AWARENESS AND PERCEPTION OF DEVELOPMENTAL MILESTONES OF CHILDREN UPTO 3 YEARS OF AGE AMONG PARENTS IN URBAN SET-UP

Pradyumna Murali

Registration number: 19SLP018

A Dissertation Submitted in Part Fulfillment for the Degree of Masters of Science

(Speech-Language Pathology)

University of Mysore

Mysuru

ALL INDIA INSTITUTE OF SPEECH AND HEARING

Manasagangothri, Mysuru-570006

September 2021

CERTIFICATE

This is to certify that this dissertation entitled "**Awareness and Perception of Developmental Milestones of Children up to 3 years of age among Parents in Urban Set-Up**" is a bonafide work submitted in part fulfilment for the degree of Masters in Science (Speech-Language Pathology) of the student Registration Number: 19SLP018. This has been carried out under the guidance of the faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysuru
September, 2021

Dr. M. Pushpavathi

Director

All India Institute of Speech and Hearing,
Manasagangothri, Mysuru- 570006

CERTIFICATE

This is to certify that this dissertation entitled "**Awareness and Perception of Developmental Milestones of Children up to 3 years of age among Parents in Urban Set-Up**" has been prepared under my supervision and guidance. It is also certified that this dissertation has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysuru

September, 2021

Dr.Jayashree C Shanbal

Guide

Associate Professor in Language Pathology
Department of Speech Language Pathology
Head- TCPD
All India Institute of Speech and Hearing,
Manasagangothri, Mysuru- 570006

DECLARATION

This is to certify that this dissertation entitled "**Awareness and Perception of Developmental Milestones of Children up to 3 years of age among Parents in Urban Set-Up**" is the result of my own study under the guidance of Dr. Jayashree C Shanbal, Associate Professor in Language Pathology, Department of Speech Language Pathology, Head- TCPD, All India Institute of Speech and Hearing, Mysuru and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysuru **Registration No.: 19SLP018**

September 2021

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ACKNOWLEDGEMENT

I thank the Gods for everything.

I sincerely thank my guide and teacher, Dr Jayashree Shanbal, for being patient and understanding. I will always look up to you and turn to you for help in research. Never once did I feel that my original research proposal has changed and for that I'm very thankful. I will most definitely miss our "life lesson" meetings. I look forward to working with you in the future. I'm glad this dissertation ended co-incidentally on Teacher's Day and dedicate my work to you, ma'am.

I'd like to thank Dr. M S Vasanthalakshmi for all the support in statistics. Thank you for being available when I had all those doubts and clarifications! I would also like to thank the participants without whom the study would not be possible.

I express my gratitude to Dr M Pushpavathi, Director, AIISH and all those at AIISH for being part of my learning experience. I would also like to thank my family and friends for supporting me throughout this period.

A special thanks to Mansi for essentially finishing half my degree, and to Mallika and Sushmitha for food support. I thank Michael, Dwight, and team for keeping me sane when I needed it the most. I would also like to acknowledge the places I most visited when I was stressed - Pochinki and Georgopol – Thank you! It would be unfair to all the Animes if I don't thank them.

Chapter 1

INTRODUCTION

Parental knowledge relating to child development can be identified as the awareness and comprehension "... of norms, milestones and developmental processes in child development" (MacPhee, 1981). More knowledgeable parents have been found to practice effective parenting methods i.e., positive parent-child interactions with fewer behavioural problems in children (Diehl et al., 2011; Huang et al., 2005; Reich, 2005; Huang et al., 2005; Benasich & Brooks-Gunn, 1996)

Based on the current literature available, it can then be inferred that developmental concerns could act as a robust indicator for early identification (Smith et al., 2010; Ertem et al., 2007; Huang et al., 2005). In multiple studies conducted, about 20% of the parent population with young children under the age of 5 years reported apprehensions about the development of their child (Marshall et al., 2016; Blanchard et al., 2006).

Even a small increase in parental knowledge can result in significantly larger benefits for the child's language development (Abrahamson & Catherine, 2016). A parent with a previous experience of parenting, thus greater child development knowledge (MacPhee, 1983) is more likely to facilitate better infant development (Veddovi et al., 2004). Parents who acknowledged that previous parenting experience contributed to their knowledge of child development seemed to have higher parental self-efficacy scores. (Marshall et al., 2016; Gross et al., 1989).

Other factors like varying sources of information across cultures, socioeconomic status (SES), parents' level of education, access to written material (Rowe et al., 2016; Hoff, 2016; Bornstein et al., 2010) have been found to influence child development.

While parenting a young child, when in doubt, it was noted that parents ask fellow parents, their own mothers and the child's paediatrician for advice. (Civitas Initiative, Zero to Three and Brio Corporation, 2000). Sometimes parent also seek information regarding parenting from their extended relatives especially in cultures where large kinship networks are valued. When this occurs, advice relating to parenting gets passed on to the next generation with certain traditional and culture-specific attitudes, beliefs, and methods of parenting. Seeking help from extended relatives (e.g. aunts, uncles, grandparents) for parenting advice, especially in cultures with larger kinship networks (Garcia-Coll & Pachter, 2002) contributes to culture-specific parenting beliefs and strategies being passed down across generations (Super & Harkness, 2002).

Parent education, independent of any other factor, aids the parent to use their knowledge to offer a more challenging environment and activities that focus on oral language use and literacy skills during the early childhood period as they better understand early cognitive and language developments (Leung et al., 2020; Suskind et. al, 2017; Noble et al., 2007; Sénéchal & LeFevre, 2002). This does not happen as effectively in homes with low parental education status and/or low SES homes (Winter et al., 2012; Parks & Smeriglio, 1986).

Most studies have considered maternal knowledge as an indicator for infant/child development. Maternal education and race/ethnicity related factors were associated with parental knowledge and practices. Similar studies must be done while considering the paternal factors to get a more detailed insight into the factors at play. Parental concerns especially in language and motor development possibly due to the explicit and concrete nature of verbal language and motor skills unlike the other domains were comparatively more reliable predictors with high sensitivity and specificity for prediction of delays in these domains (Chung et al., 2011; Chung et al., 2010; Glascoe, 1997).

A study by Marshall et al. (2016) exploring parents' ability to notice and respond to developmental concerns found that their participants reported the necessity for a family-centred approach to address developmental concerns while also emphasizing that there was a paucity in the same. Many participants in the study also reported that their paediatrician was the go-to professional for developmental concerns, yet there were delays in getting a screening or referral, in some cases delays up to the child's next visit. This delay was also documented in another study (Zuckerman et al., 2015). Several participants reported that they felt that there was an inadequacy of time or encouragement to discuss their concerns explicitly with their paediatricians. While few participants shared that they were hesitant in discussing developmental issues but would not feel the same way about medical concerns.

Karuppannan et al. (2020) concluded that due to lack of sources of information mothers of Kanchipuram district were not competently knowledgeable about their child's developmental norms and their milestones. Marshall et al. (2016) suggested that "...parents or

providers of children younger than 3 years could benefit from evidence - based knowledge and information about typical and atypical child development." They also identified that the lack of knowledge of typical development, at least partly, results in a delay in recognizing and seeking guidance.

Reviewing various available literature on the importance of parental knowledge and awareness, it seems that parent education programmes ought to positively affect parent behaviours and skills so as to improve the abilities and motivate the parent-child dyad (Schaefer, 1991). It could also be understood that such programs could also facilitate better speech-language stimulation by parents in developing children especially in the critical period of speech-language development. Most existing child development education programs are not individualized approaches, therefore neglect the non-homogeneity of the parent group, especially the low socio-economic backgrounds (Gilkerson et al., 2017; Hirsh-Pasek et al., 2015).

If raising concern regarding development is primarily a role of parents, then equipping them with the necessary and adequate knowledge will directly result in early identification and intervention if needed.

Need for the study

Researchers have identified parental knowledge as an impressionable variable of child development (Rowe, 2008; Veddovi et al., 2004; O'Callaghan et al., 1999). There is supposedly a direct relation between parenting knowledge and children's language, literacy

and behavioural skills (Abrahamson & Catherine, 2016; Glick et al., 2009; Benasich and Brooks-Gunn, 1996).

Parents are innately driven to raise their child to be cognitively, emotionally and socially competent (September et al., 2015), thus qualitative stimulation may happen naturally. In a case where that does not occur, parental knowledge about development could drive the parents to qualitatively stimulate the child.

Parent knowledge about child development would often involve testing the awareness of developmental milestones (Parks & Smeriglio, 1986). Greater parental knowledge of child development could also assist pediatricians during developmental assessments as they often ask parents to describe their child's strengths and weaknesses. Improving the process of identification for early intervention could have long-term benefits for this population of at-risk children who often require support. It could also serve as a cost-effective prevention initiative. Enlightening parents of infants with adequate knowledge is thus essential (Stevens, 1984; Chamberlin & Szumowski, 1980).

The current study is planned to gain an understanding of the parental constructs i.e., knowledge and perceptions of parents and future parents regarding child development as deemed important. This study contributes to evidence regarding parent awareness and perception of child development. The novelty of this study lies in the fact that there is a comparison between potential parent and parent group as well as comparison between fathers and mothers

A comparison between parent and potential parent will be used to interpret the influence of prior parenting experience. The findings will be used to delineate the need for parent education programmes for mothers as well as fathers, individually. Frequently observed delays in recognizing the need for consultation and seeking professional guidance due to lack of knowledge (Marshall et al., 2016; Zuckerman et al., 2015) can be controlled through these professionally aided programmes.

AIM AND OBJECTIVES OF THE STUDY

To study awareness and perception of developmental milestones of children up to 3 years of age among parents and potential parents in urban setup through a survey.

Objectives of the study

The objectives of the study include the following:

1. To investigate the overall awareness and perception of normal developmental milestones amongst the participants
2. To investigate the awareness and perception of normal developmental milestones amongst the potential parent group and parent group.
3. To investigate the age-related differences in awareness and perception of normal developmental milestones in potential parent group and parent group in the study.
4. To investigate for gender differences in awareness and perception of the normal developmental milestones in potential parent and parent groups.

Hypotheses of the study

The following null hypotheses are proposed for the present study:

H_o1 There is no significant difference in awareness and perception between the potential parent and parent group in the study.

H_o2 There is no significant age-related difference in awareness and perception of normal developmental milestones in potential parent group and parent group in the study.

H_o3 There is no significant gender difference in awareness and perception of normal developmental milestones in the potential parent and parent group of the study.

CHAPTER 2

Review of Literature

Decades of neuroscience and behavioural research has established that early experiences influence directly the fundamental make-up of the brain by establishing a foundation for the learning, health and behaviour that occur in the initial yet crucial years of life (Shonkoff & Richmond, 2009). Monitoring a child's early development is crucial in identifying distinctive disparities in their development. Clear developmental milestones have been established over the years. These milestones are empirical descriptions of marked behaviours for professionals working in healthcare or educational settings and parents to observe (Visser-Bochane et al., 2020). A deviation from the standard, termed as 'developmental delay' can be considered as evidence of atypical growth.

In children across the globe, prevalence of developmental delay has been reported to be around 1 – 3% (Hegde et al., 2019) and in India it is estimated to be around 1.4 to 2.4%. The statistic for the persistence of the delay in speech and language skills lingers around a staggering 40 – 60% which is a significant number of individuals. Furthermore, when left untreated, problems maybe noticed in adulthood in the social, emotional, behavioural, and cognitive domains (Sunderajan & Kanhere, 2019). "Early detection of developmental delay is important for instituting community-based intervention programs as early as possible, in an effort to prevent onward progression to disability" (Nair et al., 2013).

However, it has been noted that the average age of intervention is 4 years (Kaur et al., 2006), at which point only 1 - 2 years of the critical age for language learning remains as

evidenced by biological maturation theories and the critical period hypotheses. The reported age of 4 years is clearly reflective of delay of in early identification and intervention. This can be due to socio-economic status, availability of services, among many other factors but a key aspect that might take lead is parent awareness and perceptions of developmental milestones.

2.1 Developmental Milestones in Typically Developing Children

Developmental milestones are skills that a child acquires as part of their development. There are some skills that are overt and noticeable like walking for the first time or the first word of the child, while some maybe harder to recollect when asked like "when did your child start hopping, comprehend complex utterances". Thus, skills that are overt are often called developmental milestones and by virtue of being more noticeable it is easier to keep track for parents. In turn, these questions are reliable indicators that can be asked to parents to find out if their child's development is delayed. Developmental milestones are universal and most children follow the same pattern of acquisition albeit time ranges may vary by a few months. They predominantly include motor and speech-language milestones while some charts may comprise of play behaviour, cognitive skills, emotional skills, and social skills as well.

An Indian study by Gupta et al. (2016) compared age of achievement of motor milestones of children in rural north India and World Health Organization's (WHO) windows of achievement for 6 gross motor skills, as shown in Table 2.1.

Table 2.1

Age of achievement of motor milestones - comparison between WHO study and Gupta et al. (2016)

Motor milestones	WHO study (longitudinal study)		Gupta et al. (2016)
	Windows of achievement (in months)	Median age (months)	Study on motor milestones achievement in rural North India in months (Cross sectional study)
Sitting without support	3.7 – 9.4	5.9	6.0
Hands and knees crawling	5.0 – 13.9	8.3	10.4
Standing with assistance	4.7 – 11.7	7.4	9.1
Walking with assistance	5.8 – 14.1	9.0	10.9
Standing alone	6.7 – 17.4	10.8	12.8
Walking alone	8.0 – 18.0	12.0	13.7

Adapted from "The study on achievement of motor milestones and associated factors among children in rural North India" by Gupta, A., Kalaivani, M., Gupta, S., Rai, S., & Nongkynrih, B, 2016, Journal Of Family Medicine And Primary Care, 5(2), 378.

Another cross-sectional study by Ertem et al. (2018) exploring milestone achievement in the domains of expressive language, receptive language, gross motor, fine motor, relating, and play skills among four countries namely Argentina, India, South Africa, and Turkey. The following table depicts their data on Indian children's age of attainment of milestones:

Table 2.2

Median age of Attainment of milestones in total sample vs India (Ertem et al., 2018)

Milestones	**Median Age of Attainment in months** (Total sample from four countries)	**Median Age of Attainment in months** (India)
Expressive language		
1. Relaxes when held	0·0 (0·0–0·1)	0·0 (0·0–0·0)
2. Makes different sounds for happy, irritable, hungry states	0·0 (0·0–0·4)	0·1 (0·0–0·4)
3. Vocalises vowels	1·1 (1·x0–1·3)	0·8 (0·7–1·0)
4. Laughs aloud	2·8 (2·7–2·9)	3·0 (2·8–3·2)
5. Vocalises combined vowel and consonant sounds	4·6 (4·5–4·8)	4·7 (4·3–5·0)
6. Uses gestures (shakes head in protest, lifts arms to be picked up)	5·4 (5·2–5·5)	6·2 (5·9–6·6)
7. Repeats syllables	6·3 (6·1–6·4)	6·7 (6·4–7·1)
8. Has one meaningful word	9·3 (9·1–9·6)	10·1 (9·6–10·5)
9. Uses arm or hand to point to people or objects	8·5 (8·3–8·8)	9·8 (9·5–10·4)
10. Uses index finger to point	12·0 (11·7–12·2)	11·9 (11·4–12·4)
11. Uses two meaningful words	12·5 (12·2–12·9)	12·2 (11·6–12·8)
12. Caregivers understand some of child's communication	13·6 (13·3–13·9)	12·1 (11·5–12·7)
13. Uses four meaningful words	15·3 (14.9–15.7)	14.0 (13.5–14.5)
14. Uses six meaningful words	16·7 (16·3–17·1)	16·1 (15·3–16·8)
15. Uses combination of words and gestures to communicate desires	16·2 (15·8–16·5)	15·6 (15·0–16·4)
16. Strangers understand some of child's communication	16·5 (16·1–16·9)	14·3 (13·5–15·0)
17. Uses two-word sentences (eg, "give water")	21·1 (20·6–21·5)	19·1 (18·3–19·9)
18. Caregivers understand most of child's speech	21·5 (21·0–22·0)	17·0 (16·1–17·9)
19. Uses sentences with at least three words to communicate	24·9 (24·4–25·4)	23·2 (22·3–24·2)
20. Caregivers understand all of child's speech	25·2 (24·6–25·9)	22·8 (21·5–24·2)

