

Effect of Social Media on Pregnant Women's Experiences

Heba AbdElrehem Mohamed Zedan¹, Dr. Amina Mohamed Rashad El-Nemer²,
Dr. Hanan El-Sayed Mohamed El-Sayed³

Abstract:

Background: Pregnancy is a very important period in the women's life during which unexpected life-threatening complications may occur at any stage and many women may die as a result of complications. **Aim:** This study aimed to evaluate the effect of social media on pregnant women's experiences. **Design:** A quasi-experimental research design was utilized. **Sample type:** A purposive sample was utilized. **Subjects:** The study subjects included 50 pregnant women who were attending predetermined setting according to inclusion criteria. **Setting:** The study was carried out in Antenatal Clinic at Mansoura New General Hospital, Mansoura City, Dakahlia governorate, Egypt. **Tools:** Three tools were used, a structure interview questionnaire, questions to assess pregnant women experiences and satisfaction likert scale. **Results:** The results of the present study highlighted that there was a statistical significant differences among the studied women between previous and current pregnancy experiences in favor of the current pregnancy regarding lifestyle change, taking healthy diet, number of antenatal visit, rest and sleep, dealing with dyspnea, heartburn, backache, information about baby care, all items of importance of breast feeding, information about type of immunization. **Conclusion.** The use of social media as an educational method during pregnancy give an actual chance for helping women learn how to cope effectively with pregnancy journey. There was a statistical significant difference among the studied women between previous and current pregnancy experiences in favor of the current pregnancy regarding lifestyle change, taking healthy diet, number of antenatal visit, rest and sleep, dealing with dyspnea, heartburn, information about baby care, all items of importance of breast feeding, information about type of immunization. **Recommendation:** Integrate social media educational program in nursing protocol for pregnant women.

Keywords: Antenatal care, social media, pregnancy experience.

I. Introduction

Nowadays, modern electronic technologies have become an important part of all people's life with the features of fast and remote, and fundamentally changing the way people access and share information (*Jianlei&Bingbing, 2017*). Social media is more powerful tool to connect among individuals. People now are adept at using this medium, by which they can stay connected and make their jobs efficient and innovative. It provides entirely new concept and can hardly be imagined by people in 20 years ago (*Lustria et al., 2016*).

Social media is generally defined as powerful 'Internet-based' tools that allow users to share, create, and discuss the online content such as information, opinions, personal experiences, images and video clips (*Gagnon & Sabus, 2015*). Also, Social media is a collective term which provides various features that can meet the different needs of the different users. It contains social networking sites such as Facebook and LinkedIn, blogs, media sharing (YouTube), video or photo sharing sites, Microblogs (Twitter) and collaborative projects (Wikipedia) (*AHPRA, 2014*).

The public participation rate in social media has increased unexpectedly over this decade. Senses Social Media Report (2016) states that close to nine in ten Australians (87%) access Internet every day. Among these users, 69% of them sent or shared photo or links by using social networking website such as Facebook and Twitter daily (*Sensis Social Media Report, 2016*).

Significance of the study:

¹ Assistant Lecturer of Woman's Health and Midwifery Nursing, Faculty of Nursing, Mansoura University, Egypt.

² Professor of Woman's Health and Midwifery Nursing, Faculty of Nursing, Mansoura University, Egypt.

³ Assist.Prof.Dr of Woman's Health and Midwifery Nursing, Faculty of Nursing, Mansoura University, Egypt.

In, 2014 World Health Organization (WHO), reported that about 800 women die every day from pregnancy, childbirth or postpartum preventable causes. The highest rate of all maternal deaths presents in developing countries (WHO 2014). All over the time mother and child health is one of the most important and essential roles in health agencies (Jabbari et al., 2014).

Adequate antenatal care is one of the national goals in the healthy people 2020 (Okumus&Sohbet, 2013). Reducing maternal mortality is a primary goal of the Ministry of Health and Population. It should be noted that the maternal mortality ratio has been declining from 120 per 100.000 live births in 1990 to 45 per 100.000 live births in 2013 (WHO 2014). The demography and health survey reported that percentage of women who had the regular antenatal care has been increased from 67% in 2008 to 93.1% in 2014 in Dakahlia governorate (EDHS 2014). Despite these great efforts, health facilities yet face obstacles in achieving high quality of care (Abbas 2014). Lack of antenatal care is documented in Egypt (Odetola,2015).

Women are using social media all over the time and nurses play an important role in transmission of knowledge among health care & patients. Nurses can use social media as a new communication tool for pregnant women to share knowledge & information with women and educate pregnant women without posing any difficulties & constrains on them.

