundation upon which linguistic forms develop (Bates et al., 1975).

Infants as young as 14 months communicate with the explicit goal of being understood, indicating early awareness of the listener's mental state and the social function of communication (Grosse et al., 2010). The emergence of repair strategies, the ability to modify communication when a breakdown occurs, develops in infants and toddlers, proving that these skills appear early and become increasingly sophisticated through development (Alexander et al., 1997). Children between two and four years develop communicative functions, narrative structures, and conversational rules through peer and caregiver interaction (Garvey, 1984). The intuitive nature of human communicative development emphasizes that infants engage in proto-conversation and affective attunement with caregivers, laying the groundwork for later pragmatic competence (Trevarthen, 2008).

Children who demonstrate strong pragmatic abilities are more likely to form and sustain peer relationships emphasizing on the relationship between social communicative skills and friendship development (Goldstein & Morgan, 2002). Scripts and mental representations of routine event sequences underpinning children's ability to participate in predictable communicative contexts form the basis for later discourse comprehension (Schank & Abelson, 2013).

Development of Pragmatics through Adolescence

Adolescence is a phase marked by the development of higher-order pragmatic skills, characterized by the emergence of skills such as figurative language, sarcasm, irony, humor, and

abstract inferencing. Adolescents are required to interpret implied meanings and adjust language based on the listener's perspective, which is crucial for academic discourse, peer interaction, and social identity formation. Nippold (1998, 2000, 2006) highlighted that adolescence is characterized by increasing demands on pragmatic competence and at this stage, individuals are expected to manage classroom discourse, peer negotiation, and narrative coherence. Nippold further emphasized that pragmatic difficulties may become more apparent during adolescence due to rising contextual demands.

A longitudinal study by Larson and McKinley (1998) analyzing the adolescent conversations, documenting characteristics such as topic maintenance, conversational repair, use of indirect requests, and adaptation to listener needs revealed that conversational competence continues to develop across the adolescent years, with older adolescents demonstrating more sophisticated topic management and perspective-taking than younger ones. The cohesion, communication burden, and response adequacy in adolescent conversations are evidences that adolescents are capable of maintaining cohesive dialogue but vary considerably in the sophistication of their communicative strategies (Ciccia & Turkstra, 2002). Interactive behaviours in adolescent conversations were explained by Turkstra et al. (2003), noting that adolescents demonstrate nuanced social awareness in managing eye contact, proximity, and turn-taking.

Research on pragmatic processing in the adolescent brain revealed that neural substrates for pragmatic inference continue to mature during adolescence, suggesting a protracted development trajectory for complex pragmatic abilities (Asaridou et al., 2019). Examination of the importance of specific communication skills of adolescents' interactions with peers and teachers,

stated that pragmatic skills such as topic maintenance, clarity of expression, and appropriate use of nonverbal cues were rated as most important for successful social and academic functioning (Reed, 2018; Reed et al., 1999). The pragmatic skills in adolescents significantly influence their interactions with teachers and their academic participation (Reed & Spicer, 2003). Pragmatic language abilities in Indian adolescents between 10 and 16 years, examined using contextually flooded visual scenes, provided evidence that pragmatic abilities continue to develop across this age range and that culturally relevant stimuli are essential for valid assessment in Indian populations (Vaz & Karupalli, 2019).

Pragmatic Disorder as a Language Impairment

Language disorders refer to impairment in the comprehension, production, or use of spoken, written, or symbolic language. Children with language disorders display a wide range of linguistic profiles across structural and pragmatic domains (Reed, 2018). Bishop (1997) explained language comprehension disorders and demonstrated that receptive language deficit impairs pragmatic abilities such as inferencing, topic relevance, and conversational repair. Pragmatic impairments may occur independently or alongside structural language deficits (Paul & Norbury, 2012).

Pragmatic language impairment has been conceptualized as a specific developmental condition characterized by marked difficulties in the contextually appropriate use of language. Adams and Bishop (1989) described pragmatic language impairment as a developmental condition characterized by marked difficulties in the appropriate use of language in a social context. Children with pragmatic language impairment exhibit conversational problems such as poor topic

maintenance, over-verbosity, inappropriate responses, and difficulty understanding implied meanings, and share features with Autism Spectrum Disorder (ASD). They argued that pragmatic disorder is a language-based impairment with functional consequences rather than a purely social or behavioral issue.

