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Social media as a beneficial tool to support preterm infants and parents

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ABSTRACT

Home care, continuous follow-up, and endless post discharge support play vital role in preventing the emergence of mental and physical disabilities and death among preterm infants. Providing necessary care and support for such infants requires huge financial and human resources and exposes heavy costs on hygiene and health system. Internet and information sharing applications, particularly Web 2.0, and social media present innovative techniques to provide a convenient channel to exchange necessary information between infants, parents, and caregivers. Despite the increasingly expanding use of social media in health and medicine, such devices have rarely been applied in more specialized fields, such as the hygiene and health of preterm infants. Thus, the present study aims at investigating studies published on the experiences of parent in regard with the integration of social media in the improvement of preterm infant treatment, determining the function of social media in taking better care of preterm infants, and presenting suggestions for further practical researches in this area of knowledge. This review study was conducted in 2016. To conduct the study, published articles in the years 2005 to 2016, in English with an emphasis on Social media and Preterm infants were studied. Search was done in databases including Pubmed, Science Direct, Google Scholar, Proquest. The collected data were analyzed. The role of social media in three areas of preterm infants care, sharing the knowledge of clinical professionals, and sharing parenting experiences was clarified. Social media provide the necessary background for the distribution of the knowledge of medical experts; it also creates the opportunities of exchanging ideas, sharing parenting experiences, and expanding the knowledge of experts and educated individuals in addition to providing a stress free environment. The potential of social media in facilitating medical interventions for preterm infants and providing necessary care and follow-up for these infants from Intensive Care unit into the house can be rightly used. However, such objectives are not realized unless followings are observed in the design of social media: parent-centeredness, opportunity of parent education, sharing the knowledge of experts, and counseling; the quality of information, respecting patient privacy, and localizing socio-cultural options of a medium are significant issues to consider.

INTRODUCTION

Considering short and long term problems and complications of preterm birth [1], home care, continuous follow-up, and endless post discharge support play vital role in preventing the emergence of mental and physical disabilities and death among preterm infants; it is one of the most serious challenges with which WHO is struggling. [2]

According to WHO statistics, 15 million preterm infants are born worldwide every year and this figure is rising. The mortality rate of this type of birth was 1 million infant deaths in 2013 and the rate varies from 5 to 18% of all births in different parts of the world.

Preterm birth, which occurs at 27th or 28th weeks of pregnancy prior to the culmination of evolution cycle, has several medical and social causes, such as maternal infection, air pollution, preterm rupture of membranes, and several other biological factors. Being born preterm is the second cause of death in children under 5 years and it results in innumerable short and long term problems and complications, most notably the hospitalization of the infant in NICU. [4]

In comparison to term born babies, preterm infants are more susceptible to brain damages, such as Cerebral Palsy, mental retardedness, visual damages, and loss of hearing power; the lower the birth age, the higher the risk of such complication. [5]

In 21st century, the emergence of technological innovations, such as Web 2.0 and the generation of second medical sciences, 2.0 Medical Sciences, has drastically changed the approach of medical care management [7]. Health care systems have moved from hospital care towards a focus on health promotion. Necessary health care is provided in the house of the patient and people take responsibility of taking care of their family members [8]. Social media provide the opportunity of the formation, distribution, reception, and presentation of information and the cooperation between people. [9-13]

The birth of preterm infant is an unpredicted, confusing, difficult, and stressful experience for parents; therefore, preparing the parents to accept and deal with difficult situations and giving them necessary instructions to cope with infants and provide appropriate home care is another challenge confronting preterm infants. [14-15]

Internet and information sharing applications, particularly Web 2.0, and social media present innovative techniques to provide a convenient channel to exchange necessary information between infants, parents, and caregivers [16]. Social media have greatly affected the cooperation between health care professionals, patients and their families, health care organizations, and the government.

