MEDICAL SCIENCE

Assessment of Awareness and Knowledge of Parents about Child Developmental Milestones in Al-Kharj City, Saudi Arabia

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ABSTRACT

Background: Child development is the process by which children's skill development is acquired over predictable times recognized as developmental milestones. A set of practical abilities or tasks that most children can execute by a certain age constitute a developmental milestone. Aims: To assess the parents' level of awareness regarding a child's developmental milestone, as well as the correlation between some demographic factors and the parents' knowledge about the child's development. *Methodology:* This study is based on cross-sectional study design. A sample of 406 parents was taken by convenient sampling technique among the community of Al-Kharj City, Saudi Arabia from October 2022. To measure parents' understanding of the developmental milestones of their children, a structured questionnaire was employed. *Results:* Saudi parents have adequate knowledge about child development in the areas of physical and language development as overall percentages of correct answers regarding language and physical development were 68% and 60%, respectively, while they have inadequate knowledge about cognitive and social development, with the overall percentages of correct answers being 45% and 49%, respectively. *Conclusion:* Cognitive, emotional and social growths are less well-known than language and physical development. The results of child development may be improved by strategies to raise awareness of developmental milestones and information on how to encourage optimal growth.

Keywords: Developmental milestone, knowledge, awareness, Saudi parents

1. INTRODUCTION

Child development is the process by which children's skill development

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changes over predictable periods recognized as developmental milestones. Physical growth and children's cognitive and social development are all measured aspects of development and growth. Child development studies the alterations that take place in humans as they develop from childhood to adulthood (Alqurashi et al., 2021). A developmental milestone is a collection of functional skills or specific tasks that most children can perform by a certain age. Child development refers to how a child grows older and gains the ability to do more complex things. Growth and development are not the same things. The development of a child is referred to as growth: The actual age at which a healthily developing child hits a milestone varies widely, despite the fact that each milestone has an age level. Every child is distinct (WHO Multicentre Growth Reference Study Group, 2007).

The psychological, biological and emotional changes that take place in people between birth and puberty as they normally progress from dependence to growing autonomy are referred to as child development. Although there is a predictable sequence and it is a continual process, each child chooses a distinct path. Each stage does not develop at the same rate since it is influenced by preceding developmental events. Events and genetic factors during prenatal life can have a strong influence on these developmental changes. It is most frequently the consequence of a combination of the two.

Developmental change can result from genetically controlled processes known as maturation or as a result of environmental influences and learning. It could also happen as a result of human nature and our ability for gaining knowledge from our environment (WHO Multicentre Growth Reference Study Group, 2007). Developmental delay is defined as a condition that causes a significant delay in the development process. It does not refer to a condition in which the child's development is slightly or momentarily delayed. The presence of developmental delay indicates that the development process has been significantly affected and that without special intervention, the child's ability to achieve normal developmental milestones and educational performance at school is likely to be jeopardized (Gupta et al., 2016). Normal development occurs within a range and children whose maturation falls outside of this range may be eligible for special education services. More specifically, these children have delays in language, perception, thinking skills and emotional, social and/or motor development.

The keys to eliminating developmental delay as a primary need are early identification and intensive interventions (National Academies of Sciences, 2016). The relationship between parents and children, the growth of the brain and the promotion of child development can all benefit from parents' knowledge and awareness of norms, milestones, caregiving abilities and child development processes. Such information will eventually affect children's conduct and society's welfare (Tamis-Lemonda et al., 2001).

The expectations that parent have for and how they interact with their children are influenced by their knowledge of child development. In fact, it has been discovered that in industrialized nations, a mother's capacity to enhance her child's growth is favorably connected with her understanding of child development. High levels of parental effectiveness and competence were displayed by parents who understood child development. On the other hand, those with little information showed poor parenting ability regardless of parenting effectiveness (Benasich and Brooks-Gunn, 1996). It is assumed that mothers' knowledge of child development plays an important role in motivating how mothers behave concerning their children. Mother-child interactions involve several developmental domains. Mothers' awareness promotes a wide range of positive development effects (Ramey and Ramey, 1998).

