

## An Approach towards Promoting Iranian Caregivers' Knowledge on Early Childhood Development

Firouzeh Sajedi<sup>1</sup>, \*Elham Habibi<sup>2</sup>, Soheila Shahshahanipour<sup>1</sup>, Nikta Hatamizadeh<sup>1</sup>, Hosein Malek Afzali<sup>3</sup>

<sup>1</sup>Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran. <sup>2</sup>Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Deputy of Research and Technology, Ministry of Health and Medical Education, Tehran, Iran. <sup>3</sup>Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

### Abstract

**Background:** According to the World Health Organization (WHO), parents need to be informed about Early Childhood Development (ECD). Different methods of parents' education include group-based, face-to-face, book, booklet, web-based, technology-based, and mobile learning using laptops, tablets, and cell phones. Paying attention to caregivers' attitudes is the first step to their education. The objectives of this study were to determine parental education requirements and the best approach towards promoting caregivers' knowledge about ECD, from the perspective of the Iranian main child caregivers.

**Materials and Methods:** A qualitative approach with directional content analysis method was used. Participants were selected through purposive sampling. Thirty-one child-caregivers participated in 5 individual interviews and 5 focus group discussions (FGDs). Participants were parents and grandparents that had less than the 36-month child (grandchild), and kindergarten staffs. Four criteria namely: validity, transferability, reliability and verifiability were used to validate data.

**Results:** According to the perspective of participants, two main themes were requirements for parent education (educators, educational content, time, place), and approach to educate child caregivers (mobile learning, group and face-to-face education, electronic learning, media, physical resources), totally 98 sub-themes. Finally the best approach to educate child caregivers was a multi-model approach includes group or face-to-face education with mobile learning.

**Conclusion:** Participants suggested a multi-model approach based on traditional and modern technological methods, especially mobile learning (smartphone). They believed that the educational approach should be flexible and selectable, so caregivers can choose an appropriate individual method.

**Key Words:** Caregivers, Child development, Educational Model, Knowledge, Qualitative Study.

\*Please cite this article as: Sajedi F, Habibi E, Shahshahanipour S, Hatamizadeh N, Malek Afzali H. An Approach towards Promoting Iranian Caregivers' Knowledge on Early Childhood Development. Int J Pediatr 2018; 6(3): 7371-82. DOI: **10.22038/ijp.2017.27419.2364**

### \*Corresponding Author:

Elham Habibi, <sup>2</sup>Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Deputy of Research and Technology, Ministry of Health and Medical Education, Tehran, Iran.

Email: [hariri.shahram@gmail.com](mailto:hariri.shahram@gmail.com) AND [hariri@sina.tums.ac.ir](mailto:hariri@sina.tums.ac.ir)

Received date: Oct.10, 2017; Accepted date: Dec. 22, 2017

## 1- INTRODUCTION

According to the World Health Organization (WHO), all parents need to be informed about the norms and stages of Early Childhood Development (ECD) (1). Children's health has been considered as wealth of the community (1), and investing in early childhood can reduce substantial inequality impacts such as malnutrition and learning disabilities (2, 3). We have to invest on today's children because they are adults of tomorrow (4). Different societies will pay higher prices in the future for not paying attention to Early Childhood Development (ECD) (5). Since the prevalence of undetected developmental delay in Iranian children screening was reported 3.63% to 4.31% in different developmental domains (6) so early detection and early intervention is necessary (7). Studies have shown that parent interventions and education affect children's mental health, well-being, and promote parent-child relationship and attachment, and encourage reading books, playing and active learning. Opinions and attitudes of parents about their education is the first step to planning and determining their educational needs (8).

Parent education improves their knowledge and practice, to promote cognitive and social-emotional child development by creating a warm and loving environment (3, 9-12). It also promotes parent-child interaction (13). So, the first child's education is her/his parent's education (14). Jenkins and Handa (2017) believed that parent education is an important factor in early childhood development, for children under three years of age. Parents need to have enough knowledge, skill; time and support to care for children and other caregivers can help and support them (15). The key goal of parenting programs is to enhance parents' knowledge, attitudes and practices in relation to care for a child (16, 17). It should inform parents that increasing their

knowledge about ECD will change their skills and behavior towards their children (18). Optimal parenting includes a wide range of activities to ensure that children are cared for physically, cognitively, socially and emotionally; because these are key challenges in parents' ability to provide optimal care for their children, parenting programs often seek to improve one or more of these aspects of caregiving (19). Caregivers' education should be designed to enhance the quality of parenting, instead of increasing the quantity of child care. Different methods of parent education include group-based, booklet, face-to-face, home visit, book, web-based, technology-based, CD and videotape, etc. (20). Another new method is mobile learning by using laptops, tablets and cell phones. Group and face to face education are traditional approaches towards training parents on technologies (E-learning and mobile learning) that can empower them (21, 22). Paying attention to caregivers' attitudes and opinions about parenting is the first step in planning and designing the materials they need (23).