The concept of social media is an evolutionary phenomenon; it, generally, refers to internet-based devices which allow people and communities to connect and share information, ideas, messages, photos, and any other contents; it also provides the space for cooperation. [18-21]

According to Kaplan and Haenlein's definition, social media implies a set of internet-based applications which is founded on technological and ideological principles of Web 2.0 and provides the opportunity of information exchange for users. [11]

In this study, the term 'social media' is applied to any internet device which facilitates information exchange and sharing between parents of preterm infants and health care professionals. Despite the increasingly expanding use of social media in health and medicine, such devices have rarely been applied in more specialized fields, such as the hygiene and health of preterm infants. The application of social media as a communicative channel through which data is easily circulated presents huge potential of research and investigation. [22-23]

Thus, the present study aims at investigating studies published on the experiences of parent in regard with the integration of social media in the improvement of preterm infant treatment, determining the function of social media in taking better care of preterm infants, and presenting suggestions for further practical researches in this area of knowledge.

This review study was conducted in 2016. To conduct the study, published articles in the years 2005 to 2016, in English with an emphasis on Social media and Preterm infants were studied. Search was done in databases including Pubmed, Science Direct, Google Scholar, Proquest. The collected data were analyzed.

RESULTS

Some of the most outstanding characteristics of patient-centered care services, which exist also in social media, include high level of information flow, clarity, customization, and the participation of the patient in the treatment process [24]. Nowadays, the majority of patients are in contact with online community in which they share personal experiences; they take advantage of this option in the treatment process. Several groups related to specific classified

realms of knowledge are active in facebook and this shows the significance of patient's participation in providing proper home care. [25-26]

Enhancing patient care, instructing patients, providing specialized education for university students and related staff, improving public health programs, and organizational improvement are the most significant applications of social media in health [27]. Some websites, such as ParentsLikeMe, present the option of online conversation and contact for patients and provide useful information on necessary medical treatments. [28-29]

Social media and social network are often interchangeably used; however, although they intersect, they are not the same. Social media function as a communication channel but social network is a direct, mutual relationship which makes communication between two partners possible. [30]

Although different types of social media are often categorized under social networks, social media are web browser sites which are installed on mart phones and allow users to share public and semi-public information and knowledge [31]. Social media often function as mediators through which people can transcend hierarchical and geographical boundaries in order to have direct relationship with one another and share necessary information. [17]

The term social media is a broad category which covers a wide spectrum; social networks [facebook, telegram, Google plus, twitter], professional networks [Linkedin], mass media [YouTube, Flicker], content-providing media [blog and microOblog], information and science collection [Wikipedia], and virtual reality are most widely known and used sorts of social media. [13-18]

Social media are service platforms which focus on the virtualization of the relationships between people; such platforms are- widely used in spatial networks and most commonly used ones are facebook and telegram [31]. Among different studies which have been conducted on the relationship between social media and health [16, 32, 34], Michele P. Hamm et al systematic review [2013] showed that social networks are the most effective social media used for enhancing management of illnesses and repercussions. [35]

In United States, 61% of adults do online search and 39% used social media, such as facebook, for receiving health information [36]. Almost 45% of Swedish and Norwegian hospitals used Linkedin [37]. According to 2010 statistics of England, facebook rates as the fourth source of information related to health. [38]

Millions of users worldwide spend several hours daily surfing social networks such as telegram, facebook, and twitter. Now, imaging that the same amount of time is devoted to searching health-related issues and users focus mainly on health care knowledge and information. It can be certainly expected that all social network users talk about health and medical issues; however, it is quite clear that such networks attract the attention of health care organizations and professionals due to their potential of controlling and monitoring health management and patient instruction. [27]

The main functions of social media in health include accumulating health care status [39-41], creating the space for answering medical questions [42, 43], instruction, enhancing health [44, 45], sharing parenting experience, and understanding the vital role of physicians [46]. According to the main objective of the study, which is investigating the role of social media on the health promotion of preterm infants, following Table provides some clinical case-control experiments in which social media has been presented as an influential factor on the improvement of the health of preterm infants.