Lapadat (1991) conducted a quantitative synthesis of research on pragmatic language skills in students with language and learning disabilities, and reported consistent patterns of pragmatic difficulty, including problems with conversational repair, topic maintenance, and indirect requests. Martin and McDonald (2003) proposed a theoretical framework for understanding pragmatic language disorders in terms of weak coherence, theory of mind deficits, or executive dysfunction, highlighting the complex cognitive substrates underlying pragmatic ability.

The effects of communication disorders on social development were documented by Back (2010), noting that children with pragmatic difficulties experience reduced peer acceptance, limited friendship formation, and greater social isolation. Leonard (2017) provided a comprehensive description of Specific Language Impairment/ Developmental Language Disorder (DLD). Emphasizing deficits in grammatical morphology and syntax, he noted that pragmatic impairments frequently coexist, affecting conversational coherence, narrative organization, and social communication. Pragmatic weakness was identified as a major contributor to peer interaction problems in children with DLD and a contemporary understanding of this disorder links linguistic deficits with academic difficulties and social challenges (Norbury et al., 2008).

Norbury (2014) examined the diagnostic category of social pragmatic communication disorder (SPCD) and discussed its overlap with ASD and DLD, and defined SPCD as persistent difficulties in social language use that significantly affect academic performance and peer relationships. It was also specified that the functional impact across contexts should be prioritized rather than strict categorical distinctions. DSM-5-TR (2022) formally defined Socio-Pragmatic Communication Disorder as persistent difficulties in social use of verbal and nonverbal communication, affecting social participation, relationships, and academic achievement.

Assessment of Pragmatics

A comprehensive understanding of the language abilities entails a holistic assessment approach, involving a combination of standardized and informal assessments (Paul, 2001). The assessment of pragmatic language requires tools and methods that capture the contextual, dynamic, and social nature of communicative competence. Prutting (1982) argued that pragmatic assessment should prioritize social competence- the ability to use language effectively across interpersonal contexts, rather than focusing solely on structural accuracy. The International Classification of Functioning, Disability and Health- children and youth version (ICY-CY; WHO, 2007) provides a framework for understanding communicative participation and activity limitations in the context of pragmatic assessment, situating assessment within a broader functional and social context.

A framework for assessing pragmatic abilities in children was proposed by Roth and Spekman (1984), emphasizing the importance of examining communicative intentions, presupposition, and social organization of discourse across settings. Prutting and Kirchner (1987) developed a clinical appraisal framework for assessing pragmatic behaviours in natural contexts,

including domains such as turn-taking, topic initiation, presupposition, eye contact, repair strategies, and paralinguistic cues. They emphasized evaluating appropriateness and effectiveness, rather than grammatical accuracy, making this framework particularly useful for identifying subtle pragmatic deficits.

The need for pragmatic assessment and intervention to account for linguistically and culturally diverse backgrounds has long been emphasized (Kayser, 1995). This is attributed to the fact that pragmatic norms are not universal and that intervention should address the child's specific social and communicative context. Adams et al. (2005) emphasized that pragmatic skills improve most effectively when the intervention targets conversational interaction, peer engagement, and functional communication goals. He also stated that group-based interventions were found to be particularly beneficial as they provide opportunities for real-time social interaction and feedback and pragmatic change through functional outcomes rather than standardized scores alone. Bierman and Furman (1984) found that social skills training and peer involvement improve social adjustment in pre-adolescents, supporting the functional importance of targeting pragmatic skills in intervention.

The importance of context-based and functional approaches have been emphasized in assessing adolescent pragmatics (Adams, 2002). Russell and Grizzle (2008) reviewed child and adolescent pragmatic language assessment tools, and advocated for evidence-based approaches that combine standardized measures, observational methods, and functional tasks to capture the multidimensional nature of pragmatic competence. Assessment of pragmatic competence in

adolescence requires tasks that address narrative organization, persuasive discourse, and figurative language (Nippold, 1998; 2000).

Pragmatic competence also includes recognition of cues such as facial expression and emotions. Ekman (1992) and Etcoff and Magee (1992) examined facial expression recognition and categorical perception of emotional expressions and reported findings relevant to assessment paradigms that incorporate the interpretation of emotional and social cues. Batty and Taylor (2006) documented the developmental trajectory of emotional face processing during childhood, demonstrating increased accuracy in emotional recognition across age groups.