Table 2.2 *(continued.)*

Milestones	Median Age of Attainment in months (Total sample from four countries)	Median Age of Attainment in months (India)
21. Uses three-word sentences to communicate desires (eg, "mama want food")	25.3 (24.8–25.8)	23·6 (22·7–24·5)
22. Uses pronouns	25·6 (25·1–26·1)	24·4 (23·5–25·4)
23. Uses past tense	28·0 (27·5–28·6)	27·8 (26·6–29·1)
24. Uses sentences with four words to communicate	28·1 (27·6–28·7)	26·9 (25·9–27·9)
25. Strangers understand most of child's speech	28·7 (27·9–29·6)	26·7 (25·2–28·4)
26. Recounts a story or an event	30·4 (29·8–31·1)	29·8 (28·6–31·2)
Receptive language		
27. Alerts when talked to, slows down movements	0·0 (0·0–0·0)	0·0 (0·0–0·1)
28. Shows listening by watching face when caregiver speaks	0·4 (0·3–0·5)	0·4 (0·3–0·6)
29. Responds by making sounds when caregiver talks	1·6 (1·5–1·7)	1·5 (1·3–1·7)
30. Shows understanding of common words (eg, "no" and "mummy")	6·1 (5·9–6·3)	7·0 (6·6–7·4)
31. Understands names of familiar people	7·3 (7·0–7·5)	8·1 (7·8–8·6)
32. Understands verbs or action words	8·1 (7·9–8·3)	10·1 (9·6–10·5)
33. Understands names of objects	10·3 (10·1–10·6)	9·6 (9·2–10·0)
34. Waves "bye" or gestures in response to command	10·8 (10·6–11·0)	10·2 (9·8–10·6)
35. Understands one simple command	12·5 (12·3–12·8)	12·1 (11·7–12·6)
36. Understands more than one simple command	14·4 (14·0–14·7)	13·2 (12·7–13·8)
37. Listens to brief stories or when caregivers narrate an event	15·5 (15·2–15·9)	15·6 (14·9–16·5)
38. Understands names of at least three objects (eg, ball, dog, spoon)	19·2 (18·8–19·7)	15·5 (14·8–16·2)
39. Answers simple questions ("Is mummy home?")	20·3 (19·9–20·7)	19·3 (18·5–20·2)
40. Understands two-level commands	21·6 (21·1–22·0)	19·7 (18·9–20·6)
41. Understands prepositions (eg, "under" or "on top")	21·8 (21·3–22·3)	20·2 (19·2–21·1)
Gross motor		
42. Moves arms and legs equally on both sides	0·0 (0·0–0·0)	0·0 (0·0–0·0)
43. Raises face when lying on tummy (prone)	0·1 (0·0–0·2)	0·1 (0·0–0·2)

Table 2.2 *(continued.)*

Milestones	**Median Age of Attainment in months** (Total sample from four countries)	**Median Age of Attainment in months** (India)
44. Turns head (prone)	0·4 (0·3–0·5)	0·4 (0·3–0·6)
45. Holds head steady and erect	2·1 (2·0–2·3)	2·8 (2·5–3·0)
46. Lifts head 90° (prone)	2·5 (2·4–2·6)	3·2 (3·0–3·4)
47. Held erect, straightens, pushes legs rather than bending	3·8 (3·7–3·9)	3·9 (3·7–4·2)
48. Sits with support	4·3 (4·1–4·4)	4·6 (4·3–4·8)
49. Rolls front to back to front	5·7 (5·6–5·9)	5·6 (5·4–5·9)
50. Sits without support	6·5 (6·4–6·7)	7·1 (6·8–7·5)
51. Pulls to stand holding on to objects	8·5 (8·3–8·7)	8·2 (7·9–8·6)
52. Walks holding on to objects	9·7 (9·6–9·9)	9·7 (9·4–10·1)
53. Stands alone momentarily	10·0 (9·8–10·2)	9·9 (9·5–10·3)
54. Walks alone	12·9 (12·7–13·1)	12·6 (12·1–13·0)
55. Kicks ball or another object	13·9 (13·6–14·2)	13·9 (13·3–14·4)
56. Walks upstairs holding caregivers' hand or rail	17·6 (17·1–18·1)	15·3 (14·7–15·9)
57. Walks down stairs holding caregiver's hand or rail	20·0 (19·5–20·6)	17·7 (16·9–18·5)
Fine motor		
58. Keeps hands open (not fisted) some of the time	2·1 (2·0–2·2)	1·7 (1·2–2·1)
59. Brings both hands to midline	2·2 (2·1–2·3)	2·4 (2·1–2·7)
60. Keeps hands open (not fisted) most of the time	2·2 (2·0–2·3)	1·7 (1·2–2·1)
61. Reaches towards objects or people with hands	4·1 (4·0–4·2)	4·7 (4·5–4·9)
62. Holds and handles toys or objects (not grasp reflex)	4·1 (4·0–4·2)	4·6 (4·4–4·8)
63. Transfers objects hand to hand using fingers and palm	5·6 (5·5–5·8)	6·3 (6·1–6·6)
64. Picks up small objects using pincer (thumb and index) aided by other fingers	6·4 (6·3–6·6)	7·3 (6·9–7·6)
65. Picks up small objects using pincer (thumb and index) only	9·4 (9·2–9·6)	9·3 (8·8–9·7)
66. Holds pencil or stick in any way and scribbles	13·5 (13·3–13·8)	13·4 (12·9–13·9)
67. Holds with fingers pencil or stick and scribbles	18·3 (17·8–18·8)	17·5 (16·8–18·2)
68. Holds pencil or stick skilfully at lower tip with fingertips, draws	28·5 (27·8–29·4)	28·3 (27·0–29·9)
Relating		
69. Looks at caregiver's face and follows with eyes	0·3 (0·2–0·4)	0·4 (0·3–0·6)

Table 2.2 *(continued.)*

Milestones	**Median Age of Attainment in months** (Total sample from four countries)	**Median Age of Attainment in months** (India)
70. Smiles back to caregiver's playful approaches	0·6 (0·4–0·7)	0·6 (0·3–0·8)
71. Has prolonged, meaningful eye contact	0·9 (0·8–1·0)	1·0 (0·8–1·2)
72. Shows desire to engage with people (eg, looks, smiles, reaches, vocalises)	2·0 (1·9–2·2)	2·6 (2·4–2·8)
73. Shows preference to and recognition of caregivers (eg, reaches, smiles, inspects faces)	3·7 (3·5–3·8)	4·5 (4·3–4·8)
74. Reacts when caregiver leaves, relaxes when they are reunited	5·7 (5·5–5·9)	5·8 (5·5–6·0)
75. Shows recognition of strangers (eg, turns away, shows caution, shyness, fear)	6·0 (5·8–6·2)	6·6 (6·2–6·9)
76. Spontaneously seeks to share enjoyment with others (eg, cuddles or kisses caregiver)	8·6 (8·4–8·8)	7·9 (7·5–8·3)
77. Imitates others' behaviours (eg, waving back)	10·8 (10·6–11·1)	12·2 (11·7–12·8)
78. Initiates specific interactions with people	12·7 (12·4–13·1)	15·8 (15·0–16·8)
79. Talks about favourite people when they are not with them (eg, "where is grandpa?")	26·2 (25·6–26·7)	23·8 (22·8–24·7)
Play		
80. Engages when approached playfully (moves limbs)	0·1 (0·0–0·4)	0·2 (0·0–0·4)
81. Makes sounds in response to play	1·3 (1·2–1·4)	1·3 (1·1–1·5)
82. Grasps toys or objects with interest	3·5 (3·4–3·6)	4·0 (3·8–4·3)
83. Brings toy or objects to mouth	3·6 (3·5–3·7)	3·7 (3·5–3·9)
84. Looks at own hands	3·9 (3·8–4·0)	4·3 (4·0–4·5)
Table 3.2 *(continued.)*		
85. Responds to interactive play such as "pee-a-boo"	4·6 (4·4–4·7)	4·9 (4·6–5·1)
86. Shakes toys or objects in play	4·7 (4·6–4·8)	5·1 (4·9–5·4)
87. Throws and bangs toys or objects	5·8 (5·6–5·9)	6·4 (6·2–6·7)
88. Inspects toys or objects with curiosity, looks at some detail	6·3 (6·1–6·5)	6·7 (6·4–7·1)
89. Looks for toys or objects that disappear	6·3 (6·2–6·5)	6·5 (6·3–6·8)
90. Imitates gestures during play (eg, clapping hands, making a face)	7·8 (7·6–8·0)	8·3 (7·9–8·6)
91. Initiates interactive game like "peek-a-boo"	8·4 (8·2–8·7)	8·6 (8·2–9·0)

Table 2.2 *(continued.)*

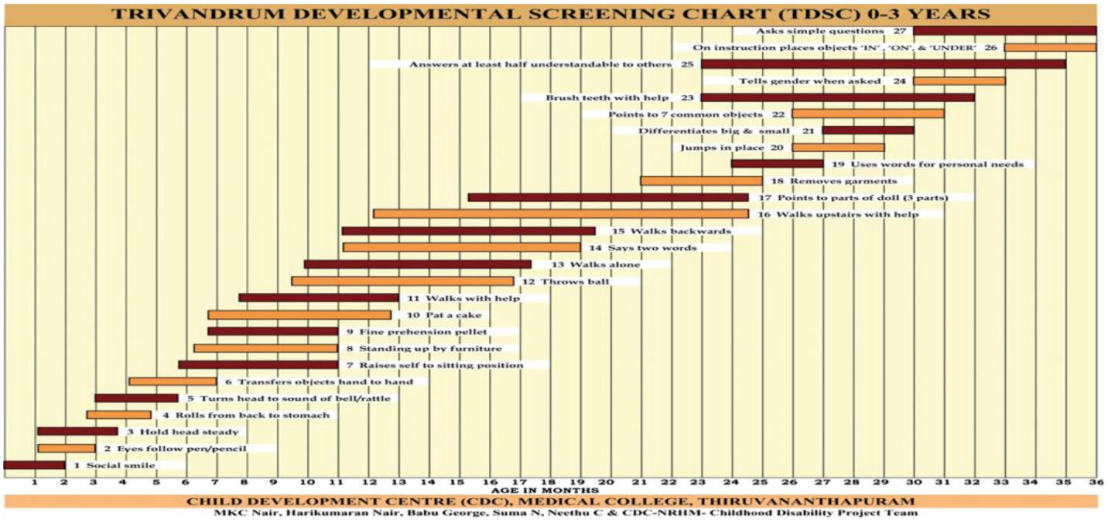
Milestones	**Median Age of Attainment in months** (Total sample from four countries)	**Median Age of Attainment in months** (India)
92. Inspects how toys or objects work (eg, how doll moves, lights turn on)	10·8 (10·5–11·1)	10·7 (10·2–11·2)
93. Has simple imaginary play (eg, feeding doll, driving cars)	13·6 (13·2–13·9)	13·6 (13·0–14·3)
94. Involves others in play	13·7 (13·3–14·0)	13·8 (13·1–14·5)
95. Has complex pretend play (eg, cooking a meal, feeding a doll, driving, filling a car up with gas)	24·4 (23·7–25·0)	24·4 (23·3–25·5)
96. Sustains complex pretend play with many themes (house, soldiers) alone	31·6 (30·7–32·6)	32·7 (31·4–34·2)
97. Sustains complex play with many themes (house, soldiers) with others	34·0 (33·0–35·0)	35·6 (34·0–37·6)
Self help		
98. Uses fingers to feed self (knows it is food, eats)	8·6 (8·4–8·8)	10·4 (9·9– 11·0)
99. Drinks from cup	13·0 (12·5–13·4)	14·4 (13·8–15·1)
100. Takes a piece of clothing off	14·9 (14·2–15·4)	19·4 (18·4–20·3)
101. Uses one feeding utensil	15·1 (14·7–15·5)	15·9 (15·3–16·6)
102. Washes hands with assistance	20·7 (20·1–21·2)	17·9 (17·0–18·8)
103. Brushes teeth with assistance	24·2 (23·6–24·8)	20·9 (19·9–22·0)
104. Toilet trained during the day	29·0 (28·3–29·6)	24·4 (23·4–25·7)
105. Puts some clothing on (eg, jacket or skirt)	29·2 (28·5–30·0)	28·9 (27·5–30·5)
106. Toilet trained during the night (dry most nights)	33·6 (32·8–34·4)	30·8 (29·4–32·5)

Note. Adapted from "Similarities and differences in child development from birth to age 3 years by sex and across four countries: a cross-sectional, observational study" by Ertem, I. O., Krishnamurthy, V., Mulaudzi, M. C., Sguassero, Y., Balta, H., Gulumser, O., Bilik, B., Srinivasan, R., Johnson, B., Gan, G., Calvocoressi, L., Shabanova, V., & Forsyth, B. W. C., 2018, The Lancet. Global Health, 6(3), e279–e291.

A fairly recent attempt at developing a screening chart called the Trivandrum Developmental Screening Chart (TDSC, Nair et al., 2013) lists the various milestones that appear chronologically with time frames suggesting emergence and mastery. (See Figure 2.1)

Figure 2.1

Trivandrum Developmental Screening Chart



Note. Reprinted from "Development and Validation of Trivandrum Development Screening Chart for Children Aged 0-6 years [TDSC (0-6)]" by Nair, M. K. C., Nair, G. S. H., George, B., Suma, N., Neethu, C., Leena, M. L., & Russell, P. S. S., 2013, The Indian Journal of Pediatrics, 80(S2), 248–255.

2.2 Parent Knowledge of Child Development and its Importance

Researchers have identified parental knowledge as an impressionable variable of child development regardless of education, income, or parenting experience (National Academies of Sciences, Engineering, and Medicine [NAS], 2016; Rowe, 2008; Veddovi et al., 2004; O'Callaghan et al., 1999; Glascoe, 1997) especially for at-risk populations (Dinnebeil & Rule, 1994; MacPhee, 1984). It can be claimed that certain extent of knowledge of developmental milestones or warning signs might help in identification of delays in children. Materials like Knowledge of Child Development Inventory tests exactly that. (KIDI; Smith et al., 2010; Ertem et al., 2007). The importance of parent knowledge has also been associated with other

variables including previous childcare experiences, sources of information for learning about child rearing, and maternal level of education. These factors have been found to influence parental self-efficacy measures (Gross et al., 1989). More knowledgeable parents practice effective parenting practices (Diehl et al., 2011; Huang et al., 2005; Reich, 2005).

2.3 Parental Attitudes and Beliefs on Developmental Milestones of Motor and Speech and Speech Language Skills

In a study, Chung et al. (2010) subdivided major parental concerns into 6 categories as "cognition, language/speech, motor, behavioural/ psychological, global delays and nonspecific delays". Of these, motor and language/speech concerns had the highest sensitivity and specificity. Motor concerns had a sensitivity of 83% and specificity of 86%, while language/speech concerns had a sensitivity of 81% and specificity of 94%. Parents seemed to detect delays in these areas by virtue of these domains being relatively more discernible and concrete (Valla et al., 2015). Once detected, language or motor delays can be predictors of co-occurring developmental disorders (i.e., autism spectrum disorder [Harris, 2017], cerebral palsy, global developmental delay) contributing towards proper treatment of children with developmental disorders.

There have been multiple researchers studying the sources and factors influencing parenting knowledge and beliefs. Most of the knowledge and beliefs regarding parenting are passed down across generations resulting in specificity of information and beliefs within cultures (Super & Harkness, 2002). Parents have a genetically programmed goal to raise their child to be competent in the domains of cognitive, emotional, and social skills (September et

al., 2015). However, educational status of both parents (Rowe et al., 2015; Bornstein et al., 2010), quantity and quality of early childhood stimulation (Rowe, 2008; Vernon-Feagans et al., 2008; Barrueco et al., 2007), social class (Noble et al., 2007) have an effect on parental concern.

Parents of lower SES displayed less parenting knowledge (Parks & Smeriglio, 1986). This was later corroborated by Winter et al. (2012) who stated higher socio-economic status parents especially the ones with higher education possess a greater depth of knowledge about child development. Parent education, independent of any other factors, aids the parent to use their knowledge to offer a more challenging environment with activities that focus on oral language use and literacy skills during the early childhood period as they better understand early cognitive and language developments (Leung et al., 2020; Suskind et. al., 2017; Noble et al., 2007; Sénéchal & LeFevre, 2002). This does not happen as effectively in homes with low parental education status.

Most studies have considered maternal knowledge as an indicator for infant/child development. Factors found to be associated with parenting knowledge in mothers were maternal education, race/ethnicity related. Similar studies must be done while considering the paternal factors to get a more detailed insight into the factors at play. Parenting practices such as frequency of book-reading and singing with children and more stimulating teaching behaviours during parent–child interactions are determined by knowledge of parenting skills independent of parent education and ethnicity (Barrueco et al., 2007). Other factors like varying sources of information across cultures, socioeconomic status (SES), parents' level of

education, access to written material (Rowe et al., 2015; Hoff, 2016; Bornstein et al., 2010) have been found to influence child development.

2.4 Need for Parent Education Programs on Child Development

The speech and language stimulation quantitatively and qualitatively used by the parents on a day-to-day basis is in relation to the parental knowledge which is influenced by the SES (Leung & Suskind, 2020; Rowe, 2008). A well established and strong predictor of child language and literacy skills seem to be the nature of parent-child interaction which in turn appears to be influenced by differences in SES groups. Hoff's study in 2016 clearly acknowledges that semantic and syntactic milestones are acquired later in children of lower SES parents compared to their high SES peers.

Over thousand parents were interviewed as part of a large scale study which revealed that parents sought advice from each other, their mothers, and their pediatricians (Civitas Initiative, Zero to Three and Brio Corporation, 2000). Parents relying on pediatrician for guidance, reluctant to discuss developmental issues, prioritizing medical concerns over developmental ones and inability to get access to a timely screening or referral (Marshal et al., 2016) could hinder early diagnosis and intervention. In cultures where large kinship networks are cherished, advice was sought from extended family members like uncles, aunts, etc. (Garcia-Coll & Pachter, 2002). Mothers reported lesser concerns and eagerness to pursue services in their husbands and those who were somewhat supportive of seeking help relied on the wives to follow up on their concerns (Marshall et al., 2016).

