

## Using Social Network of TELEGRAM for Education on Continued Breastfeeding and Complementary Feeding of Children among Mothers: a Successful Experience from Iran

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### Abstract

**Background:** Distance education for mothers with suckling babies can have a high effect and more proponents due to short time of such mothers as well as other problems like bringing infant with themselves. Authors of this research have shared an experience on application of social network of Telegram for educational intervention in field of continued breast feeding and complementary feeding of children among Iranian women.

**Materials and Methods:** In this research, social network of Telegram was employed to provide teachings associated with continued breastfeeding and complementary feeding of children to mothers based on the model of Center for Diseases Control of USA (CDC). 90 members, out of 125 mothers who were informed, became member of Telegram group voluntary with informed consent, namely that the participation rate was 72%. The Telegram group called "Mother's love - Mother's milk" was designed on August 2016 and has been active for 6 months until this date. The group has been active under management of an experienced physician and consultation with a pharmacist.

**Results:** Participants of this research reported cell phone, internet, physician, books, and journals as the most-used sources, respectively, to access to information about breast feeding and health of their children. Only five mother of group-member mothers were uneducated or had elementary education level. Also, it was determined that the higher percentage of women who joined Telegram group were housewives compared with the group who had no tendency to join group. 100% of members evaluated membership in Telegram group and subjects related to complementary feeding beneficial and 39 of 41 (95%) participants in an E-survey, were satisfied with learning, and 35 members (85.4%) were satisfied with teaching.

**Conclusion:** This study highlights the importance of social networks as potential educational field. Usage of this media, particularly among women groups under specific circumstance of pregnancy, can be beneficial.

**Key Words:** Social Networks, TELEGRAM, Education, Breast Feeding.

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## 1- INTRODUCTION

Education in scope related to health has been changing over the current years, so that the teaching approach has been replaced with learning approach and this trend has been increasingly originated from increased access to notification and communicational technologies via internet networks. The increasing growth of dynamic services and communicational tools has been called "WEB 2.0" or social networking revolution over current 5 years. This revolution prepared the field for education and cooperation between people from same level. Moreover, educational science progress considers learning issue through participation instead of learning through learning. According to new learning approaches, learners are individuals involved in an activity, so that this situation makes them learn and perform in such situation. This learning method, which is called issue-oriented, is focused on learner. This method not only transfers knowledge explicitly but also transfers implicit knowledge that consists of transferring experiences, measurements, and reactions of that situation through interaction and cooperation between individuals (1).

Social networks are a type of internet websites in which, individuals, groups, and organizations gather together based on one or more common specifications and share their information, subjects and contexts (2). If social networks were used as an educational method they would bring creativity and inter personal relationship strength (3). According to the last ranking report of social networks in Statista, social network of Facebook has 1.7 billion members per month and other networks including What's App, Facebook messenger, QQ, WeChat, Instagram, etc. are at next ranks, respectively. Social network of Telegram is at 21 ranks among social networks and has 100 million active users per month (4). Usage of social

networks has been increasingly growing in the world (3). According to an Article quoted from "E-marketer" website, the number of social networks' users increased from 1.1 billion members to 1.4 billion during 2011-2014 and the most increasing level has been in Middle East countries, Africa, Asia, and Oceania (4). Increasing use of internet in Iran is very high so that Iranian users has the fifth rank in using browsing engine of Google that is the first widely used website of the world. In addition to Google, the other international websites used by Iranian users are as follows: Yahoo with rank 4, Wikipedia with rank 5, Blogfa with rank 6, Instagram with rank 9, and Telegram with rank 14. Although Telegram is the 14<sup>th</sup> popular site among Iranians, this site has the rank 439 based on world ranking in terms of user number. Countries including Italy, Russia, Spain, and USA have the largest number of Telegram users after Iran (5). There have been more than 100 thousands Iranian channels via Telegram and more than one million and 200 thousand channels are created in Telegram per day by Iranian users (6).