Although, the positive impact of parenting programs has always been discussed, there remains the question of, which content; and method of educational intervention are more favorable and useful to parents (24,25). Attractive educational programs for parents reduce their stress and increase their capability (26). Since Iranian parents need to be educated about ECD and there is any study on the method of education from the viewpoint of Iranian caregivers (26), so this study carry out to determine the requirements for parent education and the best approach towards promoting caregiving, especially parents' knowledge about ECD, from the perspective of Iranian parents and other main children caregivers. When the appropriate educational method is chosen, not only knowledge transfer will be performed well

done, but also interventions will be implemented consistently.

## 2- MATERIALS AND METHODS

A qualitative approach with directional content analysis method was used. A directional content analysis approach is used when there is incomplete theory or research on the phenomenon, and thus there is a need for further explanation. The qualitative study is a proven method for presenting the participants' experiences, views and needs. Individual interviews were conducted with grandparents to understand their point of view and experiences. Focus group discussions (FGDs) were conducted with parents and kindergarten staffs to understand their opinions, attitudes and experiences (28, 29). Participants that, Wanted to participate were selected from Public society through purposive sampling with consideration of maximum experience and diversity in Tehran (the capital of Iran) (30). Therefore a total of 31 child-caregivers as research samples participated in 5 individual interviews and 5 focus group discussions (FGDs).

Criteria for participants' inclusion in the study were as follows: Persian speaking, and mothers, fathers, grandmothers and grandfathers that had less than 36-month aged child or grandchild, and also kindergarten coaches and managers with at least three years of work experience. Participants' individual characteristics are presented in **Table.1**. Individual interviews and FGDs were used based on interview and focus group guides, which were arranged through literature review and expert opinion, after performing a pilot study. Two main questions were asked about Iranian caregivers' knowledge on ECD and appropriate method of teaching them; and there were also, several relevant questions. FGD and interview sessions lasted for 40 to 60 minutes after obtaining

consent from the participants. During the interviews and FGDs, the whole conversation was recorded on mp3 player by permission. In qualitative study, sample size depends on the data saturation; therefore FGDs and individual interviews were continued until to data saturation. It meaning of there is enough information and researcher doesn't gain additional new information (31). Individual interviews and FGDs continued until data saturation. Two additional interviews were conducted to ensure data saturation. The place of interviewees was selected according to the participants. Informed consents were received from all participants. In this research, data analysis was based on content analysis. Each interview and the FGD were considered as the analysis unit, and then notes were written and coded, and main themes of research were determined by finding simultaneous match between notes and recorded voices. This step was revised and peer check was done by researcher's colleagues in order to increase validity of findings. Four criteria namely validity, transferability, reliability and verifiability were used to validate data (32). The main researcher summarized findings of the discussion with participants at the end of each discussion section to validate and confirm data. Data collection and analysis method were carefully explained in order to obtain transferability.

Studies sought to intervene in continuous data relationship. Transferability was increased through evaluation of findings by two experts in the field of qualitative external check; and reliability and verifiability studies were also performed during analysis. This research was approved by the Ethics Committee of University of Social Welfare and Rehabilitation Sciences with the number IR.USWR.REC.1395.77. Respecting all ethical issues, participants had rights to withdraw from the research at any time.

**Table-1:** Description of demographic characterization of participants

Participants	Age range and mean (years)	Education		Numbers of participants	Method
		Diploma and Upper diploma	Lower diploma		
Mothers	24-38(31.4)	10	5	15	3 FGDs
Fathers	32-40(35.6)	4	1	5	1 FGD
Kindergarten trainer and manager	25-45(33.6)	6	0	6	1 FGD
Grandparents	55-75(62.25)	3	2	5	Individual Interview
Total		23	8	31	

FGDs: Focus Group Discussions.