Children with behavioral issues are estimated to cost the system ten times more than children who do not have behavioral issues. Understanding child development seems to be a key element of good parenting and healthy child development (Scott et al., 2001). The purpose of our study was to determine the parents' level of knowledge about a child's developmental milestones and the relationship between certain demographic parameters and the parents' understanding of a child's development.

2. METHODOLOGY

The cross-sectional survey method is the basis of this study. From October 2022 to March 2023, an easy sampling technique was used to collect a sample of 406 parents randomly from the people of Al Kharj City, Saudi Arabia. The Standing committee of Bioethics (SCBR) and deanship of scientific research at Prince Sattam Bin Abdulaziz University approved the research with approval No: SCBR-050-2023.

To measure parents' understanding of the developmental stages of children, a self-made questionnaire was employed. The development of the questionnaire was based on a thorough review of the available literature, the opinions of experts, ideas from the research panel, the researcher's professional experience and an informal interview with mothers of newborns. The following sections of the questionnaire were built to achieve the study's goals: The tool has the following two components.

Part I

Sample Characteristics. Age, gender, nationality, education levels, occupation, monthly family income, information source and the number of children is the eight items of personal information that make up this section.

Part II

This section consists of structured multiple-choice questions that assess parents' understanding of several areas of child development and growth. This survey consists of 16 multiple-choice questions that examine the four areas of development: Physical, language, social and cognitive development. Each of the survey's 16 questions has four possible answers, with only one correct answer that receives one mark.

If the percentage of accurate answers is 50% or more, it indicates that the parents are knowledgeable about how children develop and if it is less than 50%, it indicates that the parents are not knowledgeable enough.

The study's participants were also questioned about where they learned about child development. Age and educational level data on the sample's demographic characteristics were also recorded. Using the SPSS version 20 program, the data were analyzed as frequency and percentage.

3. RESULTS

The result of this current study showed that a sample of 406 parents, male parents represent 126 parents (31%) and female parents were 280 (69%) and the age of the parents 18-45 years represent 303 parents (75%) while age above 45 years represent 103 parents (25%). Most of the parents were Saudi parents 397 (98%) and most of the parents were undergraduates or less 385 (95%) and only 21 parents have postgraduate education. We have observed that in Saudi Arabia, the correct answered percentage about the physical development milestones including walking, sitting and crawling was (68%) and the incorrectly answered percentage was (32%) in this field of development (Tables 1, 2, 3, 4, Figure 1 and 2).

Table 1 Demographic data (N=406)

Variable	Answer	Frequency	Percentage
Gender	Male	126	31.0%
	Female	280	69.0%
	Total	406	100.0%
Age	18 - 25 years	65	16.0%
	26 - 35 years	121	29.8%
	36 -45 years	117	28.8%
	More than 45 years	103	25.4%
	Total	406	100.0%
Educational level	Primary or less	53	13.1%
	High school	113	27.8%
	Undergraduate	219	53.9%
	Post-university studies	21	5.2%
	Total	406	100.0%
Nationality	Saudi	397	97.8%
	Non-Saudi	9	2.2%
	Total	406	100.0%
Work	I do work	188	46.3%
	I don’t work	218	53.7%
	Total	406	100.0%
Number of children in the family	One child	71	17.5%
	Two children	63	15.5%
	Three children	59	14.5%
	Four or more children	213	52.5%
	Total	406	100.0%

Monthly income of the family	Less than 5000 SR	55	13.5%
	5000 to 10,000 SR	136	33.5%
	10,000 to 15,000 SR	128	31.5%
	More than 15,000 SR	87	21.4%
	Total	406	100.0%
The source of your information about the child's developmental stages	Parents and friends	158	38.9%
	Medical Books	81	20.0%
	Health Clinics	39	9.6%
	Media and social networking	128	31.5%
	Total	406	100.0%