Prutting and Kirchner (1987) described their clinical appraisal of pragmatic aspects of language as an observational framework applicable across ages and settings. Test of pragmatic skills was developed by Shulman (1986) to provide a structured approach to pragmatic assessment. Test of Pragmatic Language, second edition (TOPL-2) developed by Terasaki and Gunn (2007), is a widely used standardized instrument for assessing pragmatic language in children and adolescents. The Clinical Evaluation of Language Fundamentals (CELF-4) by Semel (2003) incorporates pragmatic components within a broader language assessment framework. Sundaram and Karanth (1994) and Dheepa and Shyamala (2005) developed assessment tools for pragmatics in the Indian context.

Performance-based Assessment Tools

Performance-based assessment tools are designed to capture pragmatic abilities as they are expressed in real or simulated communicative contexts. Hart (1981) reported that pragmatic skills

include using language for requesting, questioning, greeting, refusing, explaining, etc. Performance-based assessment tools capture these variabilities in real-time language use, as the pragmatic skills are context-dependent and influenced by interactional cues. Perkins (2005) stated that performance-based assessment captures the dynamic nature of pragmatic deficits, suggesting assessment across multiple contexts to identify consistent patterns of impairment, implying multi-contextual performance evaluation provides better clinical insights for intervention planning.

There are several performance-based assessment tools for pragmatics for different age ranges. For example, The Communication and Symbolic Behavior Scales developed by Prizant (1993) is a performance-based tool that evaluates communicative, social-affective, and symbolic abilities. The performance-based components addressing conversational competence, narrative production, and non-literal language interpretation in adolescent participants are included in Manipal Manual for Adolescent Language Assessment (Karupalli & Bhat, 2016).

Lavi (2016) developed the Clinical Assessment of Pragmatics (CAP), a video-based assessment tool for assessing pragmatic abilities. It is a performance-based assessment tool for adolescents. She found significant group differences in students with high functioning Autism and Language Impairment, as they exhibited higher-order pragmatic deficits, such as interpreting irony, using affective language, and expressing support, compared to their typically developing peers, highlighting the sensitivity of performance-based tools to detect subtle pragmatic deficits.

Video-based Assessment

In the recent years, video- based assessments has emerged as a powerful and ecologically valid approach to evaluating pragmatic language abilities. By presenting participants with visual scenarios that simulate really social and communicative situations, video-based tools allow standardized, repeatable elicitation of pragmatic responses while maintaining high contextual relevance. Prutting (1982) suggested that naturalistic observation and structured role plays are both valid methods for assessing pragmatic competence, as they provide opportunities to observe communicative behavior in action rather than relying on metalinguistic knowledge alone.

The CAP developed by Lavi (2016) a video-based performance tool for adolescents uses real-life scenarios to elicit pragmatic judgement and communicative responses. Lavi (2016) compared three groups- typically developing, pragmatic language impairment, and high-functioning autism using CAP and found that all groups performed similarly on basic instrumental tasks. Adolescents with Pragmatic Language Impairments and High Functioning Autism had significant difficulties with higher-order pragmatic tasks such as affective language use, interpreting irony, and expressing support. Video-based assessment tools reveal subtle differences in pragmatic language use that traditional assessment tools may miss. Vaz and Karupalli (2019), used contextually flooded visual scenes to assess pragmatic language abilities in Indian adolescents, finding that the visual format was engaging, culturally appropriate, and sensitive to developmental differences across age groups.

Assessment of Pragmatics in the Indian Context

The assessment of pragmatic language in the Indian context presents unique challenges due to the country's extensive linguistic diversity, regional variation in communicative norms, and the limited availability of standardized tools adapted for Indian languages and population. Sundaram and Karanth (1994) and Dheepa and Shyamala (2005) were among the earliest researchers to develop pragmatics assessment tools specifically for Indian populations. Hegde and Pomaville (2021) provided a guide for the assessment of language disorders in Indian children, highlighting regional language variations and the lack of standardized tests for many Indian languages, and recommended combining parent interviews, observation, and language samples during the assessment procedure.