Due to significant gaps in antenatal services, there is a great need to emphasize on increasing antenatal care and implementing agreeable new method of counseling and education as social media. Within this context, the study will be beneficial for the pregnant women as utilizing this method improves pregnancy and labour outcomes, and consequently improve antenatal care.

Aim of the study: The study aimed to evaluate the effect of social media on pregnant women's experiences and satisfaction.

Research hypothesis: Women who joined antenatal social media group report positive experiences in pregnancy and more satisfaction.

Study design: A quasi-experimental research design was utilized.

Study setting: The study was carried out in Antenatal Clinic at Mansoura New General Hospital, Mansoura city, Dakahlia governorate, Egypt Mansoura New General Hospital is a public hospital provides free services to women during the life cycle, such as; pregnancy, labour, postpartum and family.

Sample type: A purposive sample was used to choose study sample.

Study subjects: The study subjects included 50 pregnant women who were attending predetermined setting according to inclusion criteria:

- Age 20 – 35 years old.
- Multigravida in third trimester of pregnancy.
- Attending for ANC in New General Hospital.
- Has a single fetus
- Have no medical or psychological problems.
- Having an Android mobile phone with Wi-Fi availability.
- Using Facebook and Whats up.

Sample size estimation:

The calculating sample size , through DSS research.com sample size calculator software, at 1% α error (99.0% significance) and 10.0 β error (90.0% power of the study), assuming the satisfaction score (after 4 weeks) about breast feeding and family planning is (4.1 ± 1.2) (Mohamadirizi et al., 2017). The calculated sample size is 41. We can add 20% for better data and follow up drop, so sample was 50 pregnant women.

Tools of data collection:

Three tools were utilized for data collection:

Tool I: A structure Interview Questionnaire: It was designed by researcher using the national and international references. It is consist two parts: **Part I:** It include socio-demographic characteristics of woman as age, level of education, occupation, residence, address, telephone number and monthly income. **Part II:** It includes menstrual, obstetrics history a sage of menarche, gravity, parity, mode of previous delivery, number of abortion, number of low birth weight baby, number of still birth , complications of previous pregnancies, time of first antenatal visit, schedule of follow up visits and reason for visit.

Tool II: Questions to assess pregnant women experiences: It was designed by researcher using the national and international references. It Includes questions related to the effect of social media on women's journey during pregnancy and labor as (how to deal with complications and problems, changes life style as taking healthy diet, drinking enough amount of water, practice exercise during current pregnancy, take enough rest and sleep, , ability to perform daily activity, dietary complement. Also, occurs of problems during current pregnancy and method to

deal with, such as backache, heart burn, dyspnea, foot edema, frequent urination, constipation, stress and anxiety. Else information about baby care, baby immunization schedule, breastfeeding

Tool III: Satisfaction likert scale: It was developed by the researcher to assess women's satisfaction regard social media and satisfaction about contents introduce through it. It consists of five Likert scale, start from strongly disagree scored 1, disagree scored 2, undecided scored 3, agree scored 4, strongly agree scored 5. The higher score indicates the higher satisfaction.

Validity of the study tools:

Five jury experts and specialized university professors in the field of woman's health and midwifery nursing reviewed tools to check the validity of the content, changes were considered according to their comments.

Reliability of the tools:

The reliability analysis was used to verify the relevance of the questionnaire elements to each other. Cronbach's alpha was used for tool (II) pregnant women experience and tool (I) woman satisfaction

Pilot study:

A pilot study was conducted on 5 women (10%) to assess the clarity of the designed questionnaire and the applicability of the study tools, as well as to estimate the required time to collect them and then made the necessary adjustments, as change some words to be understood, these women were excluded from the study sample .

Ethical Considerations:

The approval of the Women's Health and Midwifery Department was obtained, after obtaining the approval of the Ethical Research Committee (ERC) of the Faculty of Nursing at Mansoura University, in addition to obtaining informed consent from each woman before the intervention. They are informed of the right to withdraw at any time. The research process does not harm mothers. After statistical analysis the tools of collect data were burning to ensure the confidentiality of the research, as well as the data collection tools did not deal with ethical and religious or cultural issues and maternal dignity.

Study procedure:

The actual field work of the study was conducted for 4 month's period from beginning of September 2019 to end of December 2019. The study was carried out through three phases.

Preparatory phase: After reviewing the relevant literatures, the researchers prepared and designed data collection tools. Official permission was obtained from the director of Mansoura New General Hospital; head of woman's health and midwifery nursing department and from the faculty of nursing ethical committee to conduct the study.