Educational method is one of the most important factor in education. Choosing the method with active participation of learners is now one the important principles of education in health care and plays a significant role in educational planning (7). On the other hand the educational media has the major role in educating and creating positive beliefs in the society. Education and spreading information in the society are the other factors that effect on public attitude toward breastfeeding by society encouragement (8). There is an obvious relationship between mother's knowledge and her attitude to breastfeeding and education is the only way to raise awareness (9). It is recommended to make more efforts to improve the level of knowledge and attitude of mothers toward the

breastfeeding (10). Traditional method of education without using social networks is usually teacher-oriented, non-interactive and unilateral method (11). Social interaction is one of the key properties of social networks, so that usage of them has been increased in field of health promotion. Social networks develop communications through social interaction leading to pressure to create positive or negative effect (12). Usage of social networks would increase cooperation between similar people, expand communications and increase complementary learning (13).

For instance, peer education has been approved in an article as an effective method in teaching mothers in field of children feeding. In this Article, 75% of mothers were interested in obtaining information from a homologous mother and 65% of mothers were interested in teaching other mothers as peers. This paper has mentioned social isolation of mothers with children younger than 2 years old so that when they join parents' network as a supportive network, social connection will be created and a field is prepared for information exchange and peer education (12). Peer education using social networks would increase fundamental skills of learning and though independency; in this regard, it would be possible to reject responses and questions using Internet through involvement of members in active group discussions (14).

In researches conducted by Moorhead et al. 7 main applications of social networks have recognized in health communications. These applications include; 1) providing health information in different situations, 2) responding medical questions, 3) facilitating the negotiation between patients and physician, 4) collecting experiences and perspectives of patients to apply them in health affairs, 5) teaching health and promoting health, 6) reducing stigmas, and 7) providing online

consultations. Some of advantages of social media include increased interaction with others, social and emotional cooperation and support, and ability to share subjects applied in this research. Some other benefits of social media consist of increased access of individuals regardless of age, education, race, and living place (15). Social media can make it possible for some people to access to health information while traditional methods do not prepare such access for them. In another study, benefits of social networks have been named as follows: implementing educational programs, facilitating supportive communications, formation of individuals' identity, socialization, promotion of communications between individuals and promotion of ownership sense and self-esteem. Social networks also prepare the field to access to numerous audiences in a specific field (3). Education through social networks prepares the field to collect audiences with different tastes; in this regard, the audience who is interested in written educational materials besides the audience who is interested in peer education can use the channel.

On the other hand, social network would make it possible to receive and response at the same time so that the interest of learner is evaluated; hence, this method has the higher efficiency if it was mixed with other traditional methods of education (11). Social networks can better work if they are merged in a communicational strategy to support general and specific goals (17). Social networks will be more effective and lead to higher social support within network approaches if group members are familiar with each other having a common specific characteristics. One of function of social networks is negotiation between group members as well as encouraging them to behave in a specific manner providing encouraging responses to a specific behavior so that

self-efficacy of network members will be increased (17). Social networks can effect on behavior of persons through influencing on individuals' attitude (18, 19) and social impact on network members. Social publication through social networks is another specification of these networks (17). A study was conducted by social media in scope of health in 2012; there were 73 articles conducted in considered field of this study; of that, 43 articles were published in USA and only one article was written considering average and low-income countries (Haiti). Social network of Facebook was more applied at these studies. Majority of these articles were cross-sectional and only 5 articles among them consisted of a designed intervention to examine its result (20).

Internet-concentrated interventions to train postpartum mothers were examined in various countries such as Japan, Sweden, and Korea. Some teachings have been defined in Korea using a social network for postpartum mothers. This method is considered as an effective method to eliminate health problems of children through teaching (21). Search for health information on smart phones, leading to health promotion, by asking questions about the health of the child and take the responses by other members and the Head of the group. This method also opens the door to a two-way communication (22). In this paper as citing several papers as noted that Internet resources search for health information mostly has done by women and by people with a higher education level. TV, family and friends, literature and the internet, hospital health care workers were introduced as the source of health information and this result is the same as another paper (20). Distance education for mothers who have infant can be highly effective and have more audiences due to short time of such mothers and problem of bringing the child to class (20).