Multi-method assessment comprising standardized, informal, and observational tests are generally recommended for language assessment in the Indian population, in view of the regional and cultural variations. Westby (2010) advocated for multiliteracy-informed assessment approaches that recognize the influence of cultural and social contexts on communicative competence- a perspective particularly relevant to the diverse communicative environments encountered in Indian settings. More recently, Rasheeka et al. (2024) studied the assessment approaches used by SLPs for pragmatic language in Indian preschoolers and emphasized on the lack of availability of suitable tools and also the need to develop indigenous assessment tools. Similarly, Vaz and Karupalli (2019) demonstrated the usefulness of culturally relevant visual stimuli in assessing pragmatic language abilities among Indian adolescents, emphasizing the importance of contextually appropriate assessment materials.

In summary, the literature highlights the importance of pragmatic competence in adolescent communication and the challenges associated with its assessment. Video-based assessments have emerged as a promising approach for evaluating pragmatic skills as it provides rich contextual and social cues that most closely resemble real-life situations. There is a lack of validated video-based assessment tools in the Indian context for the assessment of pragmatics. Therefore, the present study aims to develop a culturally appropriate video-based tool for assessing pragmatic language abilities in Indian adolescents.

CHAPTER- 3

METHOD

The objectives of the present study were to develop and validate a video-based assessment tool for pragmatics in adolescents in the age range of 12 to 16 years and to profile the pragmatic abilities of adolescents in the age group of 12 to 16 years using the developed video assessment tool for pragmatics.

Research design

A cross-sectional, descriptive study design was used to achieve the objectives of the study.

Participants

A total of 21 typically developing adolescents in the age range of 12 to 16 years (Mean age: 13.67 years, SD: 1.21) were included in the study. They were divided into two age groups - group 1 consisted of nine participants (4 boys: 5 girls) in the age range of 12;0 to 14;0 years (mean age:12.44 years; SD: 0.49) and group 2 consisted of 12 participants (4 boys: 8 girls) aged between 14;0 and 16;0 years (mean age:14.58 years; SD: 0.69).

Participant selection criteria

The participants included in the study:

- Were native speakers of Kannada, residing in the urban ambient environment of Mysuru.
- Were enrolled in a regular school with English as the medium of instruction.

- Did not have any history of speech and language delay or difficulties, as screened using the International Classification of Functioning, Disability and Health for Children and Youth (ICF-CY) checklist (WHO Work group, 2004).
- Had normal hearing abilities and normal/corrected vision.
- Did not have any history of cognitive or psychological disturbances.

Procedure

The study was carried out in four phases as follows:

Phase 1 - Generation of stimuli

The two primary domains of pragmatics, namely, pragmatic judgement and pragmatic performance (Lavi, 2016), in the context of requesting skills were considered in the study. Pragmatic judgment is congruent to receptive pragmatic skills, and can be measured by how an individual perceives what correct and incorrect responses are in various social contexts. On the other hand, pragmatic performance refers to expressive pragmatic skills and can be measured through the response given in social situations.

A total of eight naturalistic video vignettes depicting real-life requesting situations were developed to assess the two pragmatic domains. Scripts for each video were prepared in English language based on the selected contexts and presented to three Speech Language Pathologists to review the relevance and appropriateness for assessing requesting skills. The necessary modifications were incorporated based on the feedback received and the scripts were finalized for video preparation. The videos were shot with individuals enacting appropriate/inappropriate ways of requesting in four different contexts namely requesting for information, requesting for

permission from the teacher, requesting for assistance from the teacher and requesting for an object from a classmate. Two videos were developed for each of the four contexts, wherein one video demonstrated appropriate requesting skill and the other demonstrated inappropriate requesting skill with reference to the particular context. The duration of each video ranged from 10-15 seconds.

The task used to assess pragmatic judgement required participants to watch a video depicting a requesting situation and judge if the request made was appropriate or inappropriate, followed by a suitable justification for the response. In contrast, the pragmatic performance task required participants to watch the same type of video, evaluate the appropriateness of the request, and then demonstrate the appropriate way of requesting, suitable for that context.

Out of the eight videos, two videos pertaining to requesting for information were used for practice trials to ensure clear understanding of instructions and nature of the task by the study participants. The remaining six videos pertaining to the three classroom-based contexts were used for the actual testing, with three tasks each to assess pragmatic judgment and pragmatic performance. The details of the same are presented in Table 1.