Previous parenting experience played a major role in attaining knowledge of child development for most parents (Marshall et al., 2016). A parent with a previous experience of parenting, thus greater child development knowledge (MacPhee, 1983) is more likely to facilitate better infant development (Veddovi et al., 2004). These parents have also been found to perform better on parental self-efficacy measures (Gross et al., 1989). Despite a parent having a concern, there is frequently persistence in delayed diagnosis by a provider (Zuckerman et al., 2015) due to differences in attitude, belief, and educational level. In addition to the fore mentioned factors other potential causes are listed in Table 2.3.

Table 2.3

Factors potentially contributing to late referral (Before Diagnosis)

Parental awareness about their child's speech and language problems
Parental awareness about the natural course of speech and language development in children
Parental awareness about the existence of speech and language therapeutic services
Having received proper counseling by physicians about the importance and necessity of early diagnosis of speech and language problems in children
Having received proper counseling by physicians about screening tests for children's speech and language delays
Having received proper counseling by physicians about diagnostic tests for hearing impairment in children
Parents' concerns about their child's disorder being unfold to relatives and family
Parents' denial of warning signs of speech and language delay in their child
Existence of other priorities in the life of parents

Table 2.3 *(continued.)*

The extent of parents' concerns about speech and language disorders in the global health of their child	
Having received guidance from other professionals about the importance and necessity of early diagnosis of speech and language problems in children	

Adapted from "Delayed Referral in Children with Speech and Language Disorders for Rehabilitation Services" by Vameghi, R., Bakhtiari, M., Shirinbayan, P., Hatamizadeh, N., & Biglarian, A, 2015, Iranian Rehabilitation Journal, 13(1).

A study by Rosenberg et al. (2008) reported "remarkably low" rates of children receiving intervention despite of being identified with a delay within the first two years of life. "Perceived severity of and susceptibility to child's developmental delays contributes to parental perception of the delay as a problem (concern) and subsequent motivation to seek developmental services" (Champion & Skinner, 2008; Rimer & Glanz, 2005; Poss, 2001).

Programs aimed at educating parents of newborns must inevitably include information on child development (Stevens, 1984; Chamberlin & Szumowski, 1980), as it may directly influence the quality of stimulation in the home environment. The variance in the quality of stimulation among the socioeconomically disadvantaged households brings out the need for promulgation of guidance on early childhood care and development. In fact, it has been suggested that a baseline screening tool be incorporated to tailor the guidance to specific family's needs and strengths with the intention of escalating sensitivity and affection, positively (Leung & Suskind, 2020). Other parental constructs must also be taken into consideration while designing a culturally sensitive asset based education program i.e. beliefs/cognitions, knowledge, and experience (Raz & Beatty, 2018; Abrahamson, 2016).

Paediatric practitioners are not well equipped with resources to assess parental knowledge. This may lead to inefficient selection of candidates for training, inability to essentially develop parents as effective educators of their own children (Schaefer, 1991). Therefore, culture-based tools for assessment must be developed. Enriching a child's immediate environment could potentially narrow the gap between quality and quantity of effective stimulation among socioeconomic groups. Language and literacy skills of more and more children from the low socioeconomic homes will assumedly be on par with their higher socioeconomic status peers (Rowe et al., 2015).

Baker et al. (2019) noted a significant positive difference in both knowledge of early childhood in the mothers and expressive vocabulary of their children as an effect of the workshop along with increased reading time to their children at home. All the participating mothers found the information conveyed to them useful. These mothers were motivated to socially engage and support not only their children but also other parents.

These programs must also explicitly state other long-term benefits of early childhood stimulation such as, curiosity, creativity, decisiveness, etc. thereby, facilitating effective stimulations in the child's education. (Schaefer, 1991). One such example is the "Learn the Signs. Act Early" (LTSAE) campaign (2004) launched by Center for Disease Control (CDC) to educate parents about developmental milestones and the importance of monitoring them. It also aimed to promote communication between medical providers and parents about developmental milestones, and to motivate parents to act early. The CDC created and provided free developmental monitoring LTSAE resources for parents, including a relevant checklist, posters, and a 42-page Milestone Moments Booklet with additional information on what the parents can do to help their child develop. This program has been noted to be effective in

raising parental awareness of age specific developmental milestones and increasing parent and healthcare professionals' conversations about development (Gadomski et al., 2018).

Parent education programs on child development can be considered as a "cost-effective prevention initiative" that also aids in improving the process of identification for early intervention for at-risk children who often require support (Leung & Suskind, 2020). It can be challenging to enroll parents that value privacy, have preconception that professionals maybe indifferent or insensitive and thus avoid communicating with the concerned professional altogether. Nevertheless, respecting parents' boundaries and then enrolling them in cooperative and collective learning processes help them in aiding their child to develop holistically. (Comer, 1988).

Clearly, determining the current status of parents' awareness of developmental milestones and their perception of developmental service delivery is the first step in creating a more vigilant community. Children will be able to get assistance during the critical developmental stage based on subtle observations made by the parents. There need to be more easily accessible well planned, and mandated parenting training programs to promote more effective help-seeking behaviours. This research will aid in determining the necessity and possible future target objectives.

Chapter 3

METHOD

The primary aim of the current study was to assess the awareness and perceptions of parents and potential parents on developmental milestones of children up to 3 years of age in an urban setup.

Research Method/Design: The study followed a descriptive survey type of research design conducted through an online mode.

Principles of the study

The survey was carried out adhering to the AIISH ethical committee guidelines for Bio-Behavioural Sciences for Human Subjects (AEC, 2009):

Phase 1: Development of the questionnaire

Phase 2: Validation of the questionnaire

Phase 3: Administration of the questionnaire

3.1 Participants

The participants of the survey were classified into two groups – Group 1 included potential parents and Group 2 included parent group. An informed consent was obtained for participation in the survey. In order to determine the socio-economic status of participants, NIMH Socio-Economic Status Scale (NIMH SES scale), Revised Version developed by Venkatesan (2011) was used. It suggests the socio-economic status based on monthly income,

highest education, occupation and family properties. Middle class and above were considered for inclusion criteria.

Group 1: Potential Parent Group

Forms were sent to 50 individuals to take part in the study. Responses of 47 individuals were received of which 10 were excluded; 8 due to lack of English proficiency and 2 for not consenting to participate in the study. Finally, this group had 37 participants. The potential parent group comprised of individuals with no prior parenting experience.

Participant inclusion criteria:

a) Married individual with no children.
b) Age: 18 years and above for females; 21 years and above for males.
c) Proficient in English (with English as the medium of graduate level of education).
d) Middle class and above based on NIMH SES scale

Group 2: Parent Group

Forms were sent to 50 individuals to take part in the study. Responses of 49 individuals were received of which 2 were excluded due to lack of English proficiency. Finally, this group had 47 participants. This group comprised of individuals with at least 1 child and thus had prior parenting experience.

Participant inclusion criteria:

a) Married with at least one child.

b) Age: 18 years and above for females; 21 years and above for males.

c) Proficient in English (with English as the medium of graduate level of education).

d) Middle class and above based on NIMH SES scale.

General exclusion criteria:

- Medical professionals (General physicians, Pediatricians, Nurses, etc.) and childhood rehabilitation professionals (Speech-Language Pathologists, Occupational Therapists, Physiotherapists, Psychologists, etc).
- Parents of child/children with disability/disabilities.

3.2 Test Material

Phase 1: Development of the questionnaire

The questionnaire was divided into two sections:

Section I: Awareness

Items under the "Awareness" section had 20 developmental milestones that appear in children between the ages of 0-3 years. There were 10 items each for motor skills and speech-language skills. The skills were scattered across 0-3 years of age and an equal number of skills were chosen for each year of life across this period of development, i.e., 0-1, 1-2, and 2-3 years except one age range to maintain a total of ten items each. Participants were expected to judge the appropriate age of emergence for the skill mentioned e.g. 'At what age does a child use his/her word?'. Five options for each item were listed, of which only one was correct and choosing any other option would result in either overestimating or underestimating the emergence of the skill.

This section was developed using sources for normal speech and language, and motor milestones which included the Integrated Scale of Development (Cochlear Ltd, 2005), Communication DEALL Developmental Checklist (Karanth, 2007) and Developmental Screening Test (DST) (Bharathraj, 1983). These particular tools were chosen taking into consideration their high frequency usage in clinical screening/evaluations. More importantly, it covered the developmental domains of motor and speech-language skills.

Section II: Perception

This section contained skills/behaviours with a corresponding age range and frequency of occurrence mentioned. For e.g.: Q37. Hand flapping most of the time during play at 2.5 years of age. (See Appendix)

The participants were expected to characterize the statements as typical, atypical, or unable to decide. 'Typical' was operationally defined as "representative of what occurs in normally developing children". 'Atypical' was operationally defined as "not representative of what occurs in normally developing children". 'Unable to decide' was operationally defined as "unable to label the statement as either typical or atypical". There was a total of 8 items under this subsection.

Section III: Attitudes and Beliefs

This section contained questions with respect to parent attitudes and beliefs regarding child development and child developmental services. It had a total of 10 items; 5 each under attitudes and beliefs respectively.

Example of item under parent belief: I am more likely to discuss a delay in my child/ children's motor or speech development with my _____ first. The options included professionals and non-professionals. Professionals included paediatrician, psychologist, speech therapist, occupational therapist, physiotherapist while non-professionals included spouse, elders, friends, relatives, neighbours, and babysitter

Example of item under parent attitude: How likely are you to attend a webinar/seminar on child development?'. Options: Strongly agree, Agree, Undecided, Strongly disagree, Disagree.

For the purpose of content validation 'item pool' for each section was created after taking into consideration the redundancy of items from various sources and relevance under each domain of interest (i.e. speech and language, and motor development). Care was taken to maintain suitability of the items to Indian context.

Phase 2: Validation of the tool

The prepared item pool was given to three professionals who had experience in terms of understanding developmental milestones of motor and speech-language skills in children. The professionals included two Speech-Language Pathologists and one Occupational Therapist with at least ten years of clinical experience for content validation of the tool. They were given clear information on the structure of the questionnaire and were asked to choose most appropriate items from the item pool independently. They were also free to suggest modifications to existing items and new items.

For the construction of the final questionnaire, items that were commonly chosen between the three content validators were selected. A few items were chosen even if it was two

validators against one taking into consideration the structure of the questionnaire to maintain the number of items under each section/subsection.

The demographic section prefaced the above mentioned sections. The questions of the demographic section was intended to gather information like gender, age, contact details, years of marriage, number of children and their ages, and questions relating to family income and properties, education, and occupation for the purpose of NIMH SES scale.

Phase 3: Administration and Scoring of the questionnaire

The final questionnaire was converted into a Google form for ease of access to the participants through online modality.

3.3 Procedure

The participants were recruited through personal contacts and referral through friends and family. They were sent the link to the questionnaire for online access. They could participate through any device like phone, tablet, desktop or laptop with an internet connection. The questionnaire took roughly 15–20 minutes to complete. Once the form was submitted, changes to the answers or duplicate form responses were not permitted. Before the start of the questionnaire, the purpose of the questionnaire study was explained and clear instructions were provided to the participants to serve as a guideline for filling the form. All participants had the option to not participate in the study. AIISH Ethical Guidelines for Bio-Behavioural Research involving Human Subjects (AEC, 2009) were followed.

Data Analyses and statistics:

The responses received were scored for 38 items of the questionnaire were scored, recorded and tabulated separately for Section I (Awareness), Section II (Perception), and Section III (Attitudes and Beliefs). Statistical Analyses was carried out using SPSS- Statistical Package for Social Sciences Version 21.0 (IBM Corp., Armonk, NY, USA). Descriptive and inferential statistics were done.

With the data of the responses obtained, the following analysis was done:

i. The overall investigation of the level of awareness, knowledge and perception in the participants.
ii. Comparison between the potential parent and parent group.
iii. Comparison of results based on age of respondents.
iv. Comparison of results based on gender of respondents.

CHAPTER 4

Results

The primary aim of the current study was to assess the awareness and perceptions of parents and potential parents on developmental milestones of children up to 3 years of age in an urban setup. The objectives of the study were to investigate the overall awareness and perception of normal developmental milestones amongst all the participants and to obtain differences based on parenting experience, age and gender of the participants (on Sections I, II and III of the questionnaire). A total of 84 individuals participated in the study. The demographic details of the participants are given in Table 4.1. The questionnaire consisted of 38 items, responses for which were recorded and tabulated separately for Section I (Awareness), Section II (Perception), and Section III (Attitudes and Beliefs). Statistical Analysis was carried out using SPSS- Statistical Package for Social Sciences Version 21.0 (IBM Corp., Armonk, NY, USA).

Table 4.1
Demographic details of the participants in the study (N=84)

	No. of participants	
Age (in years)	n	%
21- 35	62	73.8
36- 50	22	26.2
Highest education qualification		
Graduation	52	61.9
Post-Graduation& above	32	38.1

Table 4.1 *(continued.)*	No. of participants	
	n	%
Gender		
Male	29	34.5
Female	55	65.5
Socioeconomic Status		
III - Middle class	8	9.5
IV - Upper middle class	32	38.1
V - Upper class	44	52.4
Parenting experience		
Present	47	55.9
Absent	37	44.1

The data was subjected to Shapiro Wilk's test for normality and the results revealed that the data did not follow normal distribution ($p>0.05$). Hence, non-parametric tests were employed. The statistical analysis of the data was done using the following statistical procedures:

a. Descriptive statistics was carried out to obtain frequency, mean, median, standard deviation (SD) and interquartile range for Section I of the questionnaire.
b. For between-group comparison, Mann Whitney U test was used for parenting experience, age, and gender-based analysis for Section I of the questionnaire.
c. Descriptive statistics was carried out to obtain frequency distribution for Section II & III of the questionnaire

d. To check for independence of responses based on parenting experience, age, and gender of the participants, Chi-square test of independence was used.

The results of the current study are elucidated under the following sections:

4.1 Overall awareness and perception of normal developmental milestones amongst the participants

4.2 Association between parenting experience, age and gender of the participant and awareness and perception of normal developmental milestones.

4.1 Overall results of Awareness and Perception of Normal Developmental Milestones amongst the participants

Results under this section are reported based on the sections of the questionnaire; Awareness (Section I) and Perception (Section II and III) under the following subsections:

4.1.1 Overall results on awareness of developmental milestones of motor and speech-language skills up to 3 years of age in children amongst the participants.

4.1.2 Overall results on perception of developmental milestones of motor and speech-language skills.

4.1.1 Overall results on Awareness of Developmental Milestones of Motor and Speech-language Skills up to 3 years of age in Children amongst the participants.

In Section I of the questionnaire, the participants were asked to report suitable age for each developmental skill given (See Appendix). The overall mean number of participants who answered correctly was 19.22% (± 9.51), the incorrect responses were interpreted as

underestimation or overestimation. The results shown in Table 4.2, obtained for questions Q14-Q33 are explained in the following section.

Table 4.2

Frequency distribution of responses for awareness of motor and speech-language developmental milestones

Item	Skill	Underestimation		Correct		Overestimation	
		n	%	n	%	n	%
Q14	Hold his/her head steady	77	91.7	7	8.3	0	0
Q15	Jump off the floor with both feet	33	39.3	8	9.5	43	51.2
Q16	His/her palm and fingers to fill and eat with spoon	61	72.6	10	11.9	13	15.5
Q17	Begin to roll over	39	46.4	28	33.3	17	20.2
Q18	Point to recognized objects	20	23.8	10	11.9	54	64.3
Q19	Start crawling	36	42.9	29	34.5	12	22.6
Q20	Pull pants up with assistance	28	33.3	25	29.8	31	36.9
Q21	Sit independently	37	44.1	30	35.7	17	20.2
Q22	Throw a ball over head	28	33.3	18	21.4	38	45.2
Q23	Walk up and down the stairs with help	29	34.5	12	14.3	43	51.2
Q24	Start to occasionally follow commands	63	75.0	11	13.1	10	11.9
Q25	Begins to answer "Who" questions	6	7.1	10	11.9	68	81
Q26	Use his/her first word by what age	37	44.1	28	33.3	19	22.6
Q27	Name at least 3 pictures	44	52.4	4	4.8	36	42.9
Q28	Responds to prepositions such as 'on', 'under', 'front', 'behind', etc.	27	32.1	16	19.1	41	48.8
Q29	Respond with vocalization when called by name	59	70.2	17	20.2	8	9.5
Q30	Begin to recognize names of body parts	55	65.5	11	13.1	18	21.4
Q31	Begins to occasionally use 2–3-word phrases with nouns, some verbs, and some adjectives	40	47.6	14	16.7	30	35.7

Table 4.2 *(continued.)*

Item	Skill	Underestimation		Correct		Overestimation	
		n	%	n	%	n	%
Q32	Name objects when told their use	39	46.4	16	19.1	29	34.5
Q33	Begin to babble a series of sounds that sound like speech	50	59.5	19	22.6	15	17.9

Question No. 14*"Hold his/head steady":* Only 8% of the participants correctly estimated the emergence of the skill while 92% of the participants underestimated the emergence.

Question No. 15*"Jump off the floor with both feet":* Around 10% of the participants correctly estimated the emergence of the skill. About 39% of the participants underestimated the emergence while 51% overestimated it.

Question No. 16*"Uses his/her palm and fingers to fill and eat with spoon":* Around 12% of the participants correctly estimated the emergence of the skill. Majority of the participants (73%) underestimated the emergence while around 15% overestimated it.

