

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Screening for Developmental Delays in Children 0-3 years of age in a Primary Health Care Setting in Cairo Egypt

Thesis

*Submitted for Partial Fulfillment of Master
Degree in Family Medicine*

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2021*

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبَّحَانَكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgment

First and foremost, I feel always indebted to **ALLAH**, the Most Kind and Most Merciful.

*I'd like to express my respectful thanks and profound gratitude to **Prof. Diaa Marzouk Abd El-Hamid**, Professor of Community, Environmental and Occupational Medicine, Faculty of Medicine- Ain Shams University for her keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.*

*I am also delighted to express my deepest gratitude and thanks to **Prof. Ghada Essam Eldin Amin**, Professor of Community, Environmental and Occupational Medicine Faculty of Medicine - Ain Shams University, for her kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.*

*I am deeply thankful to **Assistant professor. Shaymaa Ahmed Maher Deifalla**, Assistant professor of Pediatrics and neonatology Faculty of Medicine - Ain Shams University, for her great help, active participation, and guidance.*

Words cannot express my extreme gratitude towards my family. My mother and father, my number 1 fans, my ultimate support system, and my brothers for always believing in me. Also my wonderful friends who were with me every step of the way.

Omnya Atef

Abstract

Background: Developmental delays (DDs) in children are increasing in frequency and necessitate routine screening of young children for early recognition and management.

Objective(s): To estimate the frequency of developmental delays among children 0-3 years of age and determine the associated factors in Saraya El Koba primary care center in Cairo, Egypt.

Methods: This cross-sectional study involved a total of 193 children at the ages 2 to 36 months. Data were collected using the official Arabic version of the Ages and Stages Questionnaires, Third Edition (ASQ-3) to assess five domains of development (Gross Motor, Fine Motor, Language and Communication, Problem-Solving and Adaptive Behavior, and Personal and Social Performance). Parents' characteristics and risk factors related to DDs were included.

Results: Overall frequency of children with DDs was 9.33%. The most prevailing DDs were the communication and gross motor (3.11% each). Lower rates of DDs were identified for fine motor (1.04%). Girls scored higher than boys in problem solving domain ($p=0.037$). First to third order of birth had higher scores in communication and social scores ($p=0.025, 0.003$ respectively). Mothers with higher education had children with higher fine motor and total developmental scores ($p<0.001$ and 0.014 respectively).

Conclusion: The study recognized a high frequency of DDs especially for communication and gross motor skills. It recognized a number of modifiable risks factors and recommended early screening of preschool children for prompt recognition and timely intervention.

Keywords: Developmental disability, infants and toddlers, ASQ-3.

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List of Abbreviations

Abb.	Full term
AAP.....	American academy of pediatrics
ADHD	Attention Deficit Hyperactivity Disorder
ASD.....	Autism Spectrum Disorder
ASQ.....	Ages and Stages Questionnaire
DD.....	Developmental Delay
NICU	Neonatal Intensive Care Unit
PHC	Primary Health Care
SD	Standard Deviation
SDD.....	Suspected Developmental delay
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

INTRODUCTION

Child development refers to the continuous but predictably sequential biological, psychological, and emotional changes that occur in human beings between birth and the end of adolescence. The sequence of development is the same for all children and can be described in terms of developmental milestones (*Choo et al., 2019*). Developmental delay is a condition in which the child is not developing and/or does not reach skills in accordance with the sequence of predetermined stages (*Accardo and Whtiman, 2003*).

Child development is influenced by bio-medical and socio-cultural factors that are in a continuous interaction. Some of these factors are non-modifiable including child gender, consanguinity between parents, parents' ages and educational level (*Valla et al., 2015*). Other risk factors are modifiable like nutrition (including breast feeding), providing emotional support and educating mothers (*Çelikkiran et al., 2015*).

Worldwide, 52.9 million children under 5 years of age have delayed development. According to this same study, about ninety-five (95%) of the children with developmental delay and disabilities were found to be living in low and middle-income countries. According to the global burden of disease, Egyptian children under 5 are the 7th most common to suffer from developmental disabilities worldwide (more than any middle eastern country) with an overwhelming frequency of 10% (*Olusanya et al., 2018*).

Even though childhood developmental delay is a worldwide problem of significant importance, it has been estimated that only about 30% of children with developmental disabilities are diagnosed before they enter school (**Çelikkiran et al., 2015**). This data coupled with the fact that pediatricians' clinical judgment is not always sufficient to identify delays during health checkups because they fall short of detecting about 30-50% of psychomotor development deficits (**Otalvaro et al., 2018**) highlights the importance of the creating a systemized screening program for developmental delay.

Screening programs should target children in their first 3 years of life as the uttermost brain development occurs at this age (**Choo et al., 2019**). Children at that age range encounter health care professionals the most and will benefit the most from interventional programs (**Fischer et al., 2014**).

The AAP (the American Academy of Pediatrics) recommends routine and periodic use of standardized tools throughout each well child visit, and at least at three specific child ages (at 9, 18, and 24 or 30 months of age) (**Vitrikas et al., 2017**).

Many screening tools were considered before carefully choosing the ASQ-3 (Ages and Stages Questionnaire). The ASQ is one of the most commonly used developmental screening tools cited in research and one that was an excellent fit for this study because of its cultural sensitivity, and availability in the native spoken language by targeted participating parents (**Charafeddine et al., 2020**). As for the

validity of the ASQ, sensitivity is ranged between 70-90%, specificity 76-91%, 94% testing -retesting reliability, 44-83% internal consistency, 76-91% concurrent validity and testing-retesting reliability:0.91, inter-rater reliability: 0.92 according to multiple researches (*Otalvaro et al., 2018*).

Several studies using the ASQ-3 were conducted in the middle east. An Egyptian study using the ASQ-3 was conducted by Abou El Ella in Menofia governate. Kindergarden children aged 24-6 months participated in the study. The frequency of developmental delay was 2.9%, among the factors recognized to affect child development was the child's gender, parental education and consanguinity (*El-ella et al., 2017*). Another study done by Ahmadipour used the ASQ to screen for developmental delay in Iran included 500 children from 4 to 60 months of age. The frequency of developmental delay was 8.6%, There were correlations between developmental delay and the child's age, birth order, mother's education, and father's education (*Ahmadipour, 2017*).

The family physician role is crucial in child development. Primary healthcare professionals are better placed than any other occupational group in terms of frequency of contact with individuals in society. These practitioners therefore play a key role in observing children's growth and development as well as educating mothers or caregivers about how to provide the optimum environment for their child's growth (*Choo et al., 2019*).