Table 1*Details of Contexts Demonstrated in the Videos*

Sl. No	Video	Context depicted
<i>Practice trials</i>		
1.	Video i	Appropriate request for information
2.	Video ii	Inappropriate request for information
<i>Testing</i>		
3.	Video-A	Appropriate request for assistance
4.	Video-B	Inappropriate request for assistance
5.	Video-C	Appropriate request for permission
6.	Video-D	Inappropriate request for permission
7.	Video-E	Appropriate request for object
8.	Video-F	Inappropriate request for object

Phase 2 - Validation of the videos and the questions

The developed videos and questions were subjected to content validation by five experienced Speech Language Pathologists with a minimum of five years of clinical experience in the field. They were provided with a validation questionnaire consisting of parameters such as relevance of characters, dialogue clarity, video presentation, and choice of questions and asked to rate the videos using a 4-point rating scale ranging from 0 to 3. Each parameter was rating on the 4-point scale as follows: Relevance (0 = Not relevant, 1 = Relevant, 2 = Very relevant and 3 = Highly relevant), Dialogue clarity and Video presentation (0 = No clarity, 1 = Ambiguous, 2 = Clear and 3 = Very clear), and Choice of questions (0 = Inappropriate, 1 = Appropriate, 2 = Very appropriate, and 3 = Highly appropriate). In addition to the ratings, the experts were also given the provision to include any additional comments or remarks, as deemed necessary.

Each of the videos received a rating of 3 for all the parameters by the five experts. The obtained ratings were converted into binary scores of 0 and 1, with 0 and 1 ratings as score 0 and 2 and 3 ratings as score 1. The Item-Level Content Validity Index (I-CVI) and the Scale-Level Content Validity Index (S-CVI) were computed using the procedures given by Yusoff (2019) and a value of 1 was obtained for both the measures. However, two of the experts remarked about the dialogue clarity of the videos, specifically with reference to the loudness levels. Based on the feedback obtained, suitable modifications were incorporated into the videos and the stimuli set was finalized.

Phase 3 - Administration of the test

Ethical Clearance and Informed Consent. The study adhered to the *Ethical Guidelines of Bio-Behavioral Research Involving Human Subjects* (Venkatesan, 2009) as approved by the Ethical Committee at All India Institute of Speech and Hearing, Mysuru. The purpose, nature, and details about the assessment tool were explained to each participant's parents/caregivers, and written informed consent in English was obtained before the initiation of the testing procedure. Informed assent was obtained from the participants as well.

The participants were tested individually in a quiet and distraction-free environment. The videos were presented to the participants through an iPad with a screen size of 11 inches. The participants listened to the audio stimuli through an earphone in their left ear. They were instructed to watch the video carefully and answer the question that follows. For the pragmatic judgment task, the participants were instructed to watch the video and then judge whether the requesting skill shown in the video was appropriate or inappropriate. Further, they were asked to provide a

suitable justification for their judgment. For the performance task, the participants were instructed to watch the video, judge if the requesting skill shown was appropriate or inappropriate, and if judged as inappropriate, they were asked to demonstrate the appropriate way of requesting based on the context presented in the video.

Phase 4 - Scoring and Analysis

The responses obtained by each participant for each of the tasks were separately noted down on a response sheet. For the pragmatic judgement task, a score of 3 was given when the participant correctly judged appropriateness of the requesting behavior depicted in the video and provided a complete and contextually appropriate justification for the response. A score of 2 was given when appropriateness of the requesting behavior was judged correctly but provided only a partial or incomplete justification. A score of 1 was given when the participant correctly judged the appropriateness of the request but could not justify the response. An incorrect judgment of the requesting behavior was assigned a score of 0. For the pragmatic performance task, a score of 3 was given when the participant correctly judged the appropriateness of the requesting behavior and provided a complete and contextually appropriate demonstration of the request. A score of 2 was given when appropriateness of the requesting behavior was judged correctly but provided incomplete demonstration. A score of 1 was given when the participant correctly judged the appropriateness of the requesting behavior but was unable to provide an appropriate demonstration. An incorrect judgment of the requesting behavior was given a score of 0. The maximum possible total score in each domain was 9. The raw scores obtained by each participant in the two groups were tabulated separately for the pragmatic judgment and pragmatic performance tasks and the compiled group data was subjected to further analysis.