Authors of this research have shared an experience on application of social network of Telegram in an educational intervention in field of continued breastfeeding and complementary feeding of children among Iranian women. Various aspects of this experience can be helpful and effective for readers to use social networks more effectively in field of health issues.

## **2- MATERIALS AND METHODS**

Social network of Telegram is the most popular social network in Iran; hence, Telegram was used to provide mothers living in Karaj city with teachings related to continued feeding and complementary feeding of infant. The model presented by Center for Diseases Control and prevention (CDC) of USA was employed to apply social networks in scope of health. It has been recommended in this model to pursue 11 steps to communicate with audiences and determined strategies related to audience and media (25). These steps were considered in present plan as follows:

### **2-1. Determining Target Audience**

Audiences for this training program chosen from breastfeeding mothers who had 2-month babies and referred to health centers in Karaj city, Iran; in this way these mothers were informed about the training group and asked to announce their interest via Short Message Service (SMS) by cellphone.

### **2-2. Determining Specific Goals**

The purpose of this program not only was transferring educational subjects but also was encouraging these mothers to breastfeeding persistency as well as interacting with each other and participating in information exchange. Accordingly, communicational method was considered during group formation because the relationship was unilateral if a channel would be created.

### **2-3. Determining Communicational Needs of Audience**

The questions of mothers were answered by a physician for 2 hours per afternoon and pharmaceutical questions were asked from a pharmacist.

### **2-4. Merging with a General Purpose**

The final purpose of program is to protect and promote child health through breastfeeding persistency from 6 months to 1 year.

### **2-5. Design of Message**

The name of group "Mother's love-Mother's milk" indicates the main message of group as well as the considered prospect of program.

### **2-8. Determining Doable Activities during Communication Using Group Rules**

#### **Group Rules:**

1. Fill out breastfeeding questionnaire at 6-month age of your baby besides completing this questionnaire when your baby is at age of 9 and 12 months.
2. Share subjects related to children health via group.
3. Your questions related to your child health will be answered at afternoon per daily.
4. Mothers should share information that is valid and reliable scientifically.

### **2-9. Determining Key Collaborators of Group besides their Roles and Responsibilities**

In create Telegram group, a physician collaborated who had work experience in scope of health education and health promotion with more than 20-years' experience in field of breastfeeding of child. Also, a pharmacist cooperated to complete required information in field of pharmaceutical questions. One of academic faculty members with expertise in field of hygiene training and health promotion became the group member to supervise the site silently.

### **2-10. Definition of Success in Evaluation**

Success in goal achieving was defined and its evaluation was considered so that some

### **2-6. Providing References and Capacities**

The applied references for breastfeeding mothers were approved by Health Ministry of Iran and mothers were asked to mention the references when exchanging information considering validity of reference.

### **2-7. Identifying Capacities of Social Network**

Capacities of Telegram including capability of writing, sending image, video, voice message, etc. were explained to mothers despite their familiarities with such capacity.

success indexes were considered including participation using daily messages, remaining level of members in group, opinion of individuals about such group membership, network subjects, and describing experience by members about the subject.

### **2-11. Evaluation**

To quantitative evaluation of group activity, some criteria were considered including number of members, number of shared media, activity duration per day, number of training messages shared by mothers, the average time between shared messages and average time between a question asked by a mother and the answer given by others. To qualitative evaluation,

some of mothers, group member mothers, were surveyed and 9 questions were asked.

### 3- RESULTS

Membership in Telegram group was suggested to 125 mothers in educational meetings which was held in health centers. These mothers had 6-month baby had referred to healthcare center to receive the 6-month vaccine. These members became familiar with Telegram group admin, a

physician with experience in scope of hygiene training and health promotion, during educational meeting and received a phone number to be the member of Telegram group voluntary.