Planning and designing phase: During this phase, the researcher designed Facebook and Whats up group and gather scientific information to push it on these group.

Implementation phase:

- The researcher attended the antenatal clinic at a new general hospital three days /week from 9 Am to 12 Pm until the sample size was completed and checked the registered book to identify the pregnant women who met the inclusion criteria.
- Then the researcher met the potential participants individually after receiving their routine antenatal care, researcher introduced herself to women and explain the purpose of the study, joining and accepting the friend request on social media is an acceptance to join the study and invited woman to participate in the study and informed them about the purpose of the study and the time required for participation.
- After their agreements to participate, the researcher collects initial baseline assessment socio-demographic characteristics, obstetric data, and previous labour outcome of last pregnancy.
- After that the researcher added the women to these apps and push information contain antenatal care & education during third trimester The content of this information were be displayed by using text, pictures, video and animation. These interactive social media group with these features allow the women to see, hear, and interact with the researcher and with each other during the study period.

Evaluation phase: At the end of social media group education and during labor the women evaluated about their pregnancy experience, their labor outcomes and women's satisfaction using the previous predetermined tools.

Statistical Analysis

All statistical analyses were performed using SPSS for windows version 20.0 (SPSS, Chicago, IL). Categorical data were expressed in number and percentage. Continuous data were normally distributed and were expressed in mean \pm standard deviation (SD).

Chi-square test was used for comparison of variables with categorical data. Cronbach's alpha test was performed to test for the internal consistency of the tools used in the study. Statistical significance was set at $p < 0.05$.

Results

Table 1: Distribution of the studied women according to their demographic characteristics

Items	n (50)	%
Age (years)		
20->25	11	22.0
25-30	39	78.0
Educational level		
Basic and less	4	8.0
Secondary	41	82.0
University	5	10.0
Occupational status		
Housewife	19	38.0
Employed	31	62.0
Residence		
Rural	19	38.0
Urban	31	62.0

Table One presented demographic data of the studied women. It was found that the mean age of studied women was (26.2+-2.7) year. The higher percentages (82.0%) of them had secondary education also were employed and from urban area (62.0%).

Table 2: Distribution of the studied women according to their obstetric history.

Variables	n(50)	%
Age of menarche		
<11 years	29	58.0
>11 years	21	42.0
Gravidity		
G2	31	62.0
>G2	19	38.0
Parity		
P1	32	64.0
P2	18	36.0
Types of previous delivery		
Normal vaginal delivery	37	74.0
Vaginal with episiotomy	9	18.0
CS	4	8.0
Abortion		
None	46	92.0
One	4	8.0

Table Two showed that more than half (58.0%) of studied women had menarche below 11years, about (62.0%) of them were gravida two(74.0%)had normal vaginal delivery, the most of them had no abortion, no low birth weight baby and no stillbirth (92.0%, 88.0%, 98.0% respectively) .