Statistical Analyses

The statistical analyses were done using IBM Statistical Package for the Social Sciences (SPSS) software (version 26). The scores obtained by participants in the two groups were analyzed using both descriptive and inferential statistical methods. Mann Whitney U test was done to compare the scores obtained on each of the two tasks, namely Pragmatic Judgment and Pragmatic Performance between the two participant groups. Within group comparison was carried out using Wilcoxon Signed-Rank test to compare the scores obtained by participants across the two tasks. The level of statistical significance for all tests was set at $p < 0.05$.

CHAPTER 4

RESULTS

The objectives of the study were to develop and validate a video-based assessment tool to assess the pragmatic abilities of adolescents in the age range of 12 to 16 years and to profile the pragmatic abilities of adolescents in the age group of 12 to 16 years using the developed video assessment tool for pragmatics. 21 typically developing participants with Kannada as their native language in the age range of 12;0 to 16;0 years participated in the study. They were divided into two age groups – group 1 including nine participants in the age range of 12;0 to 14;0 years and group 2 included 12 participants in the age range of 14;0 to 16;0 years.

Comparison of the Scores obtained for each Pragmatic Task between the two Participant Groups

Descriptive statistics was done to compute the Mean, Median, Standard deviation, and Interquartile Ranges for the scores obtained by the typically developing adolescents for the pragmatic tasks in the two age groups (12;0 to 14;0 years and 14;0 to 16;0 years). The results of the scores obtained by the typically developing adolescents for the pragmatic scores in the two age groups are summarized in Table 2.

From Table 2, it is observed that the scores obtained by the participants of the two age groups are similar in both the pragmatic judgement and pragmatic performance tasks. However, the mean total score obtained by the participants in the first age group (12;0 to 14;0 years) is slightly higher than that of the second age group (14;0 to 16;0 years).

Table 2

Means, Medians, Standard Deviations (SD) and Interquartile ranges (IQR) of the Scores (Raw scores and Percentage scores) Obtained on Pragmatic Tasks by Typically Developing Adolescents

Task	Age group	Mean	Median	SD	Minimum	Maximum	Interquartile Range
Raw Scores							
Pragmatic	12-14 years	8.11	8.00	1.05	6.00	9.00	1.50
Judgement	14 -16 years	7.58	8.00	0.99	6.00	9.00	1.00
Pragmatic	12-14 years	8.00	8.00	1.00	6.00	9.00	1.50
Performance	14 -16 years	8.25	9.00	1.13	6.00	9.00	1.00
Total	12-14 years	16.11	16.00	1.76	14.00	18.00	4.00
	14 -16 years	15.83	16.00	1.52	13.00	18.00	2.75
Percentage Scores							
Pragmatic	12-14 years	90.12	88.88	11.71	66.67	100.00	16.67
Judgement	14 -16 years	84.25	88.88	11.06	66.67	100.00	11.11
Pragmatic	12-14 years	88.88	88.88	11.11	66.67	100.00	16.67
Performance	14 -16 years	91.66	100.00	12.64	66.67	100.00	11.11
Total	12-14 years	89.50	88.88	9.79	77.78	100.00	22.22
	14 -16 years	87.96	88.88	8.48	72.22	100.00	15.28

Note: Maximum Score for each task = 9

To verify these findings statistically, non-parametric tests were carried out for further analysis owing to the small sample size in each group. Mann-Whitney U test was done to compare the scores of the participants obtained for each of the pragmatic tasks in the two age groups. The results of the Mann-Whitney U test revealed no significant difference between the two age groups for both Pragmatic Judgement ($|z| = 1.26$, $p = 0.20$) and Pragmatic Performance ($|z| = 0.88$, $p = 0.37$) tasks.

Comparison of the Scores Obtained by the Participants Across the Pragmatic Tasks

Since the scores obtained by the participants in the two age groups on the pragmatic tasks did not reveal any significant difference, the data was combined into a single group (12;0 to 16;0 years) for further analysis.