Question No. 17*"Begins to roll over":* Around 33% of the participants correctly estimated the emergence of the skill. About46% of the participants underestimated the emergence while around 20% overestimated it.

Question No. 18*"Point to recognized objects":* Around 12% of the participants correctly estimated the emergence of the skill. Majority of the participants (64%) overestimated the emergence while around 23% underestimated it.

Question No. 19*"Start crawling":* Around 35% of the participants correctly estimated the emergence of the skill. About 42% of the participants underestimated the emergence while around 23% overestimated it.

Question No. 20*"Pull pants up with assistance":* Around 30% of the participants correctly estimated the emergence of the skill. About33% of the participants underestimated the emergence while around 37% overestimated it.

Question No. 21*"Sit independently":* Around 35% of the participants correctly estimated the emergence of the skill. 44% of the participants underestimated the emergence while around 20% overestimated it.

Question No. 22*"Throw a ball over head":* Around 21% of the participants correctly estimated the emergence of the skill. About33% of the participants underestimated the emergence while around 45% overestimated it.

Question No. 23*"Walk up and down the stairs with help":* Around 14% of the participants correctly estimated the emergence of the skill. About 34% of the particip

ants underestimated the emergence while majority of the participants (51%) overestimated it.

Question No. 24*"Start to occasionally follow commands":* Around 13% of the participants correctly estimated the emergence of the skill. Majority of the participants (75%) underestimated the emergence while around 12% overestimated it.

Question No. 25 *"Begins to answer 'who' questions":* About 12% of the participants correctly estimated the emergence of the skill. Around 7% of the participants underestimated the emergence while majority of the participants (81%) overestimated it.

Question No. 26 *"Use his/her first word by what age":* Around33% of the participants correctly estimated the emergence of the skill. About 37% of the participants underestimated the emergence while 23% of the participants overestimated it.

Question No. 27 *"Name at least three pictures":* Only 5% of the participants correctly estimated the emergence of the skill. Majority of the participants (52%) underestimated the emergence while around 43% of the participants overestimated it.

Question No. 28 *"Responds to prepositions such as 'on', 'under', 'front', 'behind', etc. ":* Around 19% of the participants correctly estimated the emergence of the skill. About 32% of the participants underestimated the emergence while around 49% of the participants overestimated it.

Question No. 29 *"Respond with vocalization when called by name":* Around20% of the participants correctly estimated the emergence of the skill. A majority of the participants (70%) underestimated the emergence while 10% of the participants overestimated it.

Question No. 30 *"Begin to recognize names of body parts":* Around13% of the participants correctly estimated the emergence of the skill. A majority of 66% of the participants underestimated the emergence while 21% of the participants overestimated it.

Question No. 31 *"Begins to occasionally use 2–3-word phrases with nouns, some verbs, and some adjectives":* Around 17% of the participants correctly estimated the emergence of the skill. About 48% of the participants underestimated the emergence while 36% of the participants overestimated it.

Question No. 32 *"Name objects when told their use":* Around 19% of the participants correctly estimated the emergence of the skill. About 46% of the participants underestimated the emergence while 35% of the participants overestimated it.

Question No. 33 *"Name objects when told their use":* 27% of the participants correctly estimated the emergence of the skill. Majority of the participants (60%) underestimated the emergence while 18% of the participants overestimated it.

4.1.2 Overall results on Perception of Developmental Milestones of Motor and Speech-Language Skills.

For section II, the participants were asked to state if the given statements were "Typical or Atypical", they could also state that they were "unable to decide" when uncertain. Table 4.4 below shows frequency distribution of responses for perception of developmental milestones of motor and speech-language skills.

Table 4.3

Frequency distribution of responses for perception of developmental milestones of motor and speech-language skills

		Number of Participant Responses					
		Typical		Unable to decide		Atypical	
		n	%	n	%	n	%
Q34	Only walking on toes at 1.5 years of age.	48	57.83	24	28.91	11	13.25
Q35	Repeating things that have been said to them always at 3 years of age.	49	59.03	22	26.50	12	14.45
Q36	Points at objects/persons for communication consistently at 11 months of age (i.e., points to car when they want car).	67	80.72	3	3.61	13	15.66
Q37	Hand flapping most of the time during play at 2.5 years of age.	45	54.21	27	32.53	11	13.25
Q38	Highly restricted choices of interest at 3 years of age (i.e., enjoys only spinning toys).	41	49.39	25	30.12	17	20.48
Q39	Slapping, hitting, or biting self and others at one year of age.	49	59.03	17	20.48	17	20.48
Q40	Engages in pretend play at 2.5 years of age (i.e., uses kitchen set/doctor set for play)	69	83.13	7	8.4	7	8.43
Q41	Mouths objects at 6 months of age	64	77.10	14	16.86	5	6.02

Note. n = 83 (as 1 participant's response was not recorded due to technical glitch for this section)

Question No. 34 *"Only walking on toes at 1.5 years of age":* Majority of the participants (58%) judged this statement as "typical" while 13% judged it as "atypical". About 29% of the participants chose the "unable to decide" option.

Question No. 35 *"Repeating things that have been said to them always at 3 years of age":* 59% of the participants judged this statement as "typical" while 14% judged it as "atypical". About 14% of the participants chose the "unable to decide" option.

Question No. 36 *"Points at objects/persons for communication consistently at 11 months of age (i.e., points to car when they want car):* Majority of the participants (80%) judged this statement as "typical" while 16% judged it as "atypical". About 4% of the participants chose the "unable to decide" option.

Question No. 37 *"Hand flapping most of the time during play at 2.5 years of age":* Around54% of the participants judged this statement as "typical" while 13% judged it as "atypical". About 33% of the participants chose the "unable to decide" option.

Question No. 38 *"Highly restricted choices of interest at 3 years of age (i.e., enjoys only spinning toys):* Around 49% of the participants judged this statement as "typical" while 20% judged it as "atypical". About 30% of the participants chose the "unable to decide" option.

Question No. 39 *"Slapping, hitting, or biting self and others at one year of age": Around* 59% of the participants judged this statement as "typical" while 20% judged it as "atypical". About 20% of the participants chose the "unable to decide" option.

Question No. 40 *"Engages in pretend play at 2.5 years of age (i.e., uses kitchen set/doctor set for play)":* Majority of the participants (83%) judged this statement as "typical" while 8% judged it as "atypical". About 8% of the participants chose the "unable to decide" option.

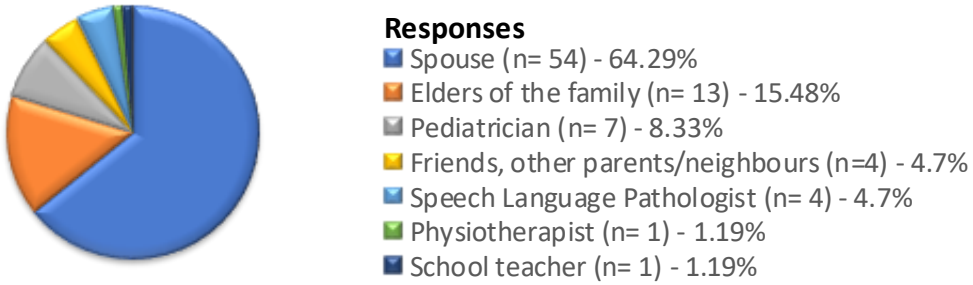
Question No. 41 *"Mouths objects at 6 months of age":* About 77% of the participants judged this statement as "typical" while 6% judged it as "atypical". About 17% of the participants chose the "unable to decide" option.

For section III, the participants were asked to answer based on their personal attitudes and beliefs about child development and developmental screening services. All the questions were closed ended and the findings for each question are given below.

Question No. 42 *"I am more likely to discuss a delay in my child/ children's motor or speech development with my _____ first"***:** Figure 4.1 shows a pie chart indicating the responses obtained for this question. From the figure, it can be observed that majority of the participants (64.29%) reported that they were most likely to discuss their child's developmental delay (motor/speech) with their spouses while elders of the family were the second most common choice (15.48%).

Figure 4.1

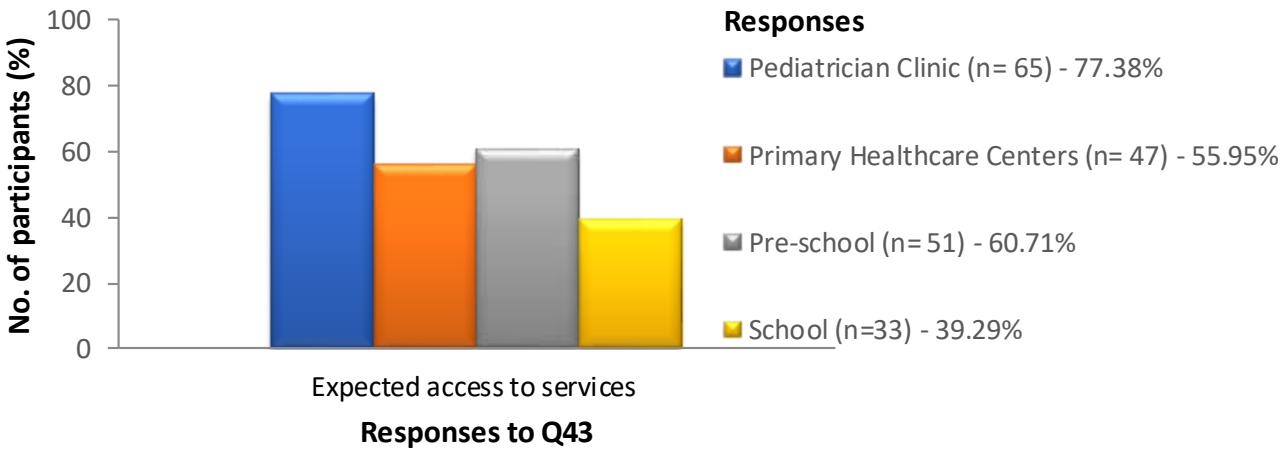
Participant reported partners for discussion of a child's motor or speech delay



Question No. 43 *"I feel that developmental screening services should be made available at":* Figure 4.2 shows a bar graph indicating the responses obtained for this question. From the figure, it can be seen that more than 50% of the participants agreed that they expected developmental screening to be available at the paediatrician clinics (77.38%), primary healthcare centres (55.95%), and pre-schools (60.79%).

Figure 4.2

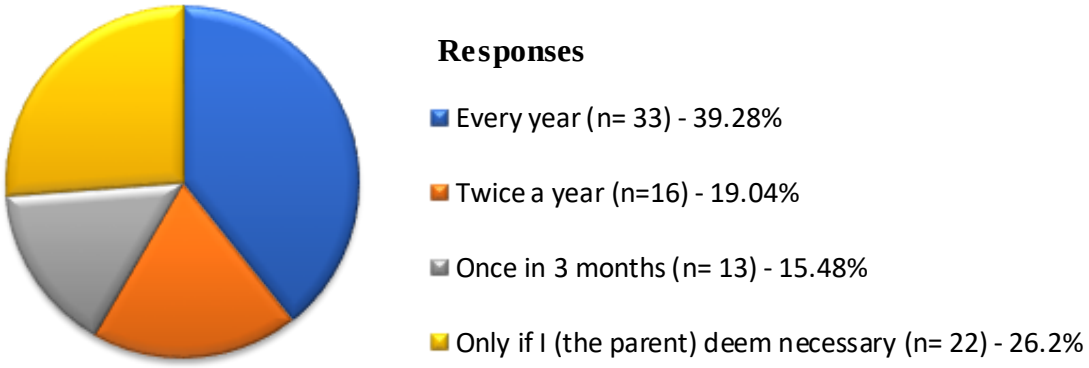
Participant reported expected service delivery availability for developmental screening of children



Question No. 44 *"I feel that my child/children should be screened":* Figure 4.3 shows a pie chart indicating the responses obtained for this question. From the figure it can be seen that 26.19% participants claimed that developmental screening must be done only when the parents themselves think it is required while 39.28% preferred a yearly developmental screening.

Figure 4.3

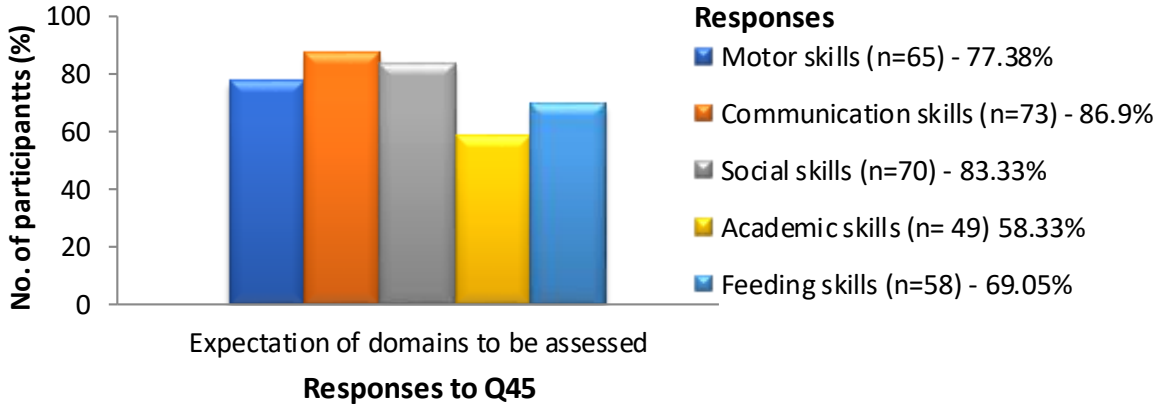
Participant reported preferred frequency of developmental screening of children



Question No. 45 *"I feel that the following concerns should be addressed when looking into the development of my child/children":* Figure 4.4 shows a bar graph indicating the responses obtained for this question. From this figure, it can be observed that concerns across all the domains mentioned was evident i.e., motor (77.38%), communication (86.9%), social (83.33%), academic (58.33%), and feeding skills. (69.05%). Communication skills followed by social skills were the two most expected developmental domains for assessment.

Figure 4.4

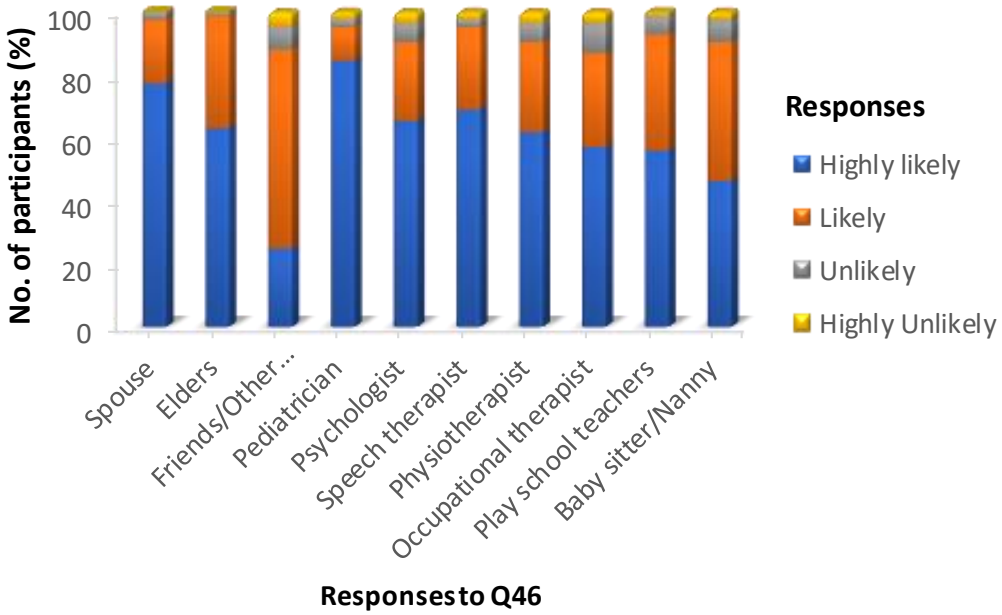
Participant reported expectations of developmental domains to be assessed



Question No. 46*"If the following individuals raise a concern regarding your child's development, how likely are you to follow it up":* Figure 4.5 shows a bar graph indicating the responses obtained for this question. Of all the non-professionals, the participants rated elders' concerns as likely (35.71%) and highly likely (63.1%) to result in a follow up while amongst the professionals, concerns from the paediatrician are most likely to lead to a follow-up. It is also important to note that opinions from a friend/other parents/ neighbours (unlikely – 7.14% and highly unlikely – 4.76%) and baby sitter/nanny (unlikely – 7.14% and highly unlikely – 2.38%) were least likely source of follow up.

Figure 4.5

Participant reported likeliness of follow-up of referrals from non-professionals and professionals



Question No. 47 to 51: Figure 4.6 depicts the responses obtained for these questions. The participants were asked to report their opinion of the given statements using a 5-point rating scale (Strongly disagree, Disagree, Undecided, Agree, Strongly agree).

Question No. *47 "If my child/children has/have a delay in developing any motor or speech skill, I would prefer to wait for at least 6 months before seeking professional help"*: Approximately 40% of the participants were in favour of waiting for a significant period before getting a professional consult regarding developmental delay while around 40% of the remaining participants were inclined towards an immediate consult. The remaining participants chose to rate 'undecided'.

