

EFFECT OF SOCIAL MEDIA ON LABOUR OUTCOMES AND WOMEN SATISFACTION

¹Heba Abdelrehem Mohamed Zedan, ²Dr. Amina Mohamed Rashad
El-Nemer, ³Dr. Hanan El-Sayed Mohamed El-Sayed

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

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

¹Assist.Prof.Dr of Woman's Health and Midwifery Nursing, Faculty of Nursing,
Mansoura University, Egypt.

Abstract:

Background: Social media has become one of the most popular sources of information for pregnant women. Prenatal care is an efficient intervention in the improvement of pregnancy outcomes. **Aim:** This study aimed to evaluate the effect of social media on labour outcome and women satisfaction. **Study design:** A quasi-experimental research design was utilized. **Setting:** The study was carried out in Antenatal Clinic at Mansoura New General Hospital, Mansoura city, Dakahlia governorate, Egypt. **Sample type:** A purposive sample was utilized. **Study subjects:** The study subjects included 50 pregnant women who were attending predetermined setting according to inclusion criteria. **Tools:** Four tools were used, a structure interview questionnaire, questions to assess labor outcomes, Apgar score, 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 in favor of the current pregnancy regarding mode of delivery, occurrence of laceration, perineal tears, also increase the rate of vaginal delivery and decrease the rate of cs among current study. The results proved that decrease the rate of problems happened during labor in current labor than in previous labor, also, 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. **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 and childbirth process. **Recommendations:** Integrate social media educational program in nursing protocol for pregnant women. Also, developing and implementing a mobile web-based pregnancy health care educational program for mothers. **Keywords:** Antenatal care, labour outcomes, social media, satisfaction.

I. Introduction

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). Social media can also maintain health behaviors, such as maintaining sufficient physical activity and having a healthy diet. Pregnant women are increasingly relying on social media as

the sources of health information and services for self-care and infant care (Guerra et al., 2016). Social media is feasible and acceptable to support pregnancy care, including promoting a healthy lifestyle and providing health information in high income countries (Overdijkink et al., 2018).

Maximum maternal deaths happen during labor, delivery, or within 24h of labour. The WHO estimates that 300

million women in the developing world suffer from short-term or long-term morbidities attributed to pregnancy and childbirth. The current maternal mortality ratio in Egypt was estimated to be 37 deaths per 100,000 live births are due to lower level of ANC and lower accessing to health care units (**World Data Atlas , 2017**).

Social media offers the public a wide range of health information. A vast majority of people search online healthcare information through online sources to diagnose themselves or the others. However, some authors of the information are usually anonymous. Additionally, the information may be incomplete, informal or not referenced, and this makes people hard to identify the reliability of the information (**Gagnon & Sabus, 2015**).

The effectiveness of social media has several implications for future practice. The use of social media can be effective in promoting maternal well-being. The positive effects in developing countries such as Indonesia and China imply that the use of mobile technologies in pregnancy care can be less restricted by social development (**Huesch et al., 2016**). Social media can be widely adopted in different areas and have greater public health impact. Social media have widely used in improving maternal well-being during the pregnancy period (**Miremberg et al., 2018**).

Social media networking such as Facebook and whats app are highly popular platforms and include groups and channels for prenatal periods that appear to provide visual and textual information about pregnancy, parenting, social support, and humor, was important for pregnant women. Anxiety arising from inexperience can be relieved by

sharing of experiences with those in the same situation via electronic communication (**Sama et al., 2018**).

Significance of the study

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**). There is a limited research about effect of social media on labour outcomes, so this research was conducted.

Aim of the Study: The study aimed to evaluate the effect of social media on labour outcomes and women satisfaction.

Study Hypotheses: Women who joined antenatal social media group report positive labour outcomes and more satisfaction.

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

Study setting: This study was conducted 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 planning.

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

Study subjects: The study subjects included 50 pregnant women whowereattending 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

The calculated sample size of study was 50 women using one arm interventional study. 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.

Tools of Data Collection:

Tool I: A structure Interview Questionnaire:

It was designed by researcher using the national and international references. It consists of two parts: **