### 3- RESULTS

Opinions, beliefs and perspectives of "parents", "grandparents" and "kindergarten staff" were in three main groups. All the participants believed that the Iranian child caregivers, particularly parents need to learn about ECD. Some of them claimed that this education on ECD and child upbringing should begin before and during pregnancy. They presented a variety of ways to improve knowledge. Their views about different educational methods in 3 main groups (parents, grandparents and Kindergarten staffs) were presented as follow:

#### 3-1. Parents perspectives

Parents (15 mothers and 5 fathers) believed that face-to-face and group education is two good ways to learn about child nurturing because they are interactional methods. So, parents can inform other parents about similar problems. While they considered educational classes as useful to parents, most of them believed that this education should be provided by pediatricians and psychologists. Few of the participants stated that other health providers such as nurses, midwives and family health experts are also suitable for teaching parents. Some mothers believed that attending a class is difficult and time-consuming, and

it would be better to have educated counselors in health care centers to counsel parents on child issues. They stated: "we must trust the educators". On the contrary, another mother believed that "*Educational classes should be continuous; periodic courses would be forgotten*". On the contrary, they said the limitations of this method are as follows: Need for financial and physical resources; need for scientific expert on ECD; spending time and money for holding and commuting by parents; being far from children during training hours; need to get help from another caregiver; and maybe lack of attractiveness of educator's lessons. Individual education on ECD by pediatricians was a favorite method for many participants because pediatricians visit children every month and can be reliable.

So parents could learn about early childhood interventions during child visit. On the other hand, parents stated that pediatricians do not talk with parents about ECD either due to concentration on diagnosis and treatment of illness or perhaps because of their inadequate time or information. However, two fathers suggested that "*in-service training courses of ECD could be helpful*", but mothers claimed that workplaces were not good places to learn about ECD. Half of the

mothers and some fathers stated that TV programs are important the same as other sources because almost every one watch TV and people rely on scientists and experts in educational programs. They stated that if such programs are broadcast continuously, they can be very useful". They said fathers like watching TV too, especially news. Sixty percent of mothers stated that "Friends and relatives are not trustworthy, so they should be directly taught by specialists on ECD issues". Parents believed that approximately all Iranian parents have smart mobile phones and they can use them easily, therefore smart mobile phones can be used for their education. According to states, virtual sources (websites, e-learning, mobile learning, etc.) can cover the public and they are available to a large number of people, and because educational messages are transmitted by experts to audience, they can be very effective and spread rapidly among people.

Also, parents pointed to physical resources for parents' education, these are: books, simple booklets, brochures and pamphlets, posters with text and pictures, educational CD, and charts of ECD stages based on age in children's vaccination card. According to them, limitations of these sources were as follows: book reading is not usual; impossibility of interaction and answering of questions; sometimes, lack of attractiveness of some physical sources. However, most participants stated that: *"Mothers do not have enough time to attend classes, so, simple, fluent and short books and booklets are helpful"*. They believed that mothers with little children do not have enough time to read, and fathers are also busy with their works. In general, it was believed that education through the distribution of books on ECD was not very effective, even if it was free. In addition, TV programs, advertising for educational classes, short educational films (10 minutes), newspapers or papers on the

web, and radio programs were other sources that participants mentioned as educational methods.

### **3-2. Grandparents perspectives**

Five grandparents believed that they have been playing an important role in the lives of their grandchildren. They love their grandchildren and play with them for hours and they care for them when parents are busy. They believed that they help parents to raise children. In addition, a grandmother stated that: *"educating grandmothers and even grandparents is important. Today, lots of mothers are employed and grandmothers take care of the children, so they spend many hours with the children and they need to have new knowledge on child nurturing"*. This group of participants stated that media, especially TV programs, and films are very effective in people's awareness. Grandparents like reading newspapers and magazines more than long educational books and they rely on educational TV programs on medical and psychological issues. They like watching TV more than educational classes and virtual training. Although, they were not too familiar with the virtual training, they thought mobile learning via smart phone was a good method to learn.