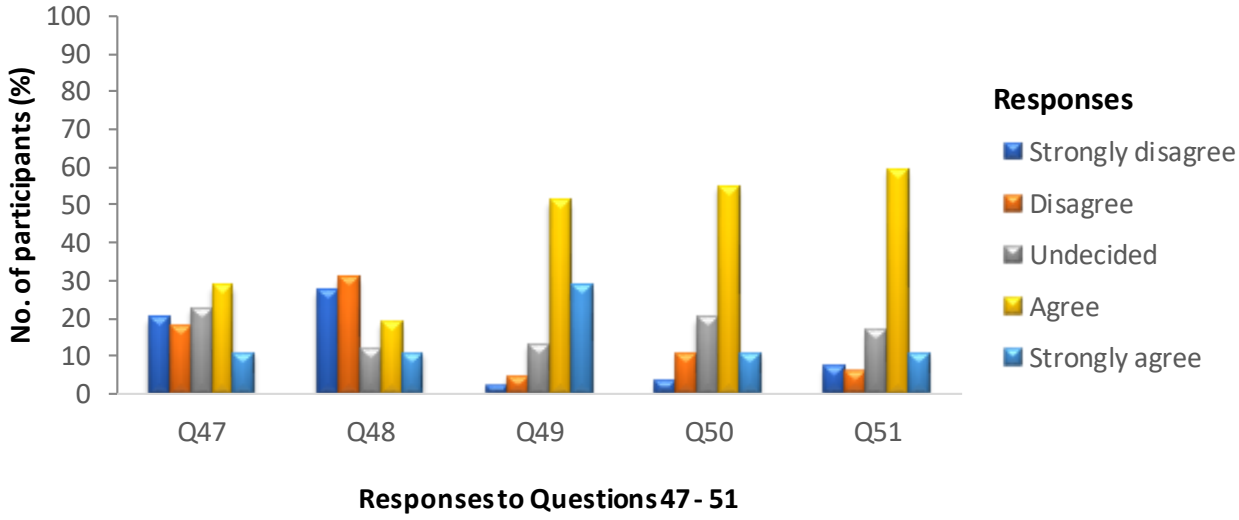
Question No. *48 "I feel like the society will look at my child/children differently if I decide to seek help from developmental professional like speech therapists, psychologists, physiotherapists, etc.":* Majority of the parents disagreed with the aforementioned statement reinforcing the notion of the social stigma associated with seeking therapeutic services.

Question No. 49 *"I feel my paediatrician should provide me with information on what to expect in terms of development in motor and speech areas at least till the age of 3 years":* Almost 80% of the participants sought information regarding child development from their paediatricians.

Question No. 50 *"I think there is a shortage of accessibility to resources on child rearing and child development for parents":* Most of the participants thought that there was a dearth in parenting and child development related resources.

Question No. 51 *"I would like to attend webinars/seminars on child development":* About 29.76% of the participants either disagreed or could not decide on whether they would attend webinars/seminars on child development.

Figure 4.6
Responses to belief-based items regarding child developmental services



4.2 Association between Parenting experience, Age and Gender of the participant and Awareness and Perception of Normal Developmental Milestones.

Results under this section report the comparison between groups and their association with items in the questionnaire. They reported under the following subsections:

Group wise comparison of awareness of developmental milestones of motor and speech-language skills amongst the participants.

4.2.1 Association between parenting experience and awareness and perception of developmental milestones of motor and speech-language skills.

4.2.2 Association between age of participant and awareness and perception of developmental milestones of motor and speech-language skills in children.

4.2.3 Association between gender of participant and awareness and perception awareness of developmental milestones of motor and speech-language skills in children.

4.2.1 Group wise Comparison of Awareness of Developmental Milestones of Motor and Speech-Language Skills amongst the participants

The responses were grouped based on parenting experience, age, and gender of each participant, and analysed using Mann Whitney U Test. There was no significant difference ($p>0.05$) between the responses for any of the grouping variables as shown in Table 4.3.

Table 4.4

Mann Whitney U test findings for comparison between groups

Grouping variable	|Z|	'p' value
Parenting experience	1.744	0.081
Age	0.512	0.609
Gender	1.338	0.181

4.2.2 Association between parenting experience and awareness and perception of developmental milestones of motor and speech-language skills.

To understand the association between parenting experience and awareness of developmental milestones of motor and speech skills up to the age of 3 years in children, Chi-square test of independence was carried out and Fisher's Exact Test was considered for significance levels. Table 4.5 shows the frequency distribution and chi-square test results for this section. (Refer to Appendix for questions)

Table 4.5

Chi-square test of independence for parenting experience and awareness of developmental milestones of motor and speech-language skills in children (Section I)

Item	Potential Parents				Parents				χ^2 value	'p' value
	Correct		Incorrect		Correct		Incorrect			
	n	%	n	%	n	%	n	%		
Q14	1	2.70	36	97.29	6	12.76	41	87.23	2.745[a]	.128[†]
Q15	2	5.40	35	94.59	6	12.76	41	87.23	1.302[a]	.456[†]
Q16	3	8.10	34	91.89	7	14.89	40	85.10	0.909[a]	.501[†]
Q17	21	56.75	16	43.24	7	14.89	30	63.82	6.183	.019*
Q18	5	13.51	32	86.48	5	10.63	42	89.36	0.163[a]	.743[†]
Q19	9	24.32	28	75.67	20	42.55	27	57.44	3.043	.107
Q20	12	32.43	25	67.56	13	27.65	34	72.34	0.635	.640
Q21	10	27.02	27	72.97	20	42.55	27	57.44	2.174	.172
Q22	9	24.32	28	75.67	9	19.14	38	80.85	0.329	.601
Q23	3	8.10	34	91.89	9	19.14	38	80.85	2.061	.213
Q24	3	8.10	34	91.89	8	17.02	39	82.97	1.445[a]	.332[†]
Q25	5	13.51	32	86.48	5	10.63	42	89.36	0.163[a]	.743[†]
Q26	9	24.32	28	75.67	19	40.42	28	59.57	2.415	.163
Q27	2	5.40	35	94.59	2	4.25	45	95.74	0.060[a]	1.000[†]
Q28	11	29.72	26	70.27	5	10.63	42	89.36	4.894	.048*
Q29	8	21.62	29	78.37	9	19.14	38	80.85	0.078	.791
Q30	2	5.40	35	94.59	9	19.14	38	80.85	3.436[a]	.102[†]
Q31	7	18.91	30	81.08	7	14.89	40	85.10	0.242	.770
Q32	9	24.32	28	75.67	7	14.89	40	85.10	1.194	.402
Q33	8	21.62	29	78.37	11	23.40	36	76.59	0.038	1.000

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation.* [†]'p' value inappropriate for determining significance level.

*p<0.05

From Table 4.5, the 'p' values suggest that there is no significant association between parenting experience and awareness of developmental milestones of motor and speech-language skills except for two items; Q17 – rolling over and Q28 – responding to prepositions. For Q17, the reason for statistical significance could be that almost 57% of the potential parent group estimated the emergence of the skill correctly while only 15% of the parent group was able to correctly estimate the emergence. For Q28, the reason for statistical significance could be that while only 10% of the parent group got the question correct, the potential parent group outperformed by almost 3 times.

When the association between parenting experience and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted, as documented in Table 4.6.

Table 4.6

Chi-square test of independence for parenting experience and perception of developmental milestones of motor and speech-language skills (Section II)

Item	Potential Parents						Parents						χ^2 value	'p' value
	Typical		Atypical		Unable to decide		Typical		Atypical		Unable to decide			
	n	%	n	%	n	%	n	%	n	%	n	%		
Q34	19	52.77	4	11.11	13	36.11	29	61.70	7	14.89	11	23.40	1.639[a]	.441^
Q35	22	61.11	5	13.88	9	25	27	57.44	7	14.89	13	27.65	0.115	.944
Q36	24	66.66	10	27.77	2	5.55	43	91.48	3	6.38	1	2.12	8.176[a]	.017^
Q37	21	58.33	3	8.33	12	33.33	24	51.06	8	17.02	15	31.91	1.372[a]	.504^
Q38	15	41.66	7	19.44	14	38.88	26	55.31	10	21.27	11	23.40	2.425	.297
Q39	21	58.33	7	19.44	8	22.22	28	59.57	10	21.27	9	19.14	0.133	.936
Q40	27	75	6	16.66	3	8.33	42	89.36	1	2.12	4	8.51	5.616[a]	.060^
Q41	25	69.44	4	11.11	7	19.44	39	82.97	1	2.12	7	14.89	3.466	.285^

Note. [a]Observed frequency less than expected frequency for ^χ^2 *computation.* [†]'p' value inappropriate for determining significance level. *p<0.05

When the association between parenting experience and parental attitudes and beliefs (Section III) was examined, the following was noted:

a) There was no significant association between the parenting experience and preferred partners for discussion of a child's motor or speech delay, as tabulated in Table 4.7.

Table 4.7

Chi-square test of independence for parenting experience and participant reported partners for discussion of a child's motor or speech delay

Item		Potential parents		Parents		χ^2 value	'p' value
		n	%	n	%		
Q42	Spouse	26	70.27	28	59.57		
	Elders of the family	6	16.21	7	14.89		
	Friends/ Other parents/ Neighbours	3	8.10	1	2.12		
	Paediatrician	2	5.40	5	10.63	7.350[a]	.290[†]
	Psychologist	0	0	0	0		
	Speech-language pathologist	0	0	4	8.51		
	Physiotherapist	0	0	0	0		
	Occupational therapist	0	0	1	2.12		
	School teachers	0	0	1	2.12		

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

b) There was no significant association between parenting experience and the expected service delivery availability for developmental screening in children, as shown in Table 4.8.

Table 4.8

Chi-square test of independence for parenting experience and expected service delivery availability for developmental screening of children

Item		Potential parents				Parents				χ^2 value	'p' value
		Yes		No		Yes		No			
		n	%	n	%	n	%	n	%		
Q43	Paediatric Clinic	7	18.91	30	81.08	12	25.53	35	74.46	0.517	.472
	Primary Health Care Centres	12	32.43	25	67.56	25	53.19	22	46.80	3.620	.077
	Pre-schools	14	37.83	23	62.16	19	40.42	28	59.57	0.058	.826
	Schools	20	54.05	17	45.94	31	65.95	16	34.04	1.230	.368

*p<0.05

Table 4.9

Chi-square test of independence for parenting experience and reported preference of frequency of developmental screening of children

Item	Every year				Twice a year				Once in 3 months				Only if I deem necessary				χ^2 value	'p' value
	Potential parents		Parents		Potential parents		Parents		Potential parents		Parents		Potential parents		Parents			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q44	13	15.47	20	20.80	8	9.52	8	9.52	9	10.71	4	4.76	7	8.34	15	17.85	5.200	.158

*p<0.05

c) There was no significant association between parenting experience and the preferred frequencies of developmental screening of children, as shown in Table 4.9.

d) There was no significant association between for parenting experience and expectations of developmental domains to be assessed, as shown in Table 4.10.

Table 4.10

Chi-square test of independence for parenting experience and expected developmental domains to be assessed

Item		Potential parents				Parents				χ^2 value	'p' value
		Yes		No		Yes		No			
		n	%	n	%	n	%	n	%		
Q45	Motor skills	26	70.27	11	29.72	39	82.97	8	17.02	1.910	.167
	Communication skills	31	83.78	6	16.21	42	89.36	5	10.63	.566[a]	.452^
	Social skills	31	83.78	6	16.21	39	82.97	8	17.021	.010	.922
	Academic skills	22	59.45	15	40.54	27	57.44	20	42.55	.035	.853
	Feeding skills	26	70.27	11	29.72	32	68.085	15	31.91	.046	.830

Note. [a]Observed frequency less than expected frequency for ^ *χ^2 computation*. †'p' value inappropriate for determining significance level.

*p<0.05

e) There was no significant association between parenting experience and likeliness of follow-up of referrals from non-professionals and professionals as shown in Table 4.11.

f) There was no significant association between parenting experience and parental attitudes regarding child developmental and developmental screening as tabulated in Table 4.12

Table 4.11

Chi-square test of independence for parenting experience and likelihood of follow up based on non-professional and professional opinion

Item		Highly likely				Likely				Unlikely				Highly unlikely				χ^2 value	'p' value
		Potential parents		Parents		Potential parents		Parents		Potential parents		Parents		Potential parents		Parents			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q46	Spouse	29	78.37	36	76.59	7	18.91	10	21.27	1	2.70	1	2.12	0	0	0	0	.094[a]	.954[†]
	Elders	24	64.86	29	61.70	12	32.43	18	38.29	1	2.70	0	0	0	0	0	0	1.503[a]	.472[†]
	Friends/Other parents/ Neighbours	12	32.43	9	19.14	21	56.75	32	68.08	3	8.10	3	6.38	1	2.70	3	6.38	2.557[a]	.465[†]
	Paediatrician	31	83.78	40	85.10	4	10.81	5	10.63	2	5.40	0	0	0	0	2	4.25	4.120[a]	.249[†]
	Psychologist	25	67.56	30	63.82	7	18.91	14	29.78	4	10.88	1	2.12	1	2.70	2	4.25	3.784[a]	.286[†]
	Speech therapist	28	75.67	30	63.82	8	21.62	14	29.78	1	2.70	1	2.12	0	0	2	4.25	2.551[a]	.466
	Physiotherapist	28	75.67	24	51.06	6	16.21	18	38.29	2	5.40	3	6.38	1	2.70	2	4.25	5.732[a]	.125[†]
	Occupational therapist	25	67.56	23	48.93	9	24.32	16	34.04	2	5.40	6	12.76	1	2.70	2	4.25	3.232[a]	.357[†]
	Play school teachers	26	70.27	21	44.68	10	27.02	21	44.68	1	2.70	4	8.51	0	0	1	2.12	6.132[a]	.105[†]
	Baby sitter/ Nanny	25	67.56	14	29.78	11	29.72	26	55.31	1	2.70	5	10.63	0	0	2	4.25	12.842[a]	.005[†]

Note. [a]Observed frequency less than expected frequency for ^χ^2 *computation.* [†]'p' value inappropriate for determining significance level.*p<0.05

Table 4.12

Chi-square test of independence for parenting experience and participant reported attitudes regarding child development and developmental screening

Item	Strongly Disagree				Disagree				Undecided				Agree				Strongly Agree				χ^2 value	'p' value
	Potential parents		Parents		Potential parents		Parents		Potential parents		Parents		Potential parents		Parents		Potential parents		Parents			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q47	5	13.51	12	25.53	8	21.62	7	14.89	9	24.32	10	21.27	10	27.02	14	29.78	5	10.63	4	8.51	2.626	.622
Q48	11	29.72	12	25.53	11	29.72	15	31.91	4	10.81	6	12.76	4	10.81	12	25.53	7	14.89	2	4.25	6.742[a]	.150[†]
Q49	1	2.70	1	2.12	1	2.70	3	6.38	3	8.10	8	17.02	18	48.64	25	53.19	14	29.78	10	21.27	3.944[a]	.414[†]
Q50	2	5.40	1	2.12	1	2.70	8	17.02	7	18.91	10	21.27	21	56.75	25	53.19	6	12.76	3	6.38	6.557[a]	.161[†]
Q51	2	5.40	4	8.51	2	5.40	3	6.38	3	8.10	11	23.40	25	67.56	25	53.19	5	10.63	4	8.51	4.421[a]	.352[†]

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

4.2.3 Association between age of participant and awareness and perception of developmental milestones of motor and speech-language skills.

From Section I, to understand the association between age of participant and awareness of developmental milestones of motor and speech skills up to the age of 3 years in children, Chi-square test of independence was carried out and Fisher's Exact Test was considered for significance levels. The 'p' values suggest that there is no significant association between age of participant and awareness of developmental milestones of motor and speech-language skills Table 4.13 shows the frequency distribution and chi-square test results for this section. (Refer to Appendix for questions)

Table 4.13

Chi-square test of independence of association for age of participant and awareness of normal developmental milestones (from Section I)

Item	20-35 years				36-50 years				χ^2 value	'p' value
	Correct		Incorrect		Correct		Incorrect			
	n	%	n	%	n	%	n	%		
Q14	3	4.83	58	93.54	3	13.63	19	86.36	1.097[a]	.371[†]
Q15	7	11.29	55	88.70	1	4.54	21	95.45	0.857[a]	.674[†]
Q16	5	8.06	57	91.93	5	22.72	17	77.27	3.329[a]	.118[†]
Q17	19	30.64	43	69.35	9	40.90	13	59.09	0.770	.435
Q18	7	11.29	55	88.70	3	13.63	19	86.36	0.085[a]	.717[†]
Q19	22	35.48	40	64.51	7	31.81	15	68.18	0.097	.801
Q20	18	29.03	44	70.96	7	31.81	15	68.18	0.060	.793
Q21	21	33.87	41	66.12	9	40.90	13	59.09	0.350	.609
Q22	12	19.35	50	80.64	6	27.27	16	72.72	0.605[a]	.546[†]
Q23	10	16.12	52	83.87	2	9.09	20	90.90	0.657[a]	.724[†]

Table 4.13 *(continued.)*

Item	20-35 years				36-50 years				χ^2 value	'p' value
	Correct		Incorrect		Correct		Incorrect			Correct
	n	%	n	%	n	%	n	%		
Q24	6	9.67	56	90.32	5	22.72	17	77.27	2.430[a]	.146[†]
Q25	7	11.29	55	88.70	3	13.63	19	86.36	0.085[a]	.717[†]
Q26	17	27.41	45	72.58	11	50.00	11	50.00	3.726	.068
Q27	3	4.83	59	95.16	1	4.54	21	95.45	03[a]	1.000[†]
Q28	13	20.96	49	79.03	3	13.63	19	86.36	0.566[a]	.543[†]
Q29	15	24.19	47	75.80	2	9.09	20	90.90	2.294[a]	.216[†]
Q30	7	11.29	55	88.70	4	18.18	18	81.81	0.678[a]	.467[†]
Q31	10	16.12	52	83.87	4	18.18	18	81.81	0.049[a]	1.000[†]
Q32	15	24.19	47	75.80	1	4.54	21	95.45	4.065 [a]	.048^
Q33	16	25.80	46	74.19	3	13.63	19	86.36	1.374	.374^

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

When the association between age of participant and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted, as documented in Table 4.14.