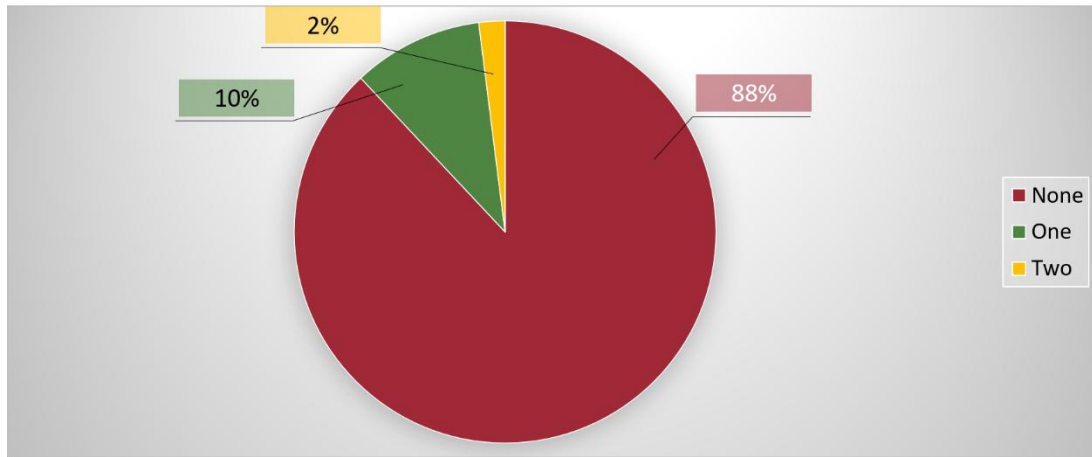


Figure 1. Distribution of the low birth weight baby of the studied women

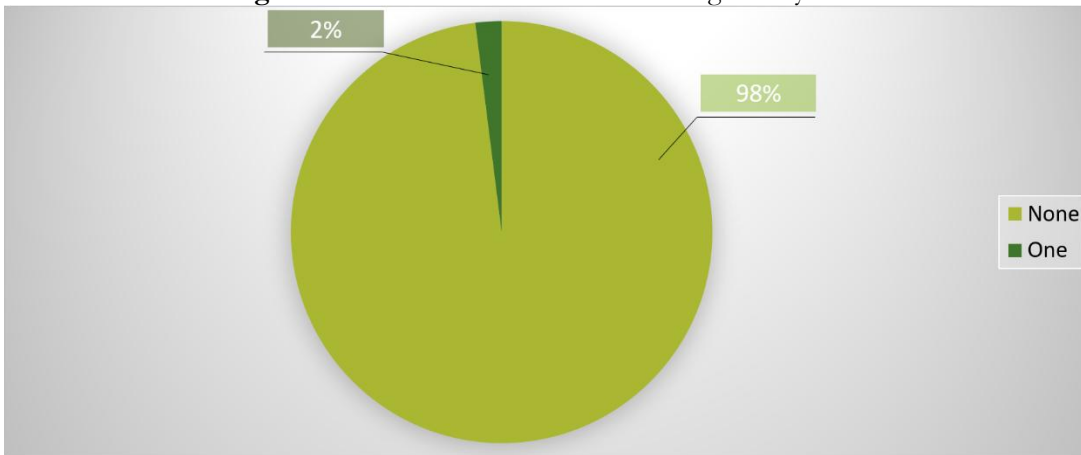


Figure 2. Distribution of the stillbirth of the studied women

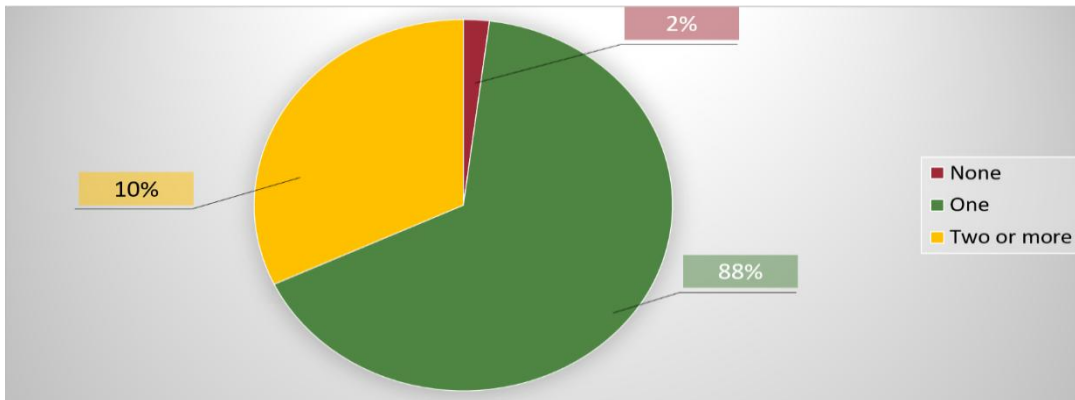


Figure 3. Distribution of the living children of the studied women

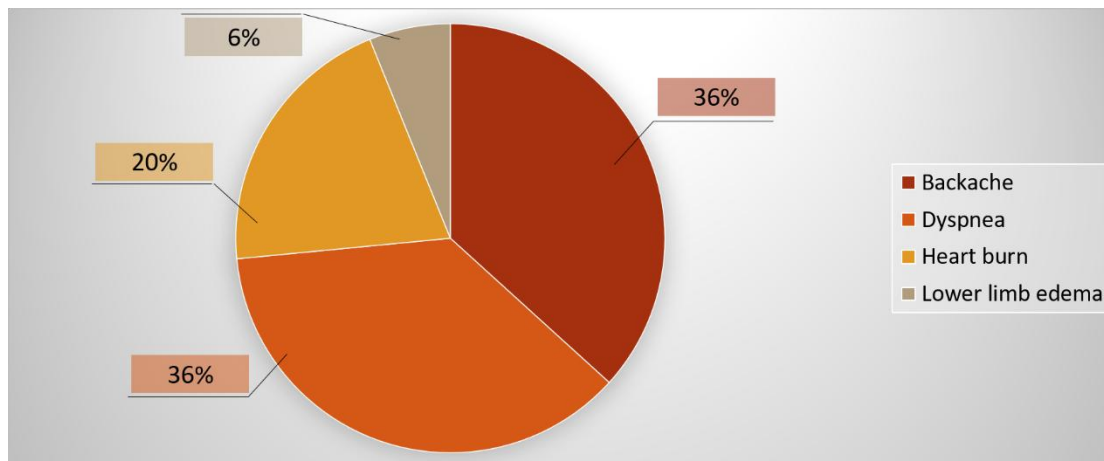


Figure 4. Distribution of the studied women according to their complaints during previous pregnancy

Table 3: Comparison between previous and current pregnancy experiences related to life style and healthy diet of the studied women.