### **3-3. Kindergarten staffs' perspective (managers and trainers)**

Six kindergarten staffs stated that education on child nurturing is a very important subject and all the kindergarten staff need to learn about ECD. They believed that children spend a lot of hours in kindergartens, so coaches have an important role in their nurturing. They do not have enough time to read educational books. One kindergarten trainer stated that *"We are not so keen to attending educational classes, and this is either due to our culture, or high workload and lack of time"*. However they believed that two or three- day workshops or short courses

can be useful. They thought educational programs on TV can help them but magazines are not reliable. Sometimes, they use websites to learn about children's growth. Besides the above items, they suggested that using smart phones is a good way to educate the child caregivers. One of the participants stated that: *"The mobile educational program via smart phone is very attractive to the audience"*. On their opinion, disadvantages of media resources include non-continues nature of most of the educational programs and their high cost. In this regard, one of the kindergarten coaches stated that: *"We should consider the role and importance of father's presence and companionship in the promotion of child development in educating parents because his role is as important as a mother, and both parents should know the importance of parent interaction in child upbringing in order to achieve the desired outcome"*.

Based on content analysis of the results, there are 2 main themes included **Theme a:** Requirements for parent education and **Theme b:** Approaches to educate child caregivers and 98 sub-themes (The subthemes were brought in **Tables 2 and 3**).

**Theme a:** The main of requirements for parent education from perspective of participants included educators; educational content, time, and place are reported in **Table.2**. In a nutshell, different ways were presented to educate child caregivers. These methods included group and face-to-face education, physical resources, media, and use of virtual space. Most participants believed that the educational approach should be flexible and selectable, such that, each audience will be able to choose appropriate method. Face-to-face education was the most commonly mentioned educational method by majority of the participants.

**Theme b:** In general, participants discussed different approaches to educating caregivers and parents and mentioned their advantages and disadvantages. The priorities of approaches to educate child caregivers based on participants' views are presented in **Table.3**. Eventually, a multi model approach (combination of face-to-face and group education together with mobile learning through smart phone) was considered as the best approach to educate child caregivers on ECD of participants' views.

**Table-2:** Requirements for parent education from perspective of participants

Parental education requirements	
Educators*	<ul style="list-style-type: none"> <li>- They should be superior to other health providers.</li> <li>- They should have abilities to attract parents' trust.</li> <li>- They should have sufficient knowledge and experience.</li> <li>- They should be familiar with the public culture.</li> <li>- They should have abilities to answer parents' questions.</li> <li>- They should have simple, eloquent and attractive power of speech.</li> <li>- They should be patient.</li> </ul>
Educational content	<ul style="list-style-type: none"> <li>-It should be clear, helpful, attractive, simple, Practical, Comprehensible and brief.</li> <li>- It should be in accordance with the public culture and should motivate mothers.</li> <li>- It should be comprehensive, effective and applicable.</li> <li>- It should be based on parents` needs.</li> <li>- It should be based on developmental stage of child age.</li> </ul>
Time	<ul style="list-style-type: none"> <li>- Programs should be uninterrupted.</li> <li>- Classes should be monthly or fortnightly.</li> <li>- Each session should not last for more than an hour.</li> <li>- There should be a few numbers of in-person sessions as possible, and then virtual space should be used.</li> </ul>

	<ul style="list-style-type: none"> <li>- Education should start during the pregnancy.</li> <li>- Education should start before the pregnancy.</li> <li>- Duration of classes and their content should change according to children's age increase stages.</li> </ul>
Place	<ul style="list-style-type: none"> <li>- Distance should be proportional to house and workplace.</li> <li>- Facilities should be provided for attendance at classes according to numbers of participants (such as parking and child care places).</li> <li>- Public places such as community center, health centers, and parks in cooperation with municipalities, physicians' offices and clinics are proper places for educating parents.</li> </ul>

\* Educators can be included pediatricians, psychologists, family physicians and family health experts in health care centers.