Table 2 Physical development (N=406)

Question	Correct		Incorrect	
	Frequency	Percentage	Frequency	Percentage
When does the child walk?	335	82.5%	71	17.5%
When does the child become able to use the spoon for eating?	282	69.5%	124	30.5%
When does the child start crawling?	272	67.0%	134	33.0%
When does the child sit alone without support?	215	53.0%	191	47.0%
Overall physical development	1104	68.0%	520	32.0%

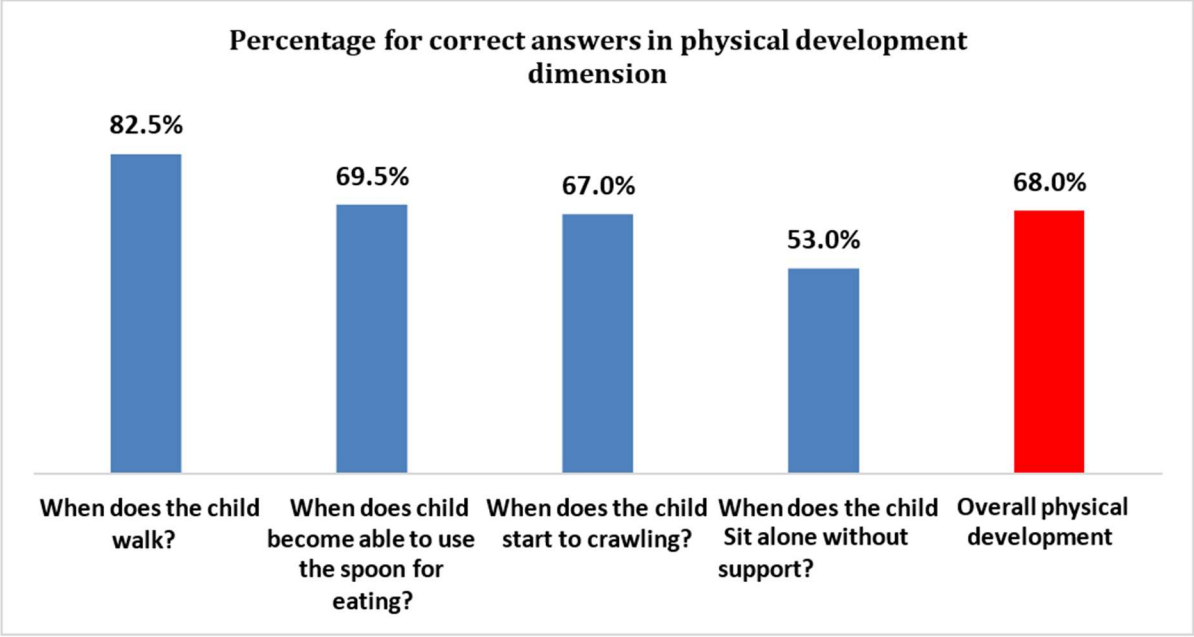

Figure 1 The percentage of correct answers in the physical development dimension

Table 3 Language development (N=406)

Question	Correct		Incorrect	
	Frequency	Percentage	Frequency	Percentage
When does the child start to pronounce his/her name?	311	76.6%	95	23.4%
When does the child become alert to the sound surrounding him?	278	68.5%	128	31.5%
When does the child start to sing an obvious song?	203	50.0%	203	50.0%
When does the child start to repeat baba and mama?	182	44.8%	224	55.2%
Overall language development	974	60.0%	650	40.0%