Life style and healthy diet	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	n	%	X ²	P
Lifestyle changes						
No	31	62.0	0	0.0		
Yes	19	38.0	50	100.0	44.928	<0.001
Having healthy diet						
No	30	60.0	0	0.0		
Yes	20	40.0	50	100.0	42.857	<0.001
Adequate protein (n=20)						
No	10	50.0	19	38.0		
Yes	10	50.0	31	62.0	0.848	0.357
Adequate carbohydrates(n=20)						
No	12	60.0	22	44.0		
Yes	8	40.0	28	56.0	1.464	0.226
Diet rich in calcium(n=20)						
No	20	100.0	9	18.0		
Yes	0	0.0	41	82.0	39.586	<0.001
Diet rich in iron(n=20)						
No	20	100.0	4	8.0		
Yes	0	0.0	46	92.0	53.667	<0.001

Table Three: Presented comparison between previous and current pregnancy experiences related to life style and healthy diet of the studied women. It was found that there were highly statistical significant differences among the studied women between previous and current pregnancy experiences ($p < 0.001$) regarding lifestyle change and taking healthy diet.

Table 4: Comparison between previous and current pregnancy experiences related to time of first antenatal visit, rest and sleep of the studied women.

Time of first antenatal visit, rest and sleep of the studied women.	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	n	%	X ²	P
Time of first antenatal visit						
In first trimester	42	84.0	34	68.0		
In second trimester	6	12.0	16	32.0		
None	2	4.0	0	0.0	7.388	0.025
Number of antenatal visits						
<4 visits	10	20.0	1	2.0		
4 visits	37	74.0	21	42.0		
>4 visits	2	4.0	28	56.0		
None	1	2.0	0	0.0	35.311	<0.001
Reason for visit						
Regular follow up	39	78.0	45	90.0		
Having a complain	9	18.0	5	10.0		
None	2	4.0	0	0.0	3.571	0.168
Rest and sleep						
Not enough	28	56.0	3	6.0		
Enough	22	44.0	47	94.0	29.219	<0.001
Number of hours per day?						
<6 hours	27	54.0	2	4.0		
6 – 8 hours	23	46.0	24	48.0		
>8 hours	0	0.0	24	48.0	45.573	<0.001

Table Four: showed that there were highly statistical significant differences among the studied women between previous and current pregnancy experiences ($p < 0.001$) regarding number of antenatal visit, rest and sleep.

Table 5: Comparison between previous and current pregnancy experiences related to ability to perform daily activities and dietary complement of the studied women.

Ability to perform daily activities and dietary complement of the studied women.	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	n	%	X ²	P
Ability to perform daily activity						
Not able	22	44.0	4	8.0		
Able	28	56.0	46	92.0	16.840	<0.001
Cause of not able to perform daily activity						
Fatigue	13	59.1	2	50.0		
Tired	8	36.4	2	50.0		
Dizziness	1	4.5	0	0.0	0.391	0.821
Dietary complement						
No	23	46.0	0	0.0		
Yes	27	54.0	50	100.0	29.870	<0.001
Type of dietary complement?						
Folic acid						
No	23	85.2	20	40.0		
Yes	4	14.8	30	60.0	14.517	<0.001
Iron						
No	6	22.2	12	24.0		
Yes	21	77.8	38	76.0	0.031	0.860
Calcium						
No	25	92.6	11	22.0		
Yes	2	7.4	39	78.0	35.096	<0.001

Table five: Revealed that there were highly statistical significant differences between previous and current pregnancy experiences ($p < 0.001$) regarding ability to perform daily activities and dietary complement.