Results	Interventions	Objectives of the study	Study participants	Type of intervention	Type of social media	Author
The social media postings ($n = 305$) were analyzed using thematic analysis. A description of the process of breastfeeding a preterm infant from the point of view of a mother was created. The process consisted of three main	mothers of preterm infants. 128 mothers entered into the study and were randomly classified in two groups of control and	to describe the perceptions of breastfeeding Mothers of preterm infants based on the postings in peer- support group discussions in	30motherswhohadgivenbirth topreterminfantsinfants(lessthan35weeks)The participantmotherswere	Discussion and questions and answer in Facebook	Social network	HannakaisaNiela-Vilén (2015) [33]source

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themes: the breastfeeding paradox in hospital, the 'reality check' of breastfeeding at home and the breastfeeding experience as part of being a mother. After the infant's discharge, the over- optimistic expectations of mothers often met with reality – mothers did not have the knowledge or skills to manage breastfeeding at home. Successful breastfeeding was an empowering experience for the mothers, whereas unsuccessful breastfeeding induced feelings of disappointment. Therefore, the mothers of preterm infants need evidence-based breastfeeding counselling and systematic support in a neonatal intensive care unit (NICU) and at home. Increase in the knowledge of young mothers in order to enhance feeding performance of infants through social network applications as a platform is one of the objectives of this study. T4TM is a theory-based	Three mothers who had breastfeeding preterm infants experience were determined as peers support group. The cooperation between mothers was active and a midwife responded to their questions. Participating mothers kept their group membership up to one year after delivery. The collected data covered January 2011 to February 2013. All peer support group posts were downloaded and a sum of 305 posts written by 22 mothers, peer support group, and the midwife were analyzed. The analysis was carried out comparatively. This study was a clinical case-control research. The interventions include using a web-based educational application, which is available through smart phones and	social media.	experiencing their first week after delivery and their infants were hospitalized in NICU. Three mothers wh0o had the experience of breastfeeding preterm infants were selected as pair group. The study was conducted in a university hospital in Finland.	Applications based on websites with the option of online discussion and question and answer	Social network	MildredAHorodynski (2015) [47]source
social network intervention which, in case of the presence of necessary infrastructure, is a very suitable device for helping young mothers to enhance feeding performance for their infants. Expected outcomes will address the effectiveness of the social media intervention in helping teen mothers develop healthy infant feeding practices that contribute to reducing the risk of early onset childhood obesity.	computers. This application provided instruction for young mothers in terms of nutritional behaviors for preterm infants, question and response and discussion groups, and a text system for the questions the nurses might have for mothers. Participants receive a short message on their phones which reminds them to refer to website and record their daily problems and difficulties. When subjects visit T4TM page, they will witness following points: • The name of the challenge • Why does that challenge matter? • Some tips	younger, versus standard care on infant weight, maternal responsiveness, and feeding style and practices	42 weeks and they weighed between 2500 to 3750 grams. These mothers were randomly selected from four provinces of Michigan, America. They were randomly classified in two groups of control and intervention. (40 subjects in each group)			