A within group comparison was done using Wilcoxon Signed-Rank test to compare between the scores obtained by the typically developing adolescents on the two pragmatic tasks (Pragmatic Judgement & Pragmatic Performance). The results of Wilcoxon Signed-Rank test revealed no significant difference ($|z| = 1.14$, $p = 0.25$) between the scores of the judgment task and the performance task, indicating that typically developing adolescents performed similarly across the two tasks.

CHAPTER 5

DISCUSSION

The present study aimed to investigate the pragmatic language abilities in typically developing Kannada-speaking adolescents aged 12;0 to 16;0 years using a video-based assessment tool that incorporated both pragmatic judgement and performance tasks. A total of 21 participants were recruited for this study. The participants were divided into two age groups i.e. 12;0 to 14;0 years and 14;0 to 16;0 years. Each participant was individually tested by presenting the videos followed by questions evaluating their judgment and performance related to requesting skills in the context depicted in the videos. The responses were scored and analysed for task performance. Between-group comparisons were carried out to compare the scores obtained on the two tasks, along with a within-group comparison to compare between scores of pragmatic judgment and pragmatic performance. The findings are discussed in the context of existing literature on pragmatic development during adolescence, the utility of performance-based and video-based assessment approaches, and the relevance of these findings to the Indian adolescent population.

Development of the Assessment Tool and Validation

Performance based tools elicit a wide range of responses and pragmatic abilities which conventional tests fail to do (Lavi, 2016). One of the recent developments in the area of assessment of pragmatic skills is the use of video-based tools that most closely resemble real-life social contexts and provides a means of evaluating language use in naturalistic settings. The videos developed in this study aimed towards encompassing conversational acts, focusing majorly on assessment of requesting ability through adolescence. Nippold (2000) documented that pragmatic

competence during adolescence encompasses managing classroom discourse, peer negotiation, and narrative coherence. This offers support to the classroom-contexts depicted in the videos developed in this study for assessment of pragmatic judgment and performance abilities related to requesting skills. The video-based assessment tool developed and validated in this study can therefore, be considered as a valuable addition to the limited tools available in the Indian context for the assessment of pragmatic skills (Eg: Deosthalee & Waknis, 2020; Dheepa & Shyamala, 2005; Divya, 2023).

Comparison of Performance across Participant Groups

The between-group comparisons of the two age groups using the Mann-Whitney U test indicated no statistically significant differences between the scores. These findings suggest that pragmatic abilities, as assessed by the developed tool, are relatively similar across early to mid-adolescent age range. This is consistent with the view that core pragmatic competencies such as the ability to understand and apply social communicative norms are largely consolidated by early adolescence (Nino & Snow, 1996; Bates, 1976). This finding also suggests that the development of pragmatic abilities in adolescence is nonlinear. However, these interpretations should be limited to only requesting skills and should not be extended to the broader range of skills in the domain of pragmatics. Higher-order pragmatic abilities, including figurative language interpretation, complex inference, etc., are reported to continue to develop through adolescence and into adulthood (Nippold, 1998; 2000).

The findings of the present study is in contradiction to that reported by Divya (2023) where significant differences were observed between adolescents in the age range of 12;0 to 14;0 years

and 14;0 to 16;0 years on different pragmatic skills. Specifically, differences were noted in domains of non-verbal communication skills, narratives, topic initiation and topic maintenance and communication repair strategies; but not for domains of greetings, asking for, giving and responding to information, figurative language, humor and sensitivity to partner variables. Scores reflected either floor effect or ceiling effect in the latter domains where differences were not observed. Requesting can be regarded as a basic skill in the vast spectrum of pragmatic abilities and hence, it is plausible that maximum scores were observed for most participants on the tasks selected in the present study.

Comparison of Performance across Tasks

Results of within-group comparison to examine whether typically developing adolescents performed differently on the pragmatic judgement task versus the pragmatic performance task did not yield any significant difference between the two tasks. This indicates that adolescents were equally proficient in judging the appropriateness of communicative behaviour and in demonstrating pragmatic performance themselves. Although the within-group comparisons did not reveal a significant difference between the two tasks, examination of the raw scores indicated slightly higher scores in the performance task over the judgement task. This could be attributed to the hierarchy used in the scoring system used in the study. It was observed that although adolescents in all age groups were able to correctly judge the appropriateness of the requesting skills depicted in the context of the video, variations were observed in their ability to justify the responses. This was true even when the participants could produce contextually appropriate communicative responses as demonstrated in the performance task.