Table 6: Comparison between previous and current pregnancy complications of the studied women

Previous and current pregnancy complications	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	n	%	X ²	P
Having Complications						
No	13	26.0	39	78.0		
Yes	37	74.0	11	22.0	27.083	<0.001
Complications						
Bleeding						
No	12	32.4	2	18.2		
Yes	25	67.6	9	81.8	0.833	0.361
Hypertension						
No	28	75.7	11	100.0		
Yes	9	24.3	0	0.0	3.293	0.070
Diabetes mellitus						
No	34	91.9	9	81.8		
Yes	3	8.1	2	18.2	0.922	0.337

Table six: Showed that there were no statistical significant differences between previous and current pregnancy complications among studied women, regarding bleeding, hypertension and diabetes mellitus ($P = 0.361, 0.070, 0.337$ respectively).

Table 7: Comparison between previous and current pregnancy of the studied women regarding dealing with backache.

Dealing with backache	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	n	%	X ²	P
Having backache during pregnancy						
No	4	8.0	2	4.0		
Yes	46	92.0	48	96.0	0.709	0.400
If yes how did you deal with backache						
Hot compress						
No	22	47.8	13	27.1		
Yes	24	52.2	35	72.9	4.325	0.038
Enough resting during the day						
No	39	84.8	6	12.5		
Yes	7	15.2	42	87.5	49.180	<0.001
Decrease daily walking and standing						
No	45	97.8	8	16.7		
Yes	1	2.2	40	83.3	62.419	<0.001

Table Seven: Showed that there were statistical significant differences between previous and current pregnancy of the studied women regarding dealing with backache by using hot compress ($P= 0.038$). While there were highly statistical significant differences when taking enough resting during the day and decrease daily walking and standing ($p<0.001$)

Table 8: Frequency distribution of studied women according to satisfaction about social media

Satisfaction about social media	Disagree		Undecided		Agree		Strongly agree	
	N	%	N	%	N	%	N	%
Easy method for communication	0	0.0	5	10.0	10	20.0	35	70.0
Fast reach for your need for information	0	0.0	5	10.0	10	20.0	35	70.0
Available at any time	0	0.0	5	10.0	11	22.0	34	68.0
Attractive method of learning experiences	1	2.0	4	8.0	9	18.0	36	72.0
Safe time, effort and money	0	0.0	3	6.0	10	20.0	37	74.0
Positive ,effect on your pregnancy experiences	0	0.0	3	6.0	11	22.0	36	72.0
Positive effect on your labor outcomes	0	0.0	5	10.0	8	16.0	37	74.0

Table eight. Presented data distribution of pregnant women according to satisfaction about social media. It was found that nearly three quarters of the studied women strongly agree that the social media was easy method for communication, fast reach for information need, available at any time, attractive method of learning experiences, safe time, effort and money, positive effect on pregnancy experiences & positive effect on labor outcomes

IV. Discussion

The study aimed to evaluate the effect of social media on pregnant women's experiences. The studied women reported a positive pregnancy experience than previous pregnancy with a higher satisfaction scores regarding social media and its contents. The study hypotheses were supported by the study findings.

Concerning previous and current pregnancy experiences related to life style and healthy diet of the studied women. The present study revealed that there were highly statistical significant differences among the studied women between previous and current pregnancy experiences regarding lifestyle change and taking healthy diet. This finding may be related to acquiring the knowledge about importance of healthy life style and diet through social media education program. These study findings were in agreement with **Watson et al., (2017)** they assessed the effect of lifestyle interventions on maternal body composition during pregnancy in developing countries and reported that the majority of the studied women take adequate protein and carbohydrates, diet rich in calcium and iron. In the same line, **Overdijkink et al., (2018)** they studied the usability and effectiveness of mobile health technology-based lifestyle and medical intervention Apps supporting health care during pregnancy. reported that the majority of the studied women take well balanced diet.

Inversely, the present study findings were dissimilarity with that of **Wallwiener et al., (2016)** in their study. They assessed user proportions and characteristics of pregnant women using Web-based information sources-A cross-sectional study. They reported that the minority of the studied women take healthy diet this finding may be due to low income of the majority of the studied women.

Concerning previous and current pregnancy experiences related to time of first antenatal visit, rest and sleep of the studied women. The present study revealed that there were highly statistical significant differences among the studied women between previous and current pregnancy experiences regarding number of antenatal visit, rest and sleep. This finding may be related to increasing the awareness about importance of antenatal visit, rest and sleep through social media education program and study findings were in agreement with **Jacobs et al., (2019)** they assessed Internet usage of women attempting pregnancy and pregnant women in the Netherlands. They reported that the most of the studied women had more than 4 antenatal visits.

Also, these study findings were in agreement with **Sayakhot & Carolan, (2016)** they assessed Internet use by pregnant women seeking pregnancy-related information. They reported that the majority of the studied women had more than 4 antenatal visits also, take enough rest and sleep.