Table 4.14

Chi-square test of independence for age of the participant and perception of developmental milestones of motor and speech-language skills (Section II)

Item	20-35 years						36-50 years						χ^2 value	'p' value
	Typical		Atypical		Unable to decide		Typical		Atypical		Unable to decide			
	n	%	n	%	n	%	n	%	n	%	n	%		
Q34	33	54.09	7	11.47	21	34.42	15	68.18	4	18.18	3	13.63	3.520[a]	.172[†]
Q35	36	59.01	7	11.47	18	29.50	13	59.09	5	22.72	4	18.18	2.198[a]	.333[†]
Q36	47	77.04	11	18.03	3	4.91	20	90.90	2	9.09	0	0	2.292[a]	.318[†]
Q37	32	52.45	5	8.19	24	39.34	13	59.09	6	27.27	3	13.63	7.856[a]	.020[†]
Q38	32	52.45	10	16.39	19	31.14	9	40.90	7	31.81	6	27.27	2.395[a]	.302[†]
Q39	36	59.01	11	18.03	14	22.95	13	59.09	6	27.27	3	13.63	1.359[a]	.507[†]
Q40	49	80.32	5	8.19	7	11.47	20	90.90	2	9.09	0	0	2.758[a]	.252[†]
Q41	43	70.49	4	6.55	14	22.95	21	95.45	1	4.54	0	0	6.464[a]	.039[†]

Note. [a]Observed frequency less than expected frequency for ^χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

When the association between age of participant and Section III (parental attitudes and beliefs) was examined, the following was noted:

a) There was no significant association between age of participants and preferred partners for discussion of a child's motor or speech delay, as tabulated in Table 4.15.

Table 4.15

Chi-square test of independence for age of participant and their reported partners for discussion of a child's motor or speech delay

Item		20-35 years		36-50 years		χ^2 value	'p' value
		n	%	n	%		
Q42	Spouse	40	65.57	14	63.63		
	Elders of the family	10	16.39	3	13.63		
	Friends/ Other parents/ Neighbours	3	4.91	1	4.54		
	Paediatrician	3	4.91	4	18.18		
	Psychologist	0	0	0	0		
	Speech-language pathologist	4	6.55	1	4.54	5.668[a]	.461[†]
	Physiotherapist	1	1.63	0	0		
	Occupational therapist	0	0	0	0		
	School teachers	1	1.63	0	0		
	School teachers	1	1.63	0	0		
	School teachers	1	1.63	0	0		

Note. [a]Observed frequency less than expected frequency for ^χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

b) There was no significant association between age of participant and the expected service delivery availability for developmental screening in children, as shown in Table 4.16.

Table 4.16

Chi-square test of independence for age of participant and expected service delivery availability for developmental screening in children

Item		20-35 years				36-50 years				χ^2 value	'p' value
		Yes		No		Yes		No			
		n	%	n	%	n	%	n	%		
Q43	Paediatric Clinic	45	72.58	17	27.41	20	90.90	2	9.09	3.117[a]	.077
	Primary Health Care Centres	39	62.90	23	37.09	8	36.36	14	63.63	4.641[a]	.031*
	Pre-schools	39	62.90	23	37.09	12	54.54	10	45.45ss	.476[a]	.490
	Schools	27	43.54	35	56.45	6	27.27	16	72.72	1.803[a]	.179

Note. [a]Observed frequency less than expected frequency for ^χ^2*computation*. †'p' value inappropriate for determining significance level.

*p<0.05

c) There was no significant association between age of participant and the preferred frequencies of developmental screening of children, as shown in Table 4.17.

Table 4.17

Chi-square test of independence for age of participant and reported preference of frequency of developmental screening

Item	Every year				Twice a year				Once in 3 months				Only if I deemnecessary				χ^2value	'p' value
	20-35 years		35-50 years		20-35 years		35-50 years		20-35 years		35-50 years		20-35 years		35-50 years			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q44	13	15.47	20	20.80	8	9.52	8	9.52	9	10.71	4	4.76	7	8.34	15	17.85	1.804[a]	.614†

Note. [a]Observed frequency less than expected frequency for ^χ^2*computation*. †'p' value inappropriate for determining significance level.

*p<0.05

d) There was no significant association between age of participant and expectations of developmental domains to be assessed, as shown in Table 4.18.

Table 4.18

Chi-square test of independence for age of participant and expected domains of developmental screening in children

Item		Potential parents				Parents				χ^2	'p'
		Yes		No		Yes		No		value	value
		n	%	n	%	n	%	n	%		
Q45	Motor skills	49	79.03	13	20.96	16	72.72	6	27.27	.369[a]	.544[†]
	Communication skills	55	88.70	7	11.29	18	81.81	4	18.18	.678[a]	.410[†]
	Social skills	51	82.25	11	17.74	19	86.36	3	13.63	.197[a]	.657[†]
	Academic skills	37	59.67	25	40.32	12	54.54	10	45.45	.176	.675
	Feeding skills	45	72.58	17	27.41	13	59.09	9	40.90	1.383	.240

Note. [a]Observed frequency less than expected frequency for ^χ^2*computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

e) There was no significant association between age of participant and likeliness of follow-up of referrals from non-professionals and professionals as shown in Table 4.19.

f) There was no significant association between age of participant and parental attitudes regarding child developmental and developmental screening as tabulated in Table 4.20.

Table 4.19

Chi-square test of independence for age of participant and likelihood of follow up based on non-professional and professional opinion

Item		Highly likely				Likely				Unlikely				Highly unlikely				χ^2 value	'p' value
	Age	20-35 years		36-50 years		20-35 years		36-50 years		20-35 years		36-50 years		20-35 years		36-50 years			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q46	Spouse	48	77.42	17	77.27	13	20.97	4.00	18.18	1.00	1.61	1.00	4.55	0	0	0	0	.649[a]	.723[†]
	Elders	37	59.68	16	72.73	24	38.71	6	27.27	1	1.61	0	0	0	0	0	0	1.388[a]	.500[†]
	Friends/Other parents/ Neighbours	16	25.81	5	22.73	37	59.68	16	72.73	6	9.68	0	0	3	4.84	1	4.55	2.632[a]	.452[†]
	Pediatrician	50	80.65	21	95.45	8	12.90	1	4.55	2	3.23	0	0	2	3.23	0	0	2.899[a]	.407[†]
	Psychologist	40	64.52	15	68.18	15	24.19	6	27.27	4	6.45	1	4.55	3	4.84	0	0	1.259[a]	.739[†]
	Speech therapist	41	66.13	17	77.27	18	29.03	4	18.18	1	1.61	1	4.55	2	3.23	0	0	2.318[a]	.509[†]
	Physiotherapist	40	64.52	12	54.55	16	25.81	8	36.36	3	4.84	2	9.09	3	4.84	0	0	2.452[a]	.484[†]
	Occupational therapist	36	58.06	12	54.55	18	29.03	7	31.82	5	8.06	3	13.64	3	4.84	0	0	1.671[a]	.643[†]
	Play school teachers	37	59.68	10	45.45	21	33.87	10	45.45	3	4.84	2	9.09	1	1.61	0	0	2.026[a]	.567
	Babysitter/nanny	32	51.61	7	31.82	25	40.32	12	54.55	3	4.84	3	13.64	2	3.23	0	0	4.585[a]	.205[†]

Note. [a]Observed frequency less than expected frequency for ^χ^2*computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

Table 4.20

Chi-square test of independence for age of participant and participant reported attitudes regarding child development and developmental screening

Item	Strongly Disagree				Disagree				Undecided				Agree				Strongly Agree				χ^2 value	'p' value
	20-35 years		36-50 years		20-35 years		36-50 years		20-35 years		36-50 years		20-35 years		36-50 years		20-35 years		36-50 years			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q47	11	17.74	6	27.27	9	14.52	6	27.27	18	14.52	1	4.55	17	27.42	7	31.82	11	17.74	6	27.27	6.696[a]	.153[†]
Q48	17	27.42	6	27.27	22	35.48	4	18.18	8	35.48	2	9.09	7	11.29	9	40.91	17	27.42	6	27.27	10.306[a]	.036[†]
Q49	2	3.23	0	0	3	4.84	1	4.55	10	4.84	1	4.55	31	50.00	12	54.55	2	3.23	0	0	3.075[a]	.545[†]
Q50	3	4.84	0	0	5	8.06	4	18.18	16	8.06	1	4.55	30	48.39	16	72.73	3	4.84	0	0	9.058[a]	.060[†]
Q51	6	9.68	0	0	3	4.84	2	9.09	11	4.84	3	13.64	35	56.45	15	68.18	6	9.68	0	0	3.235[a]	.519[†]

Note. [a]Observed frequency less than expected frequency for χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

4.2.4 Association between gender of participant and awareness and perception of developmental milestones of motor and speech-language skills.

To understand the association between gender of participant and awareness of developmental milestones of motor and speech skills up to the age of 3 years in children, Chi-square test of independence was carried out and Fisher's Exact Test was considered for significance levels. The 'p' values suggest that there is no significant association between gender of participant and awareness of developmental milestones of motor and speech-language skills except for Q21 – "At what age do children begin to sit by themselves?". For this particular question, the reason for statistical significance could be due to only 17% of the male participants getting the correct answer while over 50% of the female participants got this question correct. Table 4.21 shows the frequency distribution and chi-square test results for this section. (Refer to Appendix for questions)

Table 4.21

Chi-square test of independence of association for gender of participant and awareness of normal developmental milestones (from Section I)

Item	Male				Female				χ^2 value	'p' value
	Correct		Incorrect		Correct		Incorrect			
	n	%	n	%	n	%	n	%		
Q14	3	10.34	26	89.65	4	7.27	51	92.72	.235[a]	.688[†]
Q15	3	10.34	26	89.65	5	9.09	50	90.90	.035[a]	1.000[†]
Q16	2	6.89	27	93.10	8	14.54	47	85.45	1.059[a]	.482[†]
Q17	10	34.48	19	65.51	18	32.72	37	67.27	.026	1.000
Q18	5	17.24	24	82.75	5	9.09	50	90.90	1.203[a]	.303[†]
Q19	9	31.03	20	68.96	20	36.36	35	63.636	.239	.810
Q20	5	17.24	24	82.75	20	36.36	35	63.63	3.321	.083

Table 4.21*(continued.)*

Item	Male				Female				χ^2 value	'p' value
	Correct		Incorrect		Correct		Incorrect			
	n	%	n	%	n	%	n	%		
Q21	5	17.24	24	82.75	30	54.54	25	45.45	6.583	.016*
Q22	3	10.34	26	89.65	15	27.27	40	72.72	3.232	.096
Q23	4	13.79	25	86.20	8	14.54	47	85.45	.009[a]	1.000[†]
Q24	4	13.79	25	86.20	7	12.72	48	87.27	.019[a]	1.000[†]
Q25	6	20.68	23	79.31	4	7.27	51	92.72	3.259[a]	.087[†]
Q26	8	27.58	21	72.41	20	36.36	35	63.63	.658	.473
Q27	2	6.89	27	93.10	2	3.63	53	96.36	.445[a]	.606[†]
Q28	6	20.68	23	79.31	10	18.18	45	81.81	.077	.778
Q29	5	17.24	24	82.75	12	21.81	43	78.18	.246	.778
Q30	2	6.89	27	93.10	9	16.36	46	83.63	1.495[a]	.316[†]
Q31	7	24.13	22	75.86	7	12.72	48	87.27	1.780[a]	.223
Q32	3	10.34	26	89.65	13	23.63	42	76.36	2.176	.241
Q33	8	27.58	21	72.41	11	20	44	80	.624	.428

Note. [a]Observed frequency less than expected frequency for χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

When the association between gender of participant and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted except for Q38 – "Highly restricted choices of interest at 3 years of age (i.e., enjoys only spinning toys)", as documented in Table 4.22. For this particular question, the reason for statistical significance could be due to significant differences noted in response distribution between males and females for the options 'Typical' and "Unable to decide".

65% of the male participants rated the statement as typical while only 40% of their counterparts did so. In addition to this, approximately 40% of the females chose "Unable to decide" and only a little under 15% of the male participants chose the same option.

Table 4.22

Chi-square test of independence for gender of the participant and perception of normal developmental milestones (from Section II)

Item	Male						Female						χ^2 value	'p' value
	Typical		Atypical		Unable to decide		Typical		Atypical		Unable to decide			
	n	%	n	%	n	%	n	%	n	%	n	%		
Q34	20	68.96	2	6.89	7	24.13	28	51.85	9	16.66	17	31.48	2.666[a]	.264[†]
Q35	21	72.41	3	10.34	5	17.24	28	51.85	9	16.66	17	31.48	3.316[a]	.191[†]
Q36	23	79.31	5	17.24	1	3.44	44	81.48	8	14.81	2	3.70	.085[a]	.958[†]
Q37	19	65.51	4	13.79	6	20.68	26	48.14	7	12.96	21	38.88	2.981[a]	.225[†]
Q38	19	65.51	6	20.68	4	13.79	22	40.74	11	20.37	21	38.88	6.291	.043*
Q39	18	62.06	7	24.13	4	13.79	31	57.40	10	18.51	13	24.07	1.334	.513
Q40	24	82.75	3	10.34	2	6.89	45	83.33	4	7.40	5	9.25	.319[a]	.853[†]
Q41	20	68.96	2	6.89	7	24.13	28	51.85	9	16.66	17	31.48	.069[a]	.966[†]

Note. [a]Observed frequency less than expected frequency for χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

When the association between gender of participant and parental attitudes and beliefs (Section III) was examined, the following was noted:

a) There was no significant association between age of participants and preferred partners for discussion of a child's motor or speech delay, as tabulated in Table 4.23.

Table 4.23

Chi-square test of independence for gender of participant and their reported partners for discussion of a child's motor or speech delay

Item		Male		Female		χ^2 value	'p' value
		n	%	n	%		
Q42	Spouse	18	62.06	36	65.45		
	Elders of the family	7	24.13	6	10.90		
	Friends/ Other parents/ Neighbours	0	0	4	7.27		
	Paediatrician	3	10.34	4	7.27	9.038[a]	.171[†]
	Psychologist	0	0	0	0		
	Speech-language pathologist	0	0	4	7.27		
	Physiotherapist	0	0	0	0		
	Occupational therapist	0	0	1	1.81		
	School teachers	1	3.44	0	0		

Note. [a]Observed frequency less than expected frequency for $\wedge\chi^2$ *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

b) There was no significant association between gender of participant and expected service delivery availability for developmental screening in children, as shown in Table 4.24.

Table 4.24

Chi-square test of independence for gender of participant and expected access to developmental screening in children

Item		Male				Female				χ^2 value	'p' value
		Yes		No		Yes		No			
		n	%	n	%	n	%	n	%		
Q43	Paediatric Clinic	21	72.41	8	27.58	44	80	11	20	.624	.429
	Primary Health Care Centres	17	58.62	12	41.37	30	54.54	25	45.45	.128	.721
	Pre-schools	19	65.51	10	34.48	32	58.18	23	41.81	.428	.513
	Schools	13	44.82	16	55.17	20	36.36	51	92.72	.570	.450

*p<0.05

c) There was no significant association between gender of participant and the preferred frequencies of developmental screening of children, as shown in Table 4.25.

Table 4.25

Chi-square test of independence for gender of participant and reported preference of frequency of developmental screening

Item	Every year				Twice a year				Once in 3 months				Only if I deem necessary				χ^2 value	'p' value
	Male		Female		Male		Female		Male		Female		Male		Female			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q44	11	37.93	22	40	5	17.24	11	20	5	17.24	8	14.51	8	17.24	14	25.45	.219[a]	.975[†]

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation.* [†]'p' value inappropriate for determining significance level.

*p<0.05

d) There was no significant association between gender of participant and expectations of developmental domains to be assessed, as shown in Table 4.26.

Table 4.26

Chi-square test of independence for gender and expected domains of developmental screening

Item		Male				Female				χ^2 value	'p' value
		Yes		No		Yes		No			
		n	%	n	%	n	%	n	%		
Q45	Motor skills	20	68.96	9	31.03	45	81.81	10	18.18	1.792[a]	.272
	Communication skills	23	79.31	6	20.68	50	90.90	5	9.09	2.245[a]	.134^
	Social skills	25	86.20	4	13.79	45	81.81	10	18.18	.263[a]	.762^
	Academic skills	17	58.62	13	44.82	32	58.18	23	41.81	.002	1.000
	Feeding skills	20	68.96	9	31.03	38	69.09	17	30.90	.000	1.000

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation*. [†]'p' value inappropriate for determining significance level.