Prutting (1982) highlighted that assessment of pragmatic skills should prioritize social competence, including the ability to engage in effective communicative acts. The better scores of the performance task over the judgment task signify that the participants' language ability to perform in different conversational acts is better than analysing the appropriateness of a given situation. Further, tasks involving judgement and justifications require higher-level language abilities or metalinguistic abilities, which could also explain the disparity of scores between the two tasks.

CHAPTER 6

SUMMARY AND CONCLUSIONS

The present study aimed to develop and validate a video-based assessment tool for pragmatics in adolescents in the age range of 12 to 16 years and to profile their pragmatic abilities using the developed tool. Eight naturalistic videos (2 practice videos & 6 test videos) depicting real-life requesting situations were developed to assess the two pragmatic domains namely, pragmatic judgement and pragmatic performance. The videos and the assessment questions that follow the videos were validated by five experienced SLPs on parameters such as relevance, dialogue clarity, video presentation and choice of questions.

The validated video-based assessment was administered on 21 typically developing Kannada-speaking adolescents aged 12;0 to 16;0 years to profile their pragmatic abilities in terms of requesting skills. The participants were further divided into two age groups (12;0 to 14;0 years and 14;0 to 16;0 years). Each participant was individually tested in a quiet, distraction free environment, with good lighting and ventilation. The videos were presented to the participants using an iPad and the audio stimuli through earphones placed in their left ear. They were asked to view each of the six videos, three each for judgement and performance tasks presented in a random order. Following the video presentation, the participants were asked to judge the appropriateness of the requesting skill depicted in the video for the judgment task and demonstrate the appropriate way of requesting based on the context presented in the video for the performance task. The responses for each video was scored on a scale ranging from a minimum score of 0 and a maximum score of 3. The total scores obtained by the participants were recorded for each pragmatic task and

compiled for the two age groups. The dataset thus obtained was analysed using both descriptive and inferential statistical measures.

The results indicated high mean scores in both the groups of typically developing adolescents, reflecting high pragmatic performance for both judgement and performance tasks. Between-group comparisons using the Mann-Whitney U test similarly did not yield statistically significant differences between the two age groups of participants on either task. Further, within-group comparison using the Wilcoxon Signed-Rank test did not reveal a statistically significant difference between scores obtained by participants for the judgement and performance tasks.

These findings suggest that by 12 years of age, typically developing adolescents have acquired a robust repertoire of requesting skills that enables them to evaluate and respond appropriately to social communicative scenarios. This is aligned with the developmental view that fundamental pragmatic competencies are well established by early adolescence, with more advanced skills continuing to refine through late adolescence and into adulthood (Nippold, 2000; Asaridou et al., 2019). However, these findings should be interpreted within the scope of requesting skills and cannot be generalized across the broad spectrum of pragmatic abilities.

Implications of the Study

1. This is the first study on the development of video-based assessment tool for pragmatic skills in the Indian context.
2. The study contributes towards the development of culturally and linguistically appropriate, validated assessment tools for Speech-Language Pathology practice in the Indian context.

3. The results of the study provide preliminary data for pragmatic judgement and performance tasks in typically developing Kannada-speaking adolescents aged 12 to 16 years, thereby demonstrating the feasibility and utility of a video-based assessment paradigm for pragmatic language evaluation in adolescents.

Limitations of the Study and Future Directions

1. Considering the sample size of the study, generalization of the findings is limited. Future studies could be carried out with greater sample size and wider age groups.
2. The study participants were restricted to Kannada speaking adolescents residing in the urban ambience of Mysore. The tool could be further validated by administering it on participants from different linguistic and cultural backgrounds.
3. The videos developed in the present study were scripted in English. Future studies may consider developing and validating similar video stimuli in other Indian languages to enhance the linguistic and cultural applicability of the assessment tool.
4. The videos developed in this study were limited to the assessment of pragmatic abilities related to requesting skills. Future research could develop similar video-based assessment tools to evaluate a broader range of skills within the pragmatic domain.
5. Future research in this area may consider incorporating clinical populations with pragmatic impairments, such as individuals with Social (Pragmatic) Communication Disorder or Autism Spectrum Disorder to further examine the discriminative validity and clinical utility of the developed video-assessment tool.

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