**Table-3:** Different approaches to educate child caregivers based on priorities of participants' views

Priority	Approach to educate child caregivers	Strengths	Weaknesses
1	Multi-model approach*	Familiarity with educators and confidence in their statement; interaction and access to answers of questions; accessibility, attractiveness, repeated summary of content in educational sessions; uninterrupted education.	High cost; need for planning and management; need for the internet.
2	Mobile learning (via cell phones, laptops and tablets).	Access of the majority of people (smart mobile phones); training a large number of caregivers without space and time limits; attractiveness and user friendly content	Unreliable (lack of familiarity with educator); need for the internet; lack of direct interaction; possibility of forgetting the learned content; use of mobile in the presence of children as a behavioral model; rapid spread
3	Group and Face to Face Education (educational classes and workshop, individual visit and Consultant, and short course).	Interaction with educator; possibility of direct questions and answers, and use of questions and answers by other participants in educational session.	Time-consuming; far distance from education place; need for space facility and participants' welfare; interrupted sessions, need for scientific expert, financial and physical resources.
4	Electronic Learning (websites, CD, videotape)	No limitation of time; possibility of educating a lot of child caregivers	Need for personal computer; one-way education and lack of interaction with educators; low attractiveness; high cost of the Internet and use of education; need for computer skills
5	Media (TV, Radio, newspapers and magazines).	Public tool; attractiveness; increasing all social members' knowledge; scientists and experts invited in educational programs.	Too high costs to produce; lack of uninterrupted educational programs (non-continues); one-way and non-interactive education; and the impossibility of asking questions and giving answers.
6	Physical resources (book, Booklet, brochures and Pamphlets, Posters, pictures, charts and etc.).	Ability to review content; reliability due to the revealed identity of authors and publishers; in-service training courses;	Lack of interaction; impossibility of asking questions and giving answers; lack of public interest in the study; lack of public access; need for time due to long content of book; fatigue; lack of interest in continuation of study, lack of effectiveness.

\* Multi model approach included mobile learning (via cell phones or laptops and tablets) with group or face-to-face education.

#### 4- DISCUSSION

This study aimed to identify best approach towards educating caregivers on ECD from caregivers' perspective. According to the findings of the study, the best approach to promote child caregivers knowledge was a combination approach including: individual, face to face and group education together with virtual education, especially mobile learning. Caregivers believed that the Iranian parents did not have enough knowledge on ECD and they did not know how to promote ECD. In this regard, researchers believe that parent knowledge is an intermediating factor which promotes child's socio-emotional development through the creation of a warm and affectionate environment, and early interventions effects on child learning, behavior and health in the child's future (12, 33, 34). Therefore, educational programs for parents lead to increase in their knowledge and change in behavior (9). Given that fathers play important roles in upbringing of children, their education is also important (35, 36).

According to participants' opinion in this study, face-to-face education can be one of the educational methods for Iranian parents on ECD, but this method cannot be solely used during successive sessions. Other studies also consider this method as one of the most common parental education methods in which parents learn parenting skills (37). Despite the fact that this method is very common, according to Bert et al., it is not easy for many parents to participate in educational programs due to socio-economic constraints, unemployment, far distance, family tension and single parenthood (38). Confirming results of the present study, Koerting et al., pointed out other problems in attendance program which are the high cost of parenting programs, lack of childcare facilities and transportation facilities, and lack of proper parking for

participation (39). Most parents participated in the current study, especially all mothers, considered pediatricians as the most trusted individuals to receive ECD education from during visits at their offices. Researchers also believe that pediatricians play important roles in children nutrition and involvement during the first 1,000 days of life (40), and they play these roles through interaction with parents and relying on parental ideas and knowledge on ECD in the diagnosis of childhood developmental abnormalities (41-43). Based on the results of the present study, the Iranian grandparents play important roles in child rearing according to the culture of Iran, and grandparents regularly take care of their grandchildren in some other countries; therefore they also need to be educated on ECD. It is estimated that approximately 30% of children under the age of 5 receive part of their care from grandparents in UK (44).

Del Boca et al. stated that grandparents have the same effect on children nurturing as parents (45). While Gilmer et al., reported that parents were worried about the fatigue of attending workshop, kindergarten staff who participant in the present study stated that workshop was favorable as compared to other methods (46). Regarding the use of physical resources, participants mentioned resources such as book, booklet, pamphlet and educational posters which could be helpful in parental education and promotion of ECD in children. In this regard, Farris et al. compared the impact of three educational methods including booklet, booklet with face-to-face education, and booklet with education via the website, and concluded that parental education programs would raise parents' knowledge, follow it, and promote child development. They said despite the fact that any intervention can affect mother's well-being and child development, the booklet was not solely effective, while



other two methods were more effective (20). Most participants, especially mothers and kindergartens staff reported virtual education, in particular, mobile phone education, as a complementary method of group education and a good way to educate parents and other caregivers on ECD. In this regard, Kuznekoff et al. argued that smart cell phones have great attractiveness among users (21); and learning through this way is more common than other e-learning methods such as e-books and personal computers (22). Mass media such as television, radio, various newspapers and magazines (paper and electronic) are presented as other ways for parental education in this study. Evans believed media has always been an important tool in raising parents' knowledge on childhood. With regard to the history of ECD education for parents through television, a television program which began broadcasting in Chile in 1979 can be mentioned (47).