While the present study results were in disagreement with **Bert et al., (2016)** they reported that the majority of the studied women had less than 4 antenatal visits. In the same line **Pinto et al., (2014)**. They assessed the knowledge on minor ailments of pregnancy and its management among antenatal mothers. They reported that the majority of the studied women had less than 4 antenatal visits. This finding may be due to poor transportation to antenatal clinics.

Concerning previous and current pregnancy experiences related to ability to perform daily activities and dietary complement of the studied women. The present study revealed that there were highly statistical significant differences between previous and current pregnancy experiences regarding ability to perform daily activities and dietary complement. This finding may be related to acquiring the knowledge about importance of dietary complement and its effect on daily activities through social media education program. These study findings were in agreement with **Watson et al., (2017)** they reported that the majority of the studied women take daily dietary complement. In the same line **Rosy, (2014)** who assessed the knowledge and practice regarding minor disorders of pregnancy and the incidence among the antenatal mothers. who reported that the majority of the studied women take daily iron and calcium and folic acid.

Concerning previous and current pregnancy of the studied women regarding dealing with backache. The present study revealed that there were statistical significant differences between previous and current pregnancy of the studied women regarding dealing with backache by using hot compress also, there were highly statistical significant differences when taking enough resting during the day and decrease daily walking and standing. This finding may be related to acquiring the knowledge about how to dealing with backache and method of nursing intervention through social media education program. These study findings were in agreement with **Aldossary et al., (2018)** they assessed knowledge and practice of primigravida women: Minor and common pregnancy discomforts. They reported that the majority of the studied women using hot compress when feeling with backache and take enough rest. In the same line **Lee & Moon, (2016)** they assessed utilization and content evaluation of mobile applications for pregnancy, birth, and child care. They reported that the most of the studied women using hot compress when feeling with backache.

While the current study results were in disagreement with **Aziz&Maqsood, (2016)** they assessed self-management of pregnant women regarding minor discomforts in primary health care centers in Erbil city. They reported that the minority of the studied women take enough rest.

Regarding previous and current pregnancy complications of the studied women. The present study revealed that there were no statistical significant differences between previous and current pregnancy complications among studied women, regarding bleeding, hypertension and diabetes mellitus. This finding may be related to healthy life style, practicing exercise, and follow medical and nursing intervention. These study findings were in agreement with **Weston & Anderson, (2014)** they assessed internet use in pregnancy, they reported that less than one quarter of the studied women have pregnancy complications.

In relation to satisfaction of the studied women about social media. The present study showed that about three quarters of the studied women strongly agree that the social media was easy method for communication, fast reach for information need, available at any time, attractive method of learning experiences, safe time, effort and money, positive effect on pregnancy experiences & positive effect on labor outcomes. These study findings were in agreement with **Rezaallah et al., (2019)** they studied social media surveillance of multiple sclerosis medications used during pregnancy and breastfeeding: content analysis, they reported that the majority of the studied women were satisfied about social media because of its availability at any time, save time and effort, and also in agreement with **Chengyan et al., (2019)** they studied Pregnancy-Related Information Seeking and Sharing in the Social Media Era Among Expectant Mothers. They reported that the studied women were more interested in and satisfied about social media and faster solution to the minor discomfort.

Conclusion

Based on the study findings, it is concluded that, the use of social media as an educational method during pregnancy give an actual chance for helping women learn how to cope effectively with pregnancy journey and childbirth process. There was a statistical significant differences among the studied women between previous and current pregnancy experiences in favor of the current pregnancy regarding lifestyle change, taking healthy diet, number of antenatal visit, rest and sleep, dealing with dyspnea, heartburn, information about baby care and three quarters of the studied women strongly agree that the social media was easy method for communication,

Fast reach for information need, available at any time, attractive method of learning experiences, safe time, effort and money, positive effect on labor outcome.

VI. Recommendation

- Integrate social media educational program in nursing protocol for pregnant women.
- Implementing of health education sessions for pregnant women about the benefits of social media educational program in dealing with health problems during pregnancy
- Developing and implementing a mobile web-based pregnancy health care educational program for mothers
- **Further study** to explore the effect of social media educational program on a diverse areas as postnatal, high risk, gynecology and family planning.

Acknowledgement

The researchers would like to thank all participants for their cooperation during the study.

Conflict of Interests

The authors state that there is no conflict of interests regarding this study.