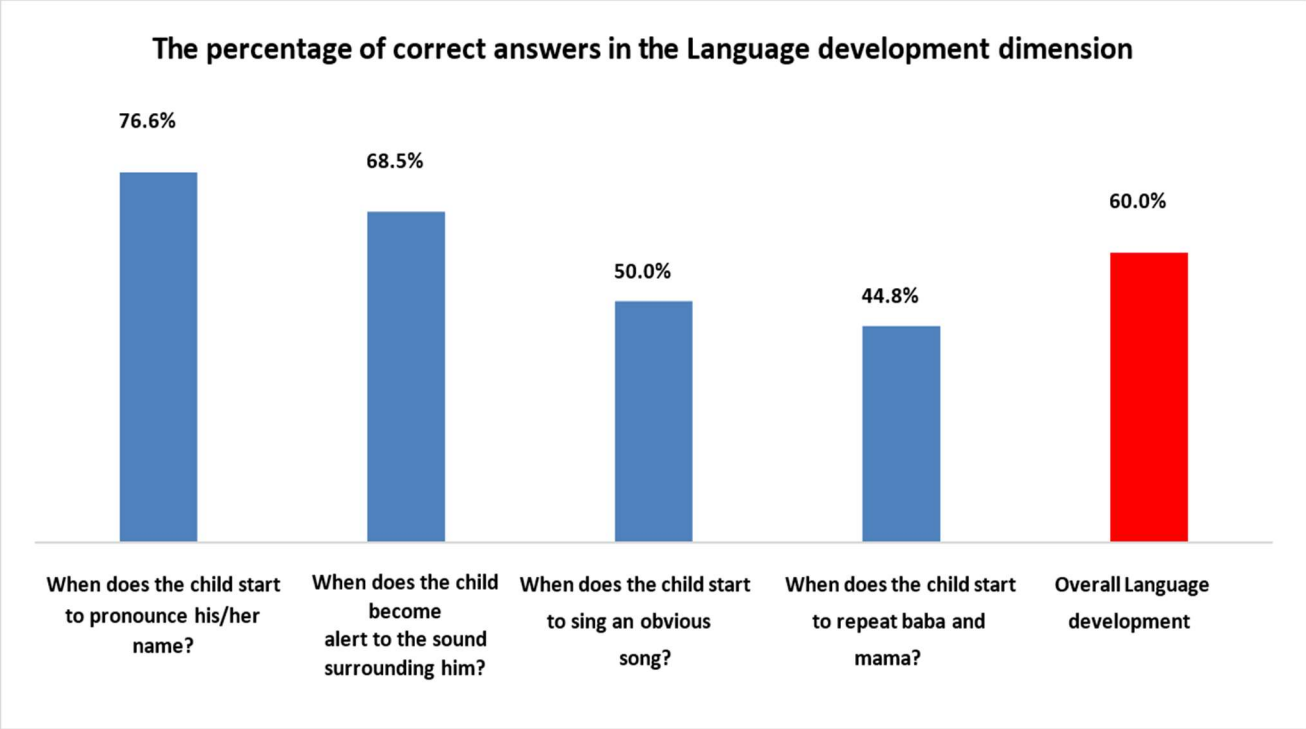

Figure 2 The percentage of correct answers in the language development dimension

Table 4 Social development (N=406)

Question	Correct		Incorrect	
	Frequency	Percentage	Frequency	Percentage
When does the child choose his friends?	120	29.6	286	70.4%
When does the child agree to share his toys with other children?	170	41.9	236	58.1%
When does the child wave by his hand bye bye?	202	49.8	204	50.2%
When does the child go to the bathroom without help from his parents?	298	73.3	108	26.6%
Overall Social development	790	48.6	834	51.4%

Table 5 Emotional and Cognitive development (N=406)

Question	Correct		Incorrect	
	Frequency	Percentage	Frequency	Percentage
When does the child count numbers (1, 2, 3 …)?	141	34.7	265	65.3%
When does the child build a bridge of toys or stick 7 or 8 cubes over each other?	178	43.8	228	56.2%
When does the child can follow orders and Simple directions?	183	45.1	223	54.9%
When does the child become more social and recognize father and mother or caregiver?	222	54.7	184	45.3%
Overall Emotional and Cognitive Development	724	44.6	900	55.4%

4. DISCUSSION

Our results indicate that there is good knowledge and awareness among Saudi parents about the physical development of their children. Results from the study by Pujadas-Botey et al., (2017) in this regard also revealed that, parents and other adults had greater

knowledge about child motor development than other domains (40%), compared to 21% for social, emotional and cognitive development.