Abdullahi et al. studied nutrition education from mothers and children's perspective in Iran and stated that most of them considered television as the best means of public education. In the present study, some mothers and all grandparents also considered television as the most important factor in transferring knowledge among other media and believed that educational programs of television are not continuing appropriate increase at children's age. However, most participants except two grandparents agreed that application of virtual could be effective in educating caregivers on ECD (48). Breitenstein et al. reported that electronic equipment with new technology is available to all; hence, such education for parents will provide more access and sustainability of their interventions (49). Also, parents want to access and receive information by using the internet (46). In general, a multidisciplinary method of attendance group education along with

mobile learning through mobile phones and booklet as a complementary education was the final approved method by participants for educating parents and other caregivers about ECD. They believed that education should begin by attending classes, and then interactively continue on cellphones. It should be noted that results of other studies do not consider mobile phones as an alternative to traditional learning, but they introduced it as a supportive technology which can enhance the effectiveness of other learning methods in individuals (50, 51). The most helpful parenting programs are designed by the use of different sources such as media, posters and cards (52). In confirmation of the current study's approach, Glascoe and Trimm (53) pointed to a multi-media method for parent education too, which they believed could allow the family to repeat and learn about child care.

## 5- CONCLUSION

According to the results, the Iranian parents and other main child caregivers had insufficient knowledge on ECD and they needed to be trained. Based on participants opinion it is necessary to pay attention to requirements for parent education such as educators, educational content, time and place. Even though they discussed different ways to educate caregivers (face to face and group education, use of physical resources, use of virtual space and mass media), a combination of attendance group education with education through mobile phone was the best way to educate Iranian caregivers. Education via smart phone is a kind of mobile learning which a complementary method to attendance education is.

This approach can be attractive and promote caregivers' knowledge because they choose their own appropriate method to receive adequate information on ECD. Accordingly, it is good for policymakers to provide infrastructure for educating all

child caregivers, especially parents, on early interventions, to promote child development.

## 6- CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## 7- ACKNOWLEDGEMENT

The authors express their special gratitude to a number of people who kindly provided their insightful and invaluable advice and support throughout all the stages of this research. This study is part of a research-based doctoral dissertation in Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Iran. The authors also acknowledge all the staff in this center and university without whose cooperation, this process could not have been fulfilled.

## 8- REFERENCES

1. Cummins C, McMaster C. Child mental and emotional health a review of evidence. 2006. [homepage on the Internet]. Available at: <http://hse.openrepository.com>.
2. Chan M, Lake A, Hansen K. The early years: silent emergency or unique opportunity? *Lancet*. 2017;389(10064):11-3.
3. Engle PL, Fernald LC, Alderman H, Behrman J, O'Gara C, Yousafzai A, et al. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet*. 2011;378(9799):1339-53.
4. Daelmans B, Darmstadt GL, Lombardi J, Black MM, Britto PR, Lye S, et al. Early childhood development: the foundation of sustainable development. *Lancet*. 2017;389(10064):9-11.
5. Richter LM, Daelmans B, Lombardi J, Heymann J, Boo FL, Behrman JR, et al. Investing in the foundation of sustainable development: pathways to scale up for early childhood development. *Lancet*. 2017;389(10064):103-18.
6. Sajedi F, Vameghi R, Kraskian Mujembari A. Prevalence of undetected developmental delays in Iranian children. *Child Care Health Dev*. 2014;40(3):379-88.
7. R Vameghi MD M. Motor developmental delay in 7500 Iranian infants: Prevalence and risk factors. *Iran J Child Neurol*. 2009;3(3):43-50.
8. Kok R, Thijssen S, Bakermans-Kranenburg MJ, Jaddoe VW, Verhulst FC, White T, et al. Normal variation in early parental sensitivity predicts child structural brain development. *J Am Acad Child Adolesc Psychiatry*. 2015;54(10):824-31.e1.
9. Cowan PA, Cowan CP. What an intervention design reveals about how parents affect their children's academic achievement and behavior problems. 2002. [homepage on the Internet]. Available at: <http://psycnet.apa.org/record/2001-05103-005>.
10. Rowe ML, Denmark N, Harden BJ, Stapleton LM. The Role of Parent Education and Parenting Knowledge in Children's Language and Literacy Skills among White, Black, and Latino Families. *Infant Child Dev*. 2016;25(2):198-220.
11. Bann CM, Wallander JL, Do B, Thorsten V, Pasha O, Biasini FJ, et al. Home-based early intervention and the influence of family resources on cognitive development. *Pediatrics*. 2016:peds. 2015-3766.
12. Kashaninia Z, Sajedi F, Rahgozar M, Noghabi FA. The effect of kangaroo care on behavioral responses to pain of an intramuscular injection in neonates. *J Soc Pediatr Nurs*. 2008;13(4):275-80.
13. National Academies of Sciences E, Medicine. Parenting Matters: Supporting Parents of Children Ages 0-8. Washington, DC: The National Academies Press. doi: 10.17226/21868; 2016, P:6-7.
14. Kilic C, Civek I, Bulut M. Parents Education In England. *Adved 15: International Conference on Advances in Education and Social Sciences*. 2015:495-504.
15. Jenkins JM, Handa S. Parenting skills and early childhood development: production function estimates from longitudinal data.