References

- Aldossary, A. D., S. A. Al Shamandy & A. A. Haitham. (2018). A cross sectional study about knowledge and practice of primigravida women: Minor and common pregnancy discomforts. *J. Nurs. Health Sci*;4(1): 32-45.
- Australian Health Practitioner Regulation Agency (AHPRA) (2014): National board policy for registered health practitioners social media policy, AHPRA, viewed 12 September 2016
- Aziz, K. F. and S. H. Maqsood. (2016). Self management of pregnant women regarding minor discomforts in primary health care centers in Erbil city. *Med. J. Babylon*. 13(2): 284-293.
- Bert F, Passi S, Scaioli G, Gualano MR, Siliquini R. (2016). There comes a baby! What should I do? Smartphones' pregnancy-related applications: A web-based overview. *Health Informatics J.* ;22(3):608–17.

- Chengyan Zhu, Runxi Zeng, Wei Zhang, Richard Evans, D ; & Rongrong He, MA (2019). Pregnancy-related information seeking and sharing in the social media Era among expectant mothers: Qualitative Study Published on 04.12.19 invol 21 no 12 December.2019 e13694
- Gagnon K & Sabus C. (2015) Professionalism in a digital age: opportunities and considerations for using social media in health care. *Phys Ther*;95(3):406-414
- Jabbari H, Bakhshian F, Velayati A, Mehrabi E, Allahverdizadeh S, Alikhah H, et al. (2014): Effectiveness of presence of physician and midwife in quantity and quality of family planning services in health care centers. *J Family Community Med*; 21(1): 1-5.
- Jacobs, E. J., van Steijn, M. E., & van Pampus, M. G. (2019). Internet usage of women attempting pregnancy and pregnant women in the Netherlands. *Sexual & Reproductive Healthcare*, 21, 9-14.
- Jianlei Hao, Bingbing Gao (2017). Advantages and Disadvantages for Nurses of Using Social Media Volume 1 • Issue 1 • 001 www.scientonline.org *J Primary Health Care Gen Practice* This article was published in the following *Scient Open Access Journal: Journal of Primary Health Care and General Practice*
- Lee Y, Moon M. (2016). Utilization and content evaluation of mobile applications for pregnancy, birth, and child care. *Healthcare Informatics Research* 22(2):73-80.
- Lustria, M., S. Smith, and C. & Hinnant, (2016): Exploring digital divides: An examination of eHealth technology use in health information seeking, communication and personal health Information management in the USA. *Health Informatics J*; 16(3): 224-243.
- Mohamadirizi S, Bahadoran P, & Fahami F. (2017): Comparison between the impacts of e-learning and booklet education on Primigravida Women's Satisfaction about postpartum care. *IJOGI*;16:1-8
- Overdijk SB, Velu AV, Rosman AN, van Beukering MDM, Kok M, (2018). Steegers-Theunissen RPM. The usability and effectiveness of mobile health technology-based lifestyle and medical intervention Apps supporting health care during pregnancy: Systematic review. *JMIR MHealth UHealth*;6(4):e109.
- Pinto, G., Sandström, A., & Stephansson, O. (2014). Duration of second stage of labor and instrumental delivery as risk factors for severe perineal lacerations: population-based study. *BMC pregnancy and childbirth*, 17(1), 72.
- Rezaallah B, Lewis D, Pierce C, Zeilhofer H-F, & Berg B-I. (2019). Social Media Surveillance of Multiple Sclerosis Medications Used During Pregnancy and Breastfeeding: Content Analysis. *J Med Internet Res*;21: e13003
- Sayakhot P, Carolan-Olah M. (2016). Internet use by pregnant women seeking pregnancy-related information: A systematic review. *BMC Pregnancy and Childbirth*;16(1), 65
- Sensis Social Media Report (2016): , How Australian people and businesses are using social media, Sensis Social Media Report, viewed 10 September 2016,
- Wallwiener S, Müller M, Doster A, Laserer W, Reck C, Pauluschke-Fröhlich J, et al. (2016). Pregnancy eHealth and mHealth: User proportions and characteristics of pregnant women using Web-based information sources-A cross-sectional study. *Archives of Gynecology and Obstetrics* 294(5):937-944
- Watson ED, Macaulay S, Lamont K, Gradidge P, Pretorius S, Crowther NJ, (2017). The effect of lifestyle interventions on maternal body composition during pregnancy in developing countries: A systematic review. *Cardiovasc J Afr*;28(6):397-403.
- Weston C, & Anderson JL. (2014). Internet use in pregnancy. *Br J Midwifery*;22:488-93.
- World Health Organization (2014): Trends in maternal mortality: 1990 to 2013. Available at: http://apps.who.int/iris/bitstream/10665/112682/2/9789241507226_eng.pdf?ua=1. Last accessed on 23 Feb 2015.