Brief demographic information of mothers was prepared after educational meeting. Telegram group was created on August 24, 2016 (Figure.1).

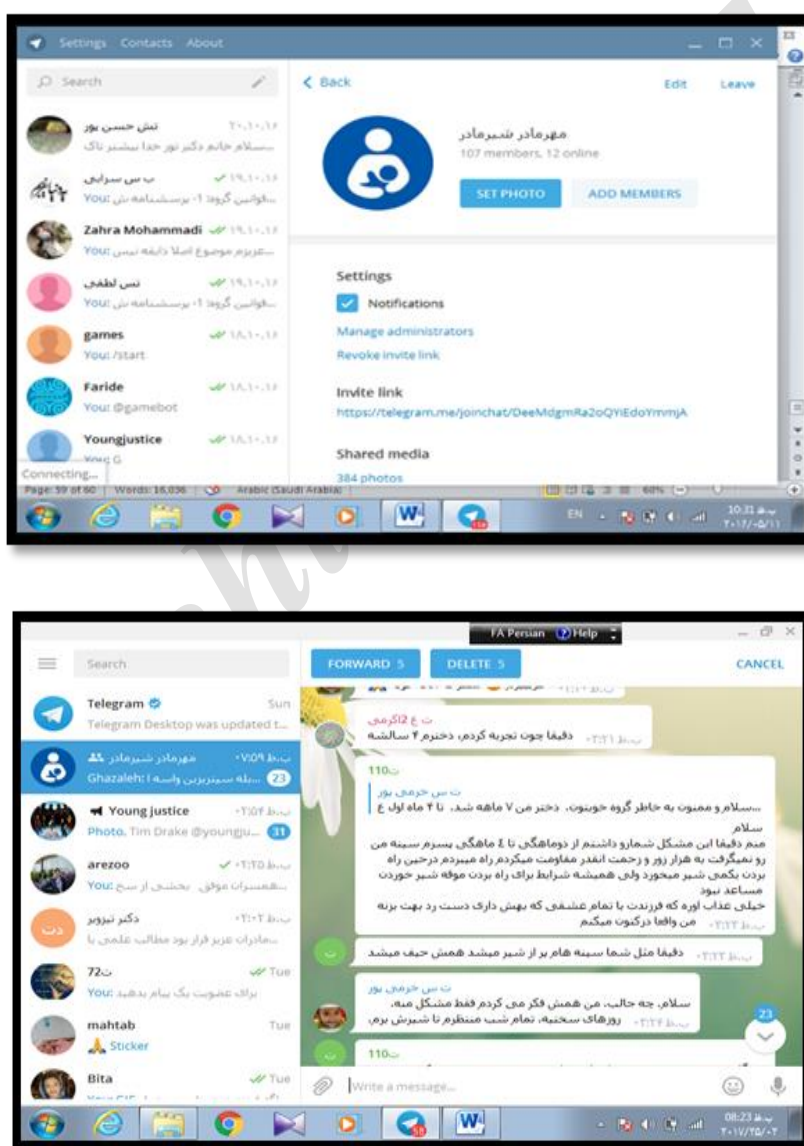


Fig.1: Two pages of telegram group which depicts the number of members and members' messages

90 members out of 125 members, who were informed, became the member of Telegram group voluntarily, in other words the participation rate was 72%. Of course 7 members left the group during different time intervals. Demographic characteristics of members can be seen in **Table.1**. The average age of mothers who were the member of Telegram group was  $30.9 \pm 4.94$  years and the age of mothers who were not the members of Telegram group, was  $29.09 \pm 6.23$  years that there was not any significant difference between them. At first in educational meeting only 36 (28.8%) members introduced internet as the reference to receive information about child breastfeeding, but continuing with creating the telegram group and invite the mothers 72% of them began to use this social network as a new way of learning. In this Telegram group. As can be seen in **Table.1**, mothers were examined in terms of age, childbirth type, gender of child, rank of child, job of mother and father. Also, the previous use of internet among mothers to obtain information related to

their child health was examined. In **Table.2**, education level of mothers who became the member of group was compared with mothers who did not accept to be the member of group. Also, the job of mothers of these two groups was compared. According to the findings obtained from message sending trend, this trend was only quitted between 2:00 and 6:00 AM. In some hours, a message was sent per minute. The average time gap between a question and answer was 20 minutes. A number of group members had more activity and shared 89 messages per day averagely. 15-day report of group activity can be seen in **Table.3**.

Also, type of messages shared via group can be seen in **Table.4**. After 3 months, online questionnaire based on Likert scale was distributed among participants and 41 mothers out of 84 mothers responded the questionnaire (response rate: 48.9%). The data obtained from this survey was analyzed using Survey Tool Software (**Table.5**).

**Table-1:** Demographic characteristics of mothers in Telegram group of "Mehr-e-Madar – Shir-e-Madar"\*

Variables	Sub-group	Number	Percent
Delivery type	Normal	27	30.7
	Cesarean	59	67.0
Child Gender	Male	36	40.9
	Female	50	58.1
Number of Child	One	40	45.5
	Two	35	39.8
	Three	12	13.6
Husband Literacy	Illiterate	6	5.0
	Primary	4	4.5
	Secondary	43	48.8
	University	38	43.2
Mother's Literacy	Illiterate	1	1.1
	Primary	1	1.1
	Secondary	37	42.1
	University	47	53.4
Job Status	Housewife	64	72.7
	Occupied	18	20.4

Child Health-related Information Source	Radio and TV	11	14.7
	Physician	28	36.8
	Health workers	11	14.5
	Book and Magazine	17	22.4
	Mobile and Internet	26	34.2
	Others	5	6.6

\*This Persian Logo means: "Mother's Love – Mother's Milk".

**Table-2:** Literacy and job Status in member and non-member mothers

Variables	Sub-group	Number(percent)		P-value
		Non-members	Members	
Literacy Status	Diploma or less	23 (63.9)	39 (45.3)	0.062
	Academic	13 (36.1)	47 (54.7)	
Job Status	Housewife	28 (84.8)	64 (78)	0.41
	Occupied	5 (15.2)	18 (22)	

**Table-3:** Group activity report in 15-days periods

Date		Message Number in 24 Hours	Researcher-Delivered Message Number
Wednesday	Aug. 24	29	16
Thursday	Sep. 8	19	2
Friday	Sep. 23	53	19
Saturday	Oct. 8	104	14
Sunday	Oct. 23	250	2
Monday	Nov. 7	97	13
Tuesday	Nov. 22	78	13
Wednesday	Dec. 7	70	9
Thursday	Dec. 22	99	12
Friday	Jan. 6	69	9
Saturday	Jan. 21	73	11
Sunday	Feb. 5	95	7
Mean		86.33	10.58

**Table-4:** Type of all shared messages in network

Message Type	Number
Image	1126
Film	104
Audio File	18
Websites Address	403



**Table-5:** Participants' Point of views about their Membership in Telegram Group of "Mehr-e-Madar – Shir-e-Madar" Using Online Survey

Questions	Negative comment	No comment	Positive comment
1. Membership in Telegram group was useful for me	0	0	40
2. Subjects related to breastfeeding was useful for me	0	3	38
3. Subjects related to complementary feeding was useful for me	0	0	40
4. This method was more useful for me than educational classes of clinic	0	4	37
5. I had used Telegram group for training before	13	8	20
6. Advices of other mothers helped me with my baby feeding	0	2	39
7. I felt happy when other mothers used my advices	35	6	0
8. In my opinion, application of Telegram group is useful for health education	0	0	40

## 5- DISCUSSION

This study was conducted to examine application of social networks to transfer health matters. Age average of group members was more than 30 that is matched with average age of 18-34 examined in CDC study (23). Participants in this study mentioned cell phone, internet, physician, books, and Articles, respectively as the most references used to receive information about breastfeeding and child health, so that these references are somewhat matched with references mentioned in other studies. For instance, 73% of mothers used internet in a study and 66% used internet to obtain information related to their child health in another study.

Also, studied members announced that they received their information 71% from physician, 68% from TV, 63% from friends and relatives, 51% from newspaper and journal, and 40% from radio. In this qualitative research, women mentioned browsing engines and social networks as references to receive information in field of health (21). In this regard, the strength point is teaching required subjects to mothers by a physician through social network of Telegram that is the most

popular network among Iranian people. However, since use of traditional methods besides social networks (12) is an important factor to increase effect of each of these methods in education and since validity of teacher is considered as the key factor in learning, the physician first was present among mothers and then suggested mothers to be the member of Telegram group in order to receive more information about breastfeeding and children health besides providing educational subjects.

Trust of group members in validity of subjects was seen in this research and reports given by majority of mother indicate this fact. However, in another study conducted on women, although they used social media to receive health information, they did not evaluate this information valid, because anybody could share this information via these networks in their opinion (21). Study and comparison of education level of mothers who accepted researcher's invitation to participate in Telegram group and those who did not accept this invitation indicated that illiteracy and elementary education was less seen among group member mothers. This finding is in line with results obtained from another study (24). In

general, education level among social network and smart phone users is more can independently affect use of social networks through effecting economic situation (12), so that job status was compared between mothers who were members of group and those mother who were not and it was determined that the more percentage of members of Telegram group were housewives compared to the group members who had no tendency to participate in Telegram group. It might be because of more free time of housewife mothers compared with employed mothers. However, use of cell phone is an exceptional situation to train mothers in home without need of leaving home. According to the responses of mothers to survey questions, majority of them approved usefulness of this method compared to training classes in clinic. This indicates those individuals who cannot be present in society, to be benefited from social support and training classes can be provided with social supports, human communications and useful training employing these social networks.

According to the results obtained from survey, 100% of members did evaluate membership in Telegram group and subjects related to complementary feeding useful and in terms of usefulness of subjects related to breastfeeding, only 3(7.3%) members had no ideas and the rest (38 members (92.7%)) agreed. People can enjoy teaching and learning using social networks that are interactively managed, so that members can learn more topics through these processes solving their problems in field of health teachings. According to the conducted survey, of 41 participants, 39 members were satisfied with learning, 35 members were satisfied with teaching that indicates the acceptability of peer group for participation in raining, and this has been highlighted in various papers (7, 8). Therefore, formation of peer groups can be

and this is an expectable point. According to conducted studies, employment status used to create a positive attitude for both learner and teacher. 100% of mothers announced use of social networks appropriate for health training. However, it should be noted that direct supervision of researcher on uploaded subjects and removal of invalid information by researcher played a vital role in creation of a trustful environment and agreement between members. During the program, only one subject with negative ethical meaning was uploaded then the person was removed from the list based on group rules.

#### **4-1. Limitation of study**

This study had some limitations. The most important limitation was non-equipped social network of telegram for counting the messages. Another problem was about telegram limitation in categorization the comments that was caused very time-consuming process.

#### **5- CONCLUSION**

Demand for information related to health and receiving a specific subject through smart phones would increase health, so that this happened within group of "Mother's love – Mothers' milk" because of asking questions related to child health and collecting response of members and accountability by group managers; in this research we explained usage of a new way of educational relationship, a mutual interaction will be created. Also, this study indicates necessity of paying attention to social networks as a potential training field. Usage of this media is useful, in particular in women groups that are under the specific circumstances of pregnancy, so that the possibility of problem solving trainings and strengthening educational subjects will be increased among members and they can use what have learned to

teach others being satisfied with such participation. As a result we can suggest social network as an educational method which was evaluated useful by one hundred percent who participated in the survey about this method and also 100% of them announced use of social networks appropriate for health training

**6- CONFLICT OF INTEREST:** None.

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