Review of Economics of the Household. 2017;1-27.

16. Shannon LC. Best practices for parent education: Programs seeking to prevent child abuse. Extension Associate: Children, Youth, and Families North Carolina State University Cooperative Extension Service. 2003. [homepage on the Internet]. Available at: <https://www.npen.org/pdfs/BestPra.pdf>
17. Piotrowska PJ, Tully L, Lenroot R, Kimonis E, Hawes D, Moul C, et al. Mothers, Fathers, and Parental Systems: A Conceptual Model of Parental Engagement in Programmes for Child Mental Health-Connect, Attend, Participate, Enact (CAPE). *Clin Child Fam Psychol Rev*. 2017;20(2):146-61.
18. Okagaki L, Bingham GE. Parents' social cognitions and their parenting behaviors. *Parenting: An ecological perspective*. 2nd ed., Edited by: Luster, T. and Okagaki, L. 2005;2:3-33.
19. Al-Hassan SM, Lansford JE. Evaluation of the better parenting programme in Jordan. *Early Child Dev Care*. 2011;181(5):587-98.
20. Farris JR, Bert SSC, Nicholson JS, Glass K, Borkowski JG. Effective intervention programming: Improving maternal adjustment through parent education. *Adm Policy Ment Health*. 2013;40(3):211-23.
21. Kuznekoff JH, Munz S, Titsworth S. Mobile phones in the classroom: Examining the effects of texting, Twitter, and message content on student learning. *Communication Education*. 2015;64(3):344-65.
22. Tutty JI, Martin F. Effects of Practice Type in the Here and Now Mobile Learning Environment. *i-Manager's Journal of Educational Technology*. 2014;11(2):17.
23. Finders JK, Díaz G, Geldhof GJ, Sektnan M, Rennekamp D. The impact of parenting education on parent and child behaviors: Moderators by income and ethnicity. *Child Youth Serv Rev*. 2016;71:199-209.
24. Lundahl B, Risser HJ, Lovejoy MC. A meta-analysis of parent training: Moderators and follow-up effects. *Clin Psychol Rev*. 2006;26(1):86-104.
25. Reyno SM, McGrath PJ. Predictors of parent training efficacy for child externalizing behavior problems—a meta-analytic review. *J Child Psychol Psychiatry*. 2006;47(1):99-111.
26. Schultz TR, Schmidt CT, Stichter JP. A review of parent education programs for parents of children with autism spectrum disorders. *Focus Autism Other Dev Disabl*. 2011;26(2):96-104.
27. Habibi E, Sajedi F, Malek Afzali H, Hatamizadeh N, Shahshahanipour S, Glascoe FP. Early Childhood Development and Iranian Parents' Knowledge: A Qualitative Study. *Int J Prev Med*. 2017;1(1):Int J Prev Med 2017, 8: 84.
28. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277-88.
29. Fossey E, Harvey C, McDermott F, Davidson L. Understanding and evaluating qualitative research. *Aust N Z J Psychiatry*. 2002;36(6):717-32.
30. Polkinghorne DE. Language and meaning: Data collection in qualitative research. *J Couns Psychol*. 2005;52(2):137.
31. Fusch PI, Ness LR. Are we there yet? Data saturation in qualitative research. *Qual Rep*. 2015;20(9):1408-16.
32. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;24(2):105-12.
33. Huang KY, Caughy MOB, Genevro JL, Miller TL. Maternal knowledge of child development and quality of parenting among White, African-American and Hispanic mothers. *J Appl Dev Psychol*. 2005;26(2):149-70.
34. Scarzello D, Arace A, Prino LE. Parental practices of Italian mothers and fathers during early infancy: The role of knowledge about parenting and child development. *Infant Behav Dev*. 2016;44:133-43.
35. Shonkoff JP. Changing the narrative for early childhood investment. *JAMA pediatr*. 2014;168(2):105-6.