*p<0.05

e) There was no significant association between gender of participant and likeliness of follow-up of referrals from non-professionals and professionals as shown in Table 4.27.

f) There was no significant association between gender of participant and parental attitudes regarding child developmental and developmental screening as tabulated in Table 4.28.

Table 4.27

Chi-square test of independence for gender of participant and likelihood of follow up based on non-professional and professional opinion

Item		Highly likely				Likely				Unlikely				Highly unlikely				χ^2 value	'p' value
	Gender	Male		Female		Male		Female		Male		Female		Male		Female			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q46	Spouse	23	79.31	42	76.36	5	17.24	12	21.82	1	3.45	1	1.82	0	0	0	0	.430[a]	.807^
	Elders	19	65.52	34	61.82	10	34.48	20	36.36	0	0	1	1.82	0	0	0	0	.587[a]	.745^
	Friends/Other parents/ Neighbours	4	13.79	17	30.91	19	65.52	34	61.82	3	10.34	3	5.45	3	10.34	1	1.82	5.801[a]	.122^
	Pediatrician	22	75.86	49	89.09	4	13.79	5	9.09	1	3.45	1	1.82	2	6.90	0	0	4.790[a]	.188^
	Psychologist	17	58.62	38	69.09	7	24.14	14	25.45	2	6.90	3	5.45	3	10.34	0	0	6.087[a]	.107^
	Speech therapist	19	65.52	39	70.91	8	27.59	14	25.45	0	0	2	3.64	2	6.90	0	0	4.961[a]	.175
	Physiotherapist	23	79.31	42	76.36	5	17.24	12	21.82	1	3.45	1	1.82	0	0	0	0	6.575[a]	.087^
	Occupational therapist	19	65.52	34	61.82	10	34.48	20	36.36	0	0	1	1.82	0	0	0	0	7.228[a]	.065^
	Play school teachers	4	13.79	17	30.91	19	65.52	34	61.82	3	10.34	3	5.45	3	10.34	1	1.82	4.431[a]	.219^
	Baby sitter/ Nanny	22	75.86	49	89.09	4	13.79	5	9.09	1	3.45	1	1.82	2	6.90	0	0	4.046[a]	.257^

Note. [a]Observed frequency less than expected frequency for ^ χ^2 *computation.* [†]'p' value inappropriate for determining significance level.

*p<0.05

Table 4.28

Chi-square test of independence for gender of the participants and participant reported attitudes regarding child developmental and developmental screening

Item	Strongly Disagree				Disagree				Undecided				Agree				Strongly Agree				χ^2 value	'p' value
	Male		Female		Male		Female		Male		Female		Male		Female		Male		Female			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Q47	2	6.90	15	27.27	10	34.48	5	9.09	8	27.59	11	20.00	4	13.79	20	36.36	2	6.90	7	12.73	11.524[a]	.021[†]
Q48	10	34.48	13	23.64	9	31.03	17	30.91	2	6.90	8	14.55	6	20.69	10	18.18	2	6.90	7	12.73	2.414[a]	.660[†]
Q49	2	6.90	0	0	1	3.45	3	5.45	6	20.69	5	9.09	14	48.28	29	52.73	6	20.69	18	32.73	6.941[a]	.139[†]
Q50	2	6.90	1	1.82	4	13.79	5	9.09	6	20.69	11	20.00	13	44.83	33	60.00	4	13.79	5	9.09	2.958[a]	.565[†]
Q51	3	10.34	3	5.45	5	17.24	0	0	4	13.79	10	18.18	15	51.72	35	63.64	2	6.90	7	12.73	11.393[a]	.022[†]

Note. [a]Observed frequency less than expected frequency for ^χ^2 *computation.* [†]'p' value inappropriate for determining significance level.

*p<0.05

CHAPTER 5

Discussion

The findings of the current study are explained under the following sections:

5.1 Overall awareness and perception of normal developmental milestones amongst the participants

5.2 Association between parenting experience, age and gender of the participant and awareness and perception of normal developmental milestones.

5.1 Overall Awareness and Perception of Normal Developmental Milestones amongst the participants

Results under this section are discussed based on the sections of the questionnaire; Awareness (Section I) and Perception (Sections II and III) under the following subsections:

5.1.1 Overall findings on awareness of developmental milestones of motor and speech-language skills up to 3 years of age in children amongst the participants.

5.1.2 Overall findings on perception of developmental milestones of motor and speech-language skills.

5.1.1 Overall findings on the Awareness of Developmental Milestones of Motor and Speech-language Skills up to 3 years of age in Children amongst the participants.

To assess the participants' awareness about normal developmental milestones (i.e., motor and speech-language domains) between the ages 0-36 months, the respondents had to check the most appropriate age of emergence corresponding to each skill from the set of options presented in Section I (Awareness).

As evident in Table 4.2 only 19.22% (± 9.51) of the participants were able to correctly estimate the developmental ages in Section I of this study. The average number of participants that got the developmental age right for motor and speech-language milestones was 17.7 (±9.41) and 14.6 (±6.39), respectively in the current study. It is noteworthy that between the two domains being assessed physical milestones had greater correct scores than those of speech-language domain.

Relatively lower correct scores for knowledge of both motor and speech-language milestones have been reported earlier in the literature (Scarzello et al., 2016; September et al., 2015).Out of the majority of the participants that answered incorrectly, 48.09% (±19.81) underestimated the ages while 33.45% (±20.45) seemingly overestimated the age at which the developmental skills appeared. It has been reported that overestimation of milestones is a concerning finding as given research on child abuse reveals that abusive parents tend to exaggerate their children's skills (Ertem et al., 2007; Azar & Rohrbeck, 1986) and may become frustrated and worried about future retardation of the child (Tamis-LeMonda et al., 2002) while underestimation has been documented to reflect lack of access to sources of information on child development (Karuppannan, et al 2020) and different parental expectations; underestimation might lead to resultant lack of stimulation (Hunt & Paraskeyopoulos (1980) and postponement in seeking medical help, which could be critical for early intervention and impairment prevention(Tamis-LeMonda et al., 2002).

According to an extensive study conducted by Ertem et al. (2007) using their inventory titled “The Caregiver Knowledge of Child Development Inventory” (CKCDI) to assess knowledge of developmental milestones in Turkish mothers. More than half the mothers believed almost all developmental skills and activities occurred later than the normative ages. These mothers were unaware that significant development i.e., vision,

vocalisation, social smiling and overall brain growth, begins in the first few months of life and the child needs constant verbal stimulation from a rather young age. This lead to an assumption that the Turkish mothers were deficient of knowledge of developmental milestones and further research is needed to design culture specific parent education programs. In a country like India, which is also culturally and socioeconomically diverse, such research is required to plan appropriate parent education programs.

5.1.2 Overall findings on the Perception of Developmental Milestones of Motor and Speech-Language Skills.

The results on perception of developmental milestones of motor and speech-language skills Table 4.2 indicated 20.93% (±10.61) of the participants reported that they were unable to decide whether the given behaviours are "Typical vs. Atypical". Perceived incompetence in identifying early indicators of deviant/ delayed development is evident. Literature reports need for construction of screening tools that can be administered by parents (Schonwald, et al., 2009), so that the developmental deviations and delay do not go unnoticed especially when observation based concerns are not raised due to lack of awareness. Use of screening tools did not replace patient-provider dialogue but resulted in better communication exchange. The wide range of subjects covered in parents' remarks can serve as a springboard for discussion throughout the well child visits, allowing healthcare professionals and parents to make better use of well child visits time and strengthening parent-provider relationships (Cox et al., 2010).

Next, the participants were to answer a set of closed ended test items enquiring about their preferences and decision making abilities when child developmental services are involved. The following section includes findings obtained for questions numbered from 42 to 51 as per the Appendix

Question No. 42 *"I am more likely to discuss a delay in my child/ children's motor or speech development with my _____ first":* Spouses and elders of the family were the most highly ranked confidants before seeking professional advice. This decision may be influenced by personal and cultural factors; however, seeking help from grandmothers of the child is common across many cultures (Rikhy et al., 2010). Paediatricians were the first amongst professionals that parents would speak with about their child's developmental issues; other professionals were almost never considered for a primary consult.

Question No. 43 *"I feel that developmental screening services should be made available at"*: The participants of the study agreed that they expected developmental screening to be available at the paediatrician clinics (77.38%), primary healthcare centers (55.95%), and pre-schools (60. 79%). The expectation of services at the community centres suggests that the parents were seeking easy access to developmental screening of children.

There are numerous obstacles to universal developmental surveillance and screening in India. Parents are unaware of the services' existence and importance. Acute illnesses, that do not lend themselves to screening, are prioritised in seeking medical attention. Well-child visits are mostly for immunisation, with a few brief questions about development included for good measure. Because visits for acute illnesses are not appropriate opportunities for screening, combining screening with pre-existing scheduled appointments such as immunisation and vitamin A prophylaxis might be a reasonable option. A system must also be established to document outcomes, keep records, and update them at a later period (Mukherjee et al., 2014).

Question No. 44 *"I feel that my child/children should be screened":* Even though 22 of the participants of this study reported that they seek consultation only if they thought it was

required, the others were willing to follow a routine screening evaluation from time to time. The American Academic of Paediatrics in 2006 recommended standardised developmental screening during paediatrician visits at 9-, 18-, and 30 months of age and autism specific screening at 18- and 24 months. By adopting developmental screening and surveillance, one can ensure a systematic approach to children with developmental concerns and help improve their future (Mukherjee et al., 2014). This makes it is easier for the parents to keep up with maintaining a developmental screening schedule and for early detection of developmental delays (Committee on Children with Disabilities, 2001).

Question No. 45 *"I feel that the following concerns should be addressed when looking into the development of my child/children":* Parents indicated desire for assessment across all the domains i.e., motor, communication, social, academic and feeding skills. Communication skills followed by social skills were the two most expected developmental domains for assessment in this study.

The findings indicated that, for better parent-physician communication, parental concerns regarding development should be considered as a valuable adjunct to developmental assessment. Chung et al (2010) grouped major parental concerns into six categories: cognitive, language/speech, motor, behavioural/psychological, global delays, and nonspecific delays. The strongest predictors of developmental delays in children were parental concerns about language and motor development. For children at risk of developmental delay, parental concerns aided early detection of developmental difficulties. When particular concerns are expressed by the parents, specific developmental disorders could be suspected. There is also a likelihood of developmental abnormalities co-occurring (global delays), recognizing the co-occurrence of developmental problems is critical for

proper treatment of children with developmental delays; as a result, when a concern is identified in one area, the other domains must be checked for delays/deviances as well.

Question No. 46 *"If the following individuals raise a concern regarding your child's development, how likely are you to follow it up":* The participants of the study were given a list of non-professionals and professionals that they had to rate for likelihood of a follow-up. Amongst the non-professionals, elders' opinion regarding child development was most influential. Recent findings of Aldayel et al. (2020a, 2020b) are in accordance with the current study where they reported that 63% of their participants also relied on elders/relatives of the family as sources of information regarding child development.

Overall, all the non-professional and professional sources of concerns were rated highly likely to prompt a follow-up consultation. In a study done by Nelson et al. (2011), parents said that they would go to the child's teacher and healthcare provider for information about developmental concerns. As the child grew, they began to seek more help from the teachers and less from health professionals. Books, parent groups, family members, friends, neighbours, the school administration and internet were among the other sources of knowledge mentioned by parents.

Of the professionals enlisted paediatricians and speech therapists were rated highly for resulting in a follow-up for concerns they may address to the parents regarding their child's development. Opinions from a friend, other parents, neighbours and babysitter/nanny were the least likely source of follow up.

Section III: Question No. 47 to 51: Section III included questions Q47 to Q51 which are discussed in the following sections, the participants were to answer a set of closed ended test items enquiring about their preferences and decision making abilities when child

developmental services are involved. For the purpose of these test items, participants were asked to report their opinion of the given statements using a 5-point rating scale (Strongly disagree, Disagree, Undecided, Agree, Strongly agree).

Question No. 47 *"If my child/children has/have a delay in developing any motor or speech skill, I would prefer to wait for at least 6 months before seeking professional help":* Around 60% of the participants of the study reported that they were either likely to wait (40%) or were uncertain whether to wait or not (20%) for a professional consult once a developmental issue is identified. This could be due to multiple reasons such as lack of knowledge about specialized health/ rehabilitation professionals, cultural factors influencing developmental expectations from the child, poor access to necessary health services, financial constraints, social stigma about having to visit a "therapist", etc.

Question No. 48 *"I feel like the society will look at my child/children differently if I decide to seek help from developmental professional like speech therapists, psychologists, physiotherapists, etc.":* This question was raised in an attempt to learn how the participants in this study viewed society's preconceived attitudes on getting professional help for child development. Around 58.33% of the participants refuted any social stigma related to consulting a childhood developmental professional. The rest of the participants were unsure or agreed to there being a societal stigma regarding childhood rehabilitation.

Question No. 49 *"I feel my paediatrician should provide me with information on what to expect in terms of development in motor and speech areas at least till the age of 3 years":* Majority of the participants sought information regarding child development from their paediatricians. Thus, when parents seek help from professionals, culturally appropriate and relevant programs like the LTSAE (CDC, 2004) will be extremely beneficial in India.

Question No. 50 *"I think there is a shortage of accessibility to resources on child rearing and child development for parents"*: Despite access to freely available digital resources on the internet 65% of the participants felt that there was a lack of accessibility to resources on child rearing and child development for parents. This is suggestive that parents probably will respond better to one-to-one interactive information exchange with a reliable source of information such as paediatricians, educators, and rehabilitation professionals. Future research is required in understanding what the parent or potential parents considered effective resources.

Question No. *51 "I would like to attend webinars/seminars on child development":* While most participants were keen on attending webinars/seminars on child development. 29.76% of the participants either disagreed or could not decide on whether they would attend webinars/seminars on child development.

Parents have indicated that they would like to get more information on the children's growth, learning, and behaviour from child health providers than they now receive (Nelson, 2011). Similar interest was expressed in learning more about child development in this study. There are barriers that affect the effectiveness and reach of the parent education programs. There could also be a gap between reported interest and reality of the matter. Parenting classes were considered to be only for parents with children who have challenging behaviours by many adults as parenting was regarded intuitive rather than a learned behaviour (Trevor, 2013). The previous statement can be refuted by claiming that the supposedly intuitive parenting is in fact, how the adults themselves were parented and not necessarily the best practice. More research is required to formulate programs that are relatively easy to execute and guarantee a significant turnover of parents.

The findings on overall awareness and perception of normal developmental milestones amongst the participants indicated poor awareness and perception among the participants. This section estimated the overall awareness and perception among the participants met the first objective of the study which was to investigate the overall awareness and perception of normal developmental milestones amongst the participants.

5.2 Association between parenting experience, age and gender of the participant and awareness and perception of normal developmental milestones.

The findings of the study on association between parenting experience, age and gender of the participant and awareness and perception of normal developmental milestones are discussed in the following section.

5.2.1 Group wise comparison of awareness of developmental milestones of motor and speech-language skills amongst the participants.

5.2.2 Association between parenting experience and awareness and perception of developmental milestones of motor and speech-language skills.

5.2.3 Association between age of participant and awareness and perception of developmental milestones of motor and speech-language skills in children.

5.2.4 Association between gender of participant and awareness and perception awareness of developmental milestones of motor and speech-language skills in children.

5.2.1 Group wise comparison of awareness of developmental milestones of motor and speech-language skills amongst the participants.

The results of the study on group wise comparison of awareness of developmental milestones of motor and speech-language skills amongst the participants using Mann

Whitney U test, revealed that there was no significant difference ($p>0.05$) between the responses for any of the grouping variables (See Table 4.4). The responses in this study did not vary based on parenting experience, age or gender ($p >0.05$) of the participants; this was consistent with Karuppannan et al. (2020). Age and number of children did not appear to influence their responses in this study. However, in previous studies, access to information, mothers' level of education and parental age has been known to influence their awareness of developmental milestones (Reich, 2005; Pickett et al., 2003).

5.2.2 Association between parenting experience and awareness and perception of developmental milestones of motor and speech-language skills.

Results on Chi-square test of independence (See Tables 4.5-4.12) revealed that there is no significant association between parenting experience and awareness of developmental milestones of motor and speech-language skills except for two items; Q17 – rolling over and Q28 – responding to prepositions For both these test items the potential parent group had higher correct scores despite the parent group having prior parenting experience.

When the association between parenting experience and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted. The responses for parental attitudes and beliefs (Section III) were also not associated with preferred partners for discussion of a child's motor or speech delay, expected service delivery availability for developmental screening in children, preferred frequencies of developmental screening of children, and expectations of developmental domains to be assessed.

Although no effects of parent experience were found in the present study, Rikhy et al. (2010) noted that parents were 1.29 times more likely to recognise the timing of motor

milestones as compared to the non-parent population. Females were found to be 1.66 times more aware of physical milestones. The majority of studies have focused on the mother's knowledge and parenting decisions.

This subsection met the second objective of the study which was to investigate the awareness and perception of normal developmental milestones amongst the potential parent group and parent group. The findings of this subsection is indicative that the null hypothesis proposed i.e., ***H_o1*** *"There is no significant difference in awareness and perception between the potential parent and parent group"* is accepted.