According to the participants, parents have good information on the area of speech and language development. They mainly know the age at which the child starts to pronounce his name and when the child starts to sing. The overall percentage of correct answers in this area was (60%) in comparison to (40%) of incorrect answers in this field of language development. The majority of the participants were not familiar with the social development questions including (the age of at which the child can go to the bathroom alone without help and the age at which the child can wave bye bye) as the percentage of correct answers in this field was only (49%) this in comparison to (51%) of the percentage of incorrect answers in this aspect of development.

In this regard, Morawska et al., (2011) suggested through their studies that parents with more knowledge are more concerned about their children's development, engage in more interactions with them, create better environments for them and exhibit better parenting behavior, all of which will aid in their children's social and cognitive growth. In the area of cognitive development as counting numbers, building towers and toys, the result indicates that Saudi parents have little information and knowledge about cognitive development as the overall percentage of correct answers in this area was (45%) in comparison to (55%) of incorrect answers in this field of cognitive development.

The lack of adequate attention to various aspects of child development, the absence of an appropriate context and the lack of sufficient incentives to encourage parents to increase their level of knowledge are the main causes of Saudi parents' low knowledge about the social and cognitive development of children. Similarly, Pujadas-Botey et al., (2017) asserted that Canadian parents' lack of understanding is caused by their inability to get trustworthy information regarding child development as well as their stress. Everyone who took part in the study agreed that understanding how children develop can help with both parent-child behavior and child development (Ertem et al., 2007).

According to the current study, it was observed that the source of knowledge of parents and their awareness about their child's development came from the parents and friends, social media and from watching TV and reading books. Only (9%) obtained their knowledge from the health care clinics. This must lead us to concentrate and stress on the role of the social media to give more valuable information about the normal developmental milestone and the age at which the child can achieve the skills of development.

Other studies also looked at ways to train parents and improve their knowledge, including in-person consultations, group training and advice, assistance from health care professionals, friends and family, using the Internet and reading a variety of written materials, including brochures, printed materials from reputable websites, children's books, parent training books and charts of a child's development (Glascoe and Trimm, 2014; Morawska et al., 2011).

5. CONCLUSION

It was concluded from this study, Saudi parents have adequate knowledge about child development in the area of physical and language development as the overall correct answers percentage about physical & language development was 68% & 60% respectively and have inadequate knowledge about child development in the area of cognitive & social development as overall correct answers percentage was 45% & 49% respectively so parents need to be more knowledgeable about child development. Parenting efficacy, which is linked to improved child outcomes, is mostly determined by parents' understanding of developmental stages as well as their ability to set correct and reasonable expectations for their children's behavior.

Recommendation

Healthcare workers should be well educated about child development so they can better educate the community.

Information programs about child development should be delivered on health care clinics, televisions, radio, newspapers and social media.

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Authors' Contributions

All authors contributed to the research and/or preparation of the manuscript. Abbas Elbakry Elsayed, Ismail Abdelfattah M Hassan and Mohammed Ibrahim Hajelbashir participated in the study design and wrote the first draft of the manuscript. Abdulrahman

Mousa Almalki, Rasheed A Alhajri, Abdullah NM Al-Harbi and Faisal SF Alharbi collected and processed the samples. Mohammed NM Al-Harbi, Arif Mohammed M Alanazi, Abdulaziz Munahi Alanazi and Ali Hassan A. Ali participated in the study design and performed the statistical analyses. All of the authors read and approved the final manuscript.

Ethics Approval

All series of steps that were implemented in this study complied with the Ethics Committee of Prince Sattam bin Abdulaziz University Institutional Review Board (SCBR-050-2023).

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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