36. Lamb ME. The role of the father in child development. 4nd ed. New Jersey: John Wiley & Sons; 2004. P:308-309
37. Dore MM, Lee JM. The role of parent training with abusive and neglectful parents. *Fam Relat.* 1999;48(3):313-25.
38. Bert SC, Farris JR, Borkowski JG. Parent Training: Implementation Strategies for Adventures in Parenting. *J Prim Prev.* 2008; 29(3):243-61.
39. Koerting J, Smith E, Knowles M, Latter S, Elsey H, McCann D, et al. Barriers to, and facilitators of, parenting programmes for childhood behaviour problems: a qualitative synthesis of studies of parents' and professionals' perceptions. *Eur Child Adolesc Psychiatry.* 2013;22(11):653-70.
40. Cunha A, Leite Á, Almeida I. The pediatrician's role in the first thousand days of the child: the pursuit of healthy nutrition and development. *J Pediatr.* 2014;91(6 Suppl 1):S44-51.
41. Glascoe FP, Dworkin PH. The Role of Parents in the Detection of Developmental and Behavioral-Problems. *Pediatrics.* 1995;95(6):829-36.
42. Vameghi R, Sajedi F, Mojembari AK, Habiollahi A, Lornezhad HR, Delavar B. Cross-cultural adaptation, validation and standardization of Ages and Stages Questionnaire (ASQ) in Iranian children. *Iran J Public Health.* 2013; 42(5):522.
43. Vameghi R, Hatamizadeh N, Sajedi F, Shahshahanipoor S, Kazemnejad A. Production of a native developmental screening test: the Iranian experience. *Child Care Health Dev.* 2010;36(3):340-5.
44. Gray A. The changing availability of grandparents as carers and its implications for childcare policy in the UK. *J Soc Policy.* 2005;34(4):557-77.
45. Del Boca D, Piazzalunga D, Pronzato C. The role of grandparenting in early childcare and child outcomes. *Rev Econ Househ.* 2017(4):1-36.
46. Gilmer C, Buchan JL, Letourneau N, Bennett CT, Shanker SG, Fenwick A, et al. Parent education interventions designed to support the transition to parenthood: A realist review. *Int J Nurs Stud.* 2016;59:118-33.
47. Evans JL. Parenting programmes: an important ECD intervention strategy. Paper commissioned for the EFA Global Monitoring Report. 2007. Paris:UNESCO [homepage on the Internet]. Available at: [http://www.ecdgroup.com/docs/lib\\_003871417.pdf](http://www.ecdgroup.com/docs/lib_003871417.pdf)
48. Abdullahi R, Abtahi M, Amini M, dadkhah P, Zoghi T, Eslami Amirabadi M, et al. Nutrition Education: as Perceived by School Children and Their Mothers(persian). *PAYESH.* 2006;5(3):221-8.
49. Breitenstein SM, Gross D, Christophersen R. Digital Delivery Methods of Parenting Training Interventions: A Systematic Review. *Worldviews Evid Based Nurs.* 2014;11(3):168-76.
50. Lac M, Sukunesan S, Cain A, Vasa R, Mouzakis K, editors. Mobile learning in corporate businesses: A review of literature focusing on journal articles. 25th Australasian Conference on Information Systems, Auckland University of Technology, Auckland, New Zealand, 8th-10th December 2014.
51. Wigley A. Considering mobile learning? A case study from Jaguar Land Rover. *Development and Learning in Organizations: an international journal.* 2013 21;27(4):12-4.
52. Britto PR, Lye SJ, Proulx K, Yousafzai AK, Matthews SG, Vaivada T, et al. Nurturing care: promoting early childhood development. *Lancet.* 2017;389(10064):91-102.
53. Glascoe FP, Trimm F. Brief approaches to developmental-behavioral promotion in primary care: updates on methods and technology. *Pediatrics.* 2014; 13(5): 884.