5.2.3 Association between age of participant and awareness and perception of developmental milestones of motor and speech-language skills in children.

Results on Chi-square test of independence (See Tables 4.13 - 4.20) revealed that there is no significant association between age of the participant and awareness of developmental milestones of motor and speech-language skills. When the association between age of participant and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted. The responses for parental attitudes and beliefs (Section III) were also not associated with age of the participants for discussion of a child's motor or speech delay, expected service delivery availability for developmental screening in children, preferred frequencies of developmental screening of children, expectations of developmental domains to be assessed.

In accordance of these findings, Safadi et al. (2016) noted that knowledge of physical, emotional and cognitive developmental skills has been reported to not differ according to parental age, education, and parity in Jordan (Al-Ayed, 2010). There is a need for more

extensive research in India for culturally relevant assumptions to be made as parental age has been identified as a risk factor for limited knowledge for child development (Reich, 2005).

This subsection met the third objective of the study which was to investigate the age-related differences in awareness and perception of normal developmental milestones in potential parent group and parent group in the study. From the findings of the above section, it is indicative that the null hypothesis proposed ***H_o2*** *"There is no significant age-related difference in awareness and perception of normal developmental milestones in potential parent group and parent group in the study"* is accepted.

5.2.4 Association between gender of participant and awareness and perception of developmental milestones of motor and speech-language skills in children.

Results on Chi-square test of independence (See Tables 4.21 - 4.28) revealed that there is no significant association between gender of the participant and awareness of developmental milestones of motor and speech-language skills. When the association between gender of the participant and perception of developmental milestones of motor and speech-language skills (Section II) was examined no significant association between the two was noted. The responses for parental attitudes and beliefs (Section III) were also not associated with gender of the participant for discussion of a child's motor or speech delay, expected service delivery availability for developmental screening in children, preferred frequencies of developmental screening of children, expectations of developmental domains to be assessed.

Even though gender was found to have no effect on the responses of the questionnaire, past literature has stated differences in parental roles; fathers possess generic knowledge

about childhood, whereas mothers' knowledge is more specific and circumstantial, also due to greater direct experience with their own children (McGillicuddy-De Lisi,1982). The findings of the present study are inconsistent with previous findings by Ribas and Bornstein (2005) who presumed that females tend to know more than males about child development. With changing parenting roles and practices, "new fathers' could now be expected to have improved their understanding of child development as they are more involved in their children's lives however, it is still true that the fathers thought of their role being mediated by the mothers as 'relationship coordinators' that facilitate "involved fathering" (Hauser, 2012; Miller 2011). Culture specific variations also need to be considered as cultural gender roles are assigned which dictates females to be more nurturing and caring than males (Witt, 1997).

This subsection met the fourth objective of the study which was to investigate the gender-related differences in awareness and perception of normal developmental milestones in potential parent group and parent group in the study. From the findings of the above section, it is indicative that the null hypothesis proposed ***H_o3*** *"There is no significant gender-related difference in awareness and perception of normal developmental milestones in potential parent group and parent group in the study"* is accepted.

Chapter 6

SUMMARY AND CONCLUSION

The present study aimed to explore the awareness and perception of developmental milestones of children up to 3 years of age among parents and potential parents in urban setup through a survey. While the first objective of the study was to investigate the overall awareness and perception of normal developmental milestones amongst the participants, the other objectives were to investigate any differences in awareness and perception based on parenting experience, age, or gender.

A total of 84 participants were a part of this study. The questionnaires were made available to them through Google forms and their responses were recorded. The recorded responses were subjected to descriptive and inferential statistics.

The findings for the overall awareness of developmental milestones show that only 19.22 ($\pm$ 9.51) were able to correctly estimate the developmental ages. The vast majority of them either underestimated the skill (around 48% of the participants) or overestimated the skill (around 33%). This is a sign for concern as underestimation might reflect lack of access to resources on child development (Karupannan et al., 2020). On the other hand, overestimation might indicate abusive parents who are frustrated or worried about their child's development exaggerating while reporting the milestones.

Despite showing poor scores in estimating correctly the emergence of a skill in the previous section (Section I), around 80% of the participants were confident to classify a behaviour as either 'typical' or 'atypical', especially when another option of 'unable to

decide" was available in Section II-Perception. To sum up parental attitudes and beliefs (section III), majority of the participants expected their child to be screened periodically preferably by the paediatricians during a visit to their clinic. Most participants wanted the screening to cover domains of motor, communication, social, academic, and feeding skills. Although, majority of them were inclined to consult and follow up the advice of the paediatrician, they would most likely talk to their spouses and elders of the family first. While 65% of the participants thought there is a dearth of access to resources on child development, most of the participants (80%) expected the paediatricians to provide information on child development. Around 60% of the participants chose to either wait or said they could not decide on whether they would consult a professional immediately about their concern on a delayed skill (probably associated with the stigma of seeking help from a therapist among other factors like service accessibility, financial condition of the family, etc). It is still a positive sign that over 70% of the participants agreed to attend a webinar on child development.

The findings also suggested that there are no statistically significant differences in awareness and perception based on parenting experience, age, or gender in the participants. Although there are no differences found in the present study, Ricky et al, (2010) reported parents were 1.29 times more likely to recognize the timing of motor milestones when compared to non-parents and females were 1.66 times more likely to estimate correctly than males. With regard to age, Reich (2005) reported that increased parental age is a risk factor for limited knowledge but the findings of the present study are in line with other studies (Saffadi et al., 2016; Al-Ayed et al., 2010) that reported parental age and knowledge of milestones were not related.

Implications of the current study

- There is a need for parent education programs on child development. There is no doubt that parental education could improve the odds of early identification and diagnosis of developmental delays and deviations. Parents, as one of the most important observers of their children, must be well prepared to recognize and address any developmental difficulties at the appropriate time. The benefits of early intervention could be enormous if it is implemented appropriately with size, quality, and equity. This would include better survival, improved cognitive development and school performance, educational attainment, and an overall improvement in the child's quality of life.
- Speech-language Pathologists must be involved in parent education programs. It could be considered a prevention method to educate parents about developmental expectations, management of deviant behaviours and consulting the right professionals. Parents that are knowledgeable of child development and behaviours are also advocates and secondary sources of referrals. Because planning and implementing such initiatives is a large undertaking that necessitates teamwork, regulatory organizations in India like Rehabilitation Council of India (RCI) must encourage collaborative policymaking.
- The content of these programs must include orientation to developmental milestones in multiple domains like motor, speech, cognition, social, emotional, etc., and information relevant to identify deviant behaviours and debunking common myths about child development and related issues.

Limitations and Future Directions

According to these findings, there is a clear need for parent education programs on child development. The findings, however, are confined to the participants of this study. The current study needs to be replicated with a larger sample size, as well as include additional variables like socioeconomic level and religious origins, as well as regional variances in parenting techniques for inferential conclusions. Interactional effects between parenting experience, age, and gender can also be explored with a larger sample size.

Further research is needed to plan a long-term formulation and implementation of culture specific programs available in native languages so that outcome measurement-based inferences can be made for the benefit of the community.

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Appendix

AWARENESS AND PERCEPTION OF DEVELOPMENTAL MILESTONES OF CHILDREN UP TO 3 YEARS OF AGE AMONG PARENTS IN URBAN SETUP

1. I consent to participate in the study.

    - Yes
    - No

2. What is your degree of education?
   Graduation: Bachelor degree; Post-graduation: Master's degree or higher

    - Illiterate/ Primary/ Secondary School/ Matriculation
    - Graduation
    - Post-Graduation or above

Section: Demographic details

3. Name. _____
4. Age. _____

5. Gender

    - Female
    - Male
    - Other: _____

6. Contact number. _____
7. City. _____
8. How many years have you been married? . _____

9. How many children do you have?

    - None
    - 1
    - 2
    - 3
    - Other: . _____

10. Please mark the age of the children

	0-3 years	3 -5 years	5-7 years	7-10 years	Greater then 10 years
1st child					
2nd child					
3rd child					
4th child					
5th child					
6th child					

11. State your current occupation. . _____
12. What is your approximate monthly family income?

- ₹5000 or below
- ₹5001 - ₹10,000
- ₹10,001 - ₹15,000
- ₹15001 - ₹20,000
- ₹20001 and above

13. What is the approximate value of your family property? (Movable and immovable)

- Nil or below ₹50000
- Between ₹50,000 to ₹1.5 Lakhs
- Between ₹1.5 Lakhs to ₹2.5 Lakhs
- Between ₹2.5 Lakhs to ₹5 Lakhs
- Above ₹5.0 Lakhs

Section I: Awareness

14. At what age does a child begin to hold his/her head steady?

- 6 - 9 months
- 8 - 11 months
- 9- 12 months
- 0 - 3 months
- 3 - 6 months

15. By what age does a child begin to jump off the floor with both feet?

- 28 - 30 months (2.4 - 2.6 years)
- 22 - 24 months (1.10 - 2 years)
- 30 – 32 months (2.6 – 2.8 years)
- 24 - 26 months (2 - 2.2 years)
- 26 - 28 months (2.2 - 2.4 years)

16. When does a child learn to use his/her palm and fingers to fill and eat with spoon?

- 20 - 22 months (1.8 - 1.10 years)
- 22 - 24 months (1.10 - 2 years)
- 16 - 18 months (1.4 - 1.6 years)
- 18 - 20 months (1.6 - 1.8 years)
- 24 - 26 months (2 - 2.2 years)

17. At what age does a child begin to roll over?

- 6 - 8 months
- 2 - 4 months
- 8 - 10 months
- 0 - 3 months
- 4 - 6 months

18. By what age does a child start to point to recognised objects?

- 16 - 18 months (1.4 - 1.6 years)
- 14 - 16 months (1.2 - 1.4 years)
- 18 - 20 months (1.6 - 1.8 years)
- 12 - 14 months (1 - 1.2 years)
- 20 - 22 months (1.8 - 1.10 years)

19. At what age does a child start crawling?.

- 2 - 4 months
- 6 - 8 months
- 0 - 2 months
- 8 - 10 months
- 4 - 6 months

20. When does a child pull pants up with assistance?.

- 20 - 22 months (1.8 - 1.10 years)
- 24 - 26 months (2 - 2.2 years)
- 22 - 24 months (1.10 - 2 years)
- 18 - 20 months (1.6 - 1.8 years)
- 26 - 28 months (2.2 - 2.4 years)

21. At what age do children begin to sit by themselves?

- 7 - 9 months
- 5 - 7 months
- 0 - 3 months
- 9 - 12 months
- 3 - 5 months

22. When does a child start to throw a ball over head?

- 26 - 28 months (2.2 - 2.4 years)
- 28 - 30 months (2.4 - 2.6 years)
- 30 - 32 months (2.6 - 2.8 years)
- 32 - 34 months (2.8 - 2.10 years)

- 34 - 36 months (2.10 - 3 years)

23. At what age do children walk up and down the stairs with help?

- 18 - 20 months (1.6 - 1.8 years)
- 16 - 18 months (1.4 - 1.6 years)
- 20 - 22 months (1.8 - 1.10 years)
- 22 - 24 months (1.10 - 2 years)
- 24 - 26 months (2 - 2.2 years)

24. At what age does a child start to occasionally follow commands? (Examples of commands: Put that down, Stop it, etc)

- 8 - 10 months
- 14 - 16 months (1.2 - 1.4 years)
- 10 - 12 months
- 12 - 14 months (1 - 1.2 years)
- 16 - 18 months (1.4 - 1.6 years)

25. A child begins to answer "Who" questions by:

- 36 - 38 months (3 - 3.2 years)
- 32 - 34 months (2.8 - 2.10 years)
- 30 - 32 months (2.6 - 2.8 years)
- 28 - 30 months (2.4 - 2.6 years)
- 34 - 36 months (2.10 - 3 years)

26. A child may use his/her first word by what age?

- 12 - 14 months (1 - 1.2 years)
- 10 - 12 months
- 8 - 10 months
- 14 - 16 months (1.2 - 1.4 years)
- 16 - 18 months (1.4 - 1.6 years)

27. At what age can a child can name at least 3 pictures (i.e., "ball" when shown a picture of a ball)

- 18 - 20 months (1.6 - 1.8 years)
- 22 - 24 months (1.10 - 2 years)
- 24 - 26 months (2 - 2.2 years)
- 20 - 22 months (1.8 - 1.10 years)
- 26 - 28 months (2.2 - 2.4 years)

28. A child responds to prepositions such as 'on', 'under', 'front', 'behind', etc. by what age?

- 32 - 34 months (2.8 - 2.10 years)
- 34 - 36 months (2.10 - 3 years)
- 30 - 32 months (2.6 - 2.8 years)
- 28 - 30 months (2.4 - 2.6 years)
- 26 - 28 months (2.2 - 2.4 years)

29. At what age does a child start to respond with vocalization when called by name? Vocalisations: Speech like sounds like aaaa/eeee/mamama/bababa/, etc.

- 9 - 11 months
- 5 - 7 months
- 11 - 13 months
- 7 - 9 months
- 13 - 15 months (1.1 - 1.3 years)

30. When does a child begin to recognize names of body parts?

- 11 - 13 months
- 15 - 17 months (1.3 - 1.5 years)
- 17 - 19 months (1.5 - 1.7 years)
- 19 - 21 months (1.7 - 1.9 years)
- 13 - 15 months (1.1 - 1.3 years)

31. A child begins to occasionally use 2-3 word phrases with nouns, some verbs, and some adjectives at:

- 24 - 26 months (2 - 2.2 years)
- 22 - 24 months (1.10 - 2 years)
- 20 - 22 months (1.8 - 1.10 years)
- 26 - 28 months (2.2 - 2.4 years)
- 18 - 20 months (1.6 - 1.8 years)

32. At what age can a child name objects when told their use (i.e. Parent: What is used for drinking? Child answers: A cup):

- 30 - 32 months (2.6 - 2.8 years)
- 26 - 28 months (2.2 - 2.4 years)
- 32 - 34 months (2.8 - 2.10 years)
- 28 - 30 months (2.4 - 2.6 years)
- 34 - 36 months (2.10 - 3 years)

33. When does a child begin to babble a series of sounds that sound like speech (i.e., bababa, mamama, tatata, etc)

- 2 - 4 months
- 6 - 8 months
- 8 - 10 months
- 4 - 6 months
- 10 - 12 months

Section II: Perception

Instructions: Categorize the statements as typical, atypical, or unable to decide.

Typical - representative of what occurs in normally developing children. Atypical - not representative of what occurs in normally developing children. Unable to decide - unable to label the statement as either typical or atypical

		Typical	Unable to decide	Atypical
34.	Only walking on toes at 1.5 years of age.			
35.	Repeating things that have been said to them always at 3 years of age.			
36.	Points at objects/persons for communication consistently at 11 months of age (i.e., points to car when they want car).			
37.	Hand flapping most of the time during play at 2.5 years of age.			
38.	Highly restricted choices of interest at 3 years of age (i.e., enjoys only spinning toys).			
39.	Slapping, hitting, or biting self and others at one year of age.			
40.	Engages in pretend play at 2.5 years of age (i.e., uses kitchen set/doctor set for play)			
41.	Mouths objects at 6 months of age			

Section III: Attitudes and Beliefs

42. I am more likely to discuss a delay in my child/ children's motor or speech development w my _____ first:

- Spouse
- Elders of the family Friends/Other parents/Neighbours Pediatrician
- Psychologist
- Speech language pathologist Physiotherapist
- Occupational therapist
- School teachers
- Other:

43. I feel that developmental screening services should be made available at: (Check all that apply)

- Pediatrician Clinic
- Primary Health Care Centers
- Pre-schools

- Schools
- Other:

44. I feel that my child/children should be screened:

- Every year
- Twice a year
- Once in three months
- Only if I (the parent) deem necessary
- Other:

45. I feel that the following concerns should be addressed when looking into the development of my child/children: (Check all that apply)

- Motor skills
- Communication skills
- Social skills
- Academic skills
- Feeding skills
- Other:

46. If the following individuals raise a concern regarding your child's development, how likely are you to follow it up?

	Highly likely	Likely	Unlikely	Highly unlikely
Spouse				
Elders				
Friends/Other parents/neighbours				
Pediatrician				
Psychologist				
Speech therapist				
Physiotherapist				
Occupational therapist				
Play school teachers				
Baby sitter/Nanny				

47. If my child/children has/have a delay in developing any motor or speech skill, I would prefer to wait for at least 6 months before seeking professional help.

- Strongly disagree
- Disagree
- Undecided
- Agree
- Strongly agree

48. I feel like the society will look at my child/children differently if I decide to seek help from developmental professional like speech therapists, psychologists, physiotherapists, etc:

- Strongly disagree
- Disagree
- Undecided
- Agree
- Strongly agree

49. I feel my pediatrician should provide me with information on what to expect in terms of development in motor and speech areas at least till the age of 3 years.

- Strongly disagree
- Disagree
- Undecided
- Agree
- Strongly agree

50. I think there is a shortage of accessibility to resources on child rearing and child development for parents.

- Strongly disagree
- Disagree
- Undecided
- Agree
- Strongly agree

51. I would like to attend webinars/seminars on child development?

- Strongly disagree
- Disagree
- Undecided
- Agree
- Strongly agree