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	which complete the					
	challenge					
	 How 					
	many subjects have					
	competed daily					
	challenges?					
	• A space					
	for leaving comments					
	To do so, there has					
	been designed a 6-					
	weeks table in the					
	website according to					
	which the data is					
	recorded.					
	The data of subjects					
	was collected three					
	times during the					
	research. First, when					
	the infants were 4 to					
	8 weeks old; second,					
	when the infants were					
	10 to 12 weeks old;					
	third, when the					
	infants were 6					
	months old.					
	The experiences of					
	mothers were					
	examined in three					
	areas; MR (motherly					
	response), FS					
	(feeding style), and					
	FP (Feeding					
	performance).					
	infant factors at					
	baseline (self-					
	efficacy, knowledge,					
	infant					
	age, temperament,					
	type of feeding) will					
	be compared					
	across intervention					
	and control groups					
	using t-test for					
	continuous variables					
	and chi-square test					
	for categorical					
	variables					
. 1497 individual Facebook	A qualitative study	A qualitative	Top 25 public,	Facebook	Social	Emelie Maria
groups focusing onpreterm	investigated the	study which	English-	posts	network	Thoren(2012)
infants were found,	content of the	investigates the	speaking groups			[26]Source
wherein the 25 largest had	relationship between	relationship	in facebook			
Between 391 and 14 986	facebook groups in	between	which focused			
members. Non-	terms of preterm	facebook groups	on preterm			
profitfundraisinggroups	infants.	in terms of their	infants.			
commissed 180/ of anolyses				1	1	
comprised 48% of analysed	20 initial and 15 final	focus on preterm				
groups	posts and 15	infants?				
groups and had the greatest	posts and 15 comments which	infants? This study				
groups and had the greatest number of members	posts and 15 comments which covered discussion	infants? This study examined				
groups and had the greatest number of members (median 1450,IQR 548–	posts and 15 comments which covered discussion topic were analyzed	infants? This study examined following				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general	posts and 15 comments which covered discussion topic were analyzed through thematic	infants? This study examined following questions:				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for	infants? This study examined following questions: Are preterm				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall groups, members: median	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for each individual	infants? This study examined following questions: Are preterm infants a				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall groups, members: median 1183, IQR 658–2116) and	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for each individual group.	infants? This study examined following questions: Are preterm infants a challenging issue				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall groups, members: median 1183, IQR 658–2116) and interpersonal support	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for each individual group. The objective,	infants? This study examined following questions: Are preterm infants a challenging issue in facebook?				
groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall groups, members: median 1183, IQR 658–2116) and interpersonal support groups (28% of all	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for each individual group. The objective, personal traits,	infants? This study examined following questions: Are preterm infants a challenging issue in facebook? If yes, who				
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groups and had the greatest number of members (median 1450,IQR 548– 5435), followed by general awareness (24% ofall groups, members: median 1183, IQR 658–2116) and interpersonal support groups (28% of all	posts and 15 comments which covered discussion topic were analyzed through thematic coding scheme for each individual group. The objective, personal traits,	infants? This study examined following questions: Are preterm infants a challenging issue in facebook? If yes, who				

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91.5% of posters were		preterm infants in				
women, and two-thirds of		facebook?				
posts had been written by		Which				
mothersofpreterm infants.		organizations and				
The analysis of posts,		institutions are				
comments and discussion		formally				
topics (n=1054) showed		responsible for				
that 'information		organizing such				
sharing' (31%) and		discussions?				
'interpersonal support'						
(53%) werethe most						
common purposes						
	A qualitative	The objective of	The parents of	Electronic	Social	TatjanaI.Gabbert(2013)
10.7% of parents used	population study was	the study was	infants with too	questionnaire	network	[48]Source
internet for exchanging	conducted.	investigating the	low birth			
information about their	Questionnaire were	experiences of	weight (less			
infants during NIU	sent to 278 families; 141 families	preterm infant	than			
hospitalization and 18.6% of them used internet after	answered. 53.6%	parents through surfing social	1500grams) who were			
discharge. The majority of	claimed to be	networks and	hospitalized in			
responders, 64%, stated	members of some	social media;	NICU in the			
that social networks do not	social networks or	such sites are	hospital of			
satisfy their requirements.	media.	useful devices	Berlin			
79.1% of participants		with the potential	University			
reported their interest in		of sharing and	between			
connecting to online social		exchanging	January 2009 to			
networks which provide		experience and	December			
following information:		information.	2010.			
• General			An anonymous			
information about preterm			researcher made			
infants			questionnaire			
 Explanations on 			was delivered			
abbreviations related to			to collect			
hospital systems			following data:			
• Common			1 the sets of			
details, problems, and			1. the rate of using online			
treatments available and			using online social networks			
patient infant follow-up			and facebook			
			2.applied			
			internet sources			
			3.the reasons			
			for using			
			internet			
			4. particular			
			properties and			
			requirements of			
			social networks			
			used by parents			
			of VLBW			
			infants			
			5. the difference			
			between the use			
			of internet			
			among parents			
			of preterm			
			infants and those of VI PW			
			those of VLBW infants			
			mants			
			Descriptive			
			statistics was			
			used to analyze			
			frequency of			
			variables. Chi-			
			square test was			
			square test was			
			used to analyze			
			-			

	All statistical equations and calculations were carried out with SPSS software, version 19.0	

According to the results shown I the Table and other investigated studies, the application of social media is fore grounded in three domains of caring preterm infant, sharing the knowledge of clinical professionals, and sharing the experience of parents.

Social media and taking care of preterm infants

In comparison to term born babies, preterm infants are more susceptible to brain damages, such as Cerebral Palsy, mental retardedness, visual damages, and loss of hearing power; the lower the birth age, the higher the risk of such complication. However, the results of different studies have shown that if regular follow-ups of parents continue and necessary treatments are implemented by experienced personnel after discharge, the frequency of death and mental damages of preterm infants can be prevented and decreased. [4]

A research was conducted in SHDS American states in health sections in 2016; in this research, 34 facebook pages in a period of 200 days were examined. The results of the study showed that baby and infant health related issues were as much discussed as contagious diseases, vaccination, and emergency medical services and preparations. [23] Constant visits and follow-ups, transforming preterm infants from hospital to home, and parent supportive interventions are the most important challenges this type of birth 9mposes on health care systems [49]. Constant health care follow-ups, breastfeeding cares, sleeping program, and growth assessment plans are the most important post-discharge requirements of preterm infants [50]; such necessities must be considered in the design of social media which aim at investigating preterm infant care.

According to the results of KC Wade et al study, a frequency of 20 visits and 5.5 medical prescriptions are done for each infant yearly, the majority of which is related to initial health care; preterm birth is a risk factor which increases the number of visits. It might be logical to state that establishing cooperative environments, such as social media, sharing parenting experience, and exchanging the knowledge of educated professionals decrease the number of visits and related costs. [50]

Establishing online communities in which members participate actively and share freely, such as NICU infant families, is very important for sharing similar experiences, exchanging relevant information, and providing mutual emotional support; this also creates deeper understanding of similar situations. [51]

OU Medical Center of Pediatrician Hospital in America has fulfilled this necessity by establishing social network communities for families and infants discharged from NICU; this community has been called Tiniest Sooners. In addition to providing educational pamphlets, links, and group discussion, this website has provided the space for mutual cooperation and sharing for individuals. American Association of Pediatrician [AAP] has used this medium and online community to contact with caregivers and parents of preterm infants. [52]

A new application, entitled T4TM, as a useful tool for young, inexperienced mothers [15-19 years old], was created by Mildred Horodynski et al in 2015. This program was a web-based program which presented the option of mothers' conversation and discussion with one another and the option for counseling experienced professionals. This platform was a useful tool in the enhancement of infant feeding performance. [34]

Most studies have used social network as a tool for research and education, the purpose of which is facilitating communication and enhancing knowledge transmission so that it functions as a practical tool [35]. Hannakaisa et al used social network as a tool for studying the perception of mother's breastfeeding in 2013. By investigating the content of sent and received messages of mothers in the facebook, they realized that the whole messages can be classified in three distinct groups; paradoxical breastfeeding in the hospital, breastfeeding reality check at home, and breastfeeding experience as a part of mothering phenomenon. [33]

Social media and sharing the knowledge of clinical professions

Difficulty in finding relative knowledge and qualified professionals interested on knowledge exchange are two main barriers on the way of the realization of optimum knowledge exchange [53]. Social media create necessary background for the exchange of the knowledge of professionals. Such an environment provides the space for discussing clinical performance and cooperating with colleagues, patients, and students [54-55]. As an instance, Georgia University of Medical Sciences has set up a social network, called WebView, through which patients have contact with physicians and ask them questions [18]. Other websites, such as Curegate, Dutch Website, and Artsenest, have been designed with the same objectives. [56]

The structure of social networks shows the type of communication between people [57]. The relationships in networks are of two types of knowledge-based and social; thus, it is considered as a tool for evaluating the performance of physicians [58]. Relationships simulated in discussion groups provide the infrastructure for assessing the performance of physicians; it also is a friendly environment for discussing and sharing ideas. [59-60] According to the results of a study which examined the extent to which Argentina SAP physicians use technology and Web 2.0, pediatricians used social networks mostly for sharing personal information and private use rather than discussing occupational matters. 50% of pediatricians showed interest in using this technology to carry out professional services. [61]

Social networks and parents of preterm infants

Preparing parents while infants are hospitalized in NICU and having contact with them after discharge, providing web-based information about infants, and establishing environment and supportive programs at home for parents increases the ability and self-esteem of families in taking care of infants and shortens infant hospitalization in Intensive Care Unit [62]. Supporting families after discharge from NICU plays vital role in facilitating infant transmission to their homes. [18]

Main supportive interventions for parents of preterm infants include providing necessary information, involving parents in growth assessment and breastfeeding programs, and instructing child care techniques [Kangaroo technique]. Social media provide a context for decreasing parent stress, exchanging thoughts, ideas, and experiences of other parents, and sharing the knowledge of educated clinical professionals. [14]

Laura Audelo, in her book entitled *The Virtual Breastfeeding*, believes that mothers of preterm infants need contact and online relationship with people with similar experiences and nurses so that they can overcome potential problems, especially about breastfeeding. She introduces membership in social media as a way to remove the seclusion of preterm infant mothers [63]. Those mothers who are experiencing the first delivery [34] and mothers in families with low income need social media more than others to share personal information and knowledge. [16] According to the results of Stroever et al study [2011], social media are useful devices in order to transform necessary information about the health of infants of low income families; such families do not have financial ability to refer to medical specialists and pediatricians; thus, they refer to online websites and communities more frequently than other families and use discussion spaces and facebook. [16]

Sabine Angelika Weyand's study (2011) assessed a physician diagnosis and preterm infant parent backup system, entitled Physician-Parent Aided Decision (PPADS). The purpose of this system was helping decision making by supporting parents and physicians so that they can make more conscious decisions, enhance relationship between physician and parent, increase parent content about decisions, decrease anxiety and stress of parents, and increase decision efficiency. (64)

However, online society of mothersis mostly provided in websites where advertisement, education, and information are mostly dominant. In most cases, these sites consider a space for sharing information between parents and managers of these sites who are mostly health professionals and experts. For example, in sites and weblogs, such as Breast Milk for Preemie and http://www.breastmilkcounts.com, there is designed a link called *Community*. Sites like ninisite.com and mniban.com are sites in Iran which make information exchange and dialogue between parents possible. Some websites of Gynecologist and Pediatrician Hospitals present and provide information on proper and useful health care.

DISCUSSION

Several studies have investigated the relationship between social media and health, the role of social media in illness management, sharing the knowledge of health experts and peers, and socialization. However, the number of studies which have focused on the role of social media in preterm infant health is limited. Thus, the present study was conducted to investigate the use of social media in the improvement of the health of preterm infants, determine main applications of this device in the health of preterm infants and present suggestions for further researches. According to former researches, this study determines the uses of social media in enhancing the health of preterm infants through constant follow-ups, instructing parents, counseling and educating them about breast feeding and health care; it introduces social media as useful tools for facilitating infant health care and enhancing physical and mental health of parents.

Our study showed that social media facilitate post discharge interventions (16, 26, 33, 48, 65) and low income and inexperienced parents take most advantage. Parents have to deal with problems after discharge because they have easy access to neither hospital nor educated experts at home; such problems result in referring to pediatricians and paying costs. However, social media provide cooperative, instructional environment in which parents discuss their problems with peers and use their experience; or, they establish online contact with physician and apply their knowledge; this decreases reference to specialist and subsequent cost. The issue to be focused on is that some networks, such as PPADS and T4TM, are basically designed for NICU and home and the transmission from NICU to home is of paramount importance. Thus, if media are designed in a way that they facilitate infant health care from NICU to home, they will have strongly positive roles in enhancing infant health.

The main focus of parent intervention is on instruction (14, 48, 49) and breastfeeding care instruction are emphasized more than other issues in social media. Mothers of preterm infants need evidence-based counseling and support after discharge. (33)

This study also showed that social networks are most effective social media in enhancing preterm infant health care (26,33,34,48); for example, PPADS cooperative system, which is established in NICU and aims at facilitating communication between parents and physicians for decisions about the status of the infant (64); Tiniest Sooner social network which is an instructional-cooperative application for NICU environment (52); T4TM systems which have been designed to support young, inexperienced mothers (47) provide discussion groups to facilitate communication between peers and physicians. The results of different studies showed that social networks increase the interest of mothers and pediatricians in using this device through creating a cooperative environment. Additionally, since social networks reveal the content of relationships between people, they are the most practical social media in enhancing infant health.

In spite of honest, endless effort to provide process investigation and analysis of the role of social media on the health of preterm infants, two issues did not receive just and full-length examination and this is one of the limitations of the present study.

The first issue is related to observing privacy, confidentiality, and medical morale. This topic is extremely broad and it needs a separate research. We all know that physicians are morally obliged to observe patient privacy and confidentiality. Access to patient information and uploading it on online sites are novel issues in confidentiality, the purpose of which is sharing the knowledge of health professionals and experts. Maybe written consent of parents and limiting access to their information are useful in observing confidentiality in social media. Main threats of social media in the issue of health include disregard patient privacy, violating confidentiality, biased information presentation, and presenting wrong information.

The second limitation of the present study is not focusing primarily on Iran in investigating the role of social media on preterm infant care. Scrutinizing the role of such media would definitely cause presenting suitable suggestions to improve health status of preterm baby's in Iran; it will also pave the ground for making proper and scientific decisions for the implementation of social media and investigations of infrastructures and management dimensions of this device in designing future systems. However, the present study did not primarily focus on the issue in Iran for several reasons, such as limited access to such media, strict privacy, and improper organization of personal profiles. Based on all what was mentioned above, quality of information, respecting patient privacy, and sociocultural localization of social media must be necessarily considered in designing social network which aim at enhancing

health status of preterm infants. The important point in designing social applications is that, in addition to establishing cooperative environments for parents, the options of specialized counseling of health professionals must be available too. The quality of information is very important when one speaks of information exchange and distribution.

Like any other technological innovation in the realm of health, in the design of social media it must be noted that unless standard and framework of electronic files are observed, the efficiency of designed application won't have any role in technological advancement and development of electronic file.

Finally, it must be stated that considering the complexity and several medical and miscellaneous causes of preterm birth, it will impose heavy financial and psychological burden on the family; thus, families need medical and social support from the moment of birth up to when the infant is properly fed and normally grown. It is quite clear that such support should not be limited to hospital and short term hospitalization period. We know that increasing use of internet among different sections of society presents the potential of social media, as useful devices for long term continuous follow-ups of preterm infants. However, such an objective is realized when social media are parent-centered, present the opportunity of information and knowledge sharing, respect patient privacy, observe confidentiality, and pay grate attention to the quality of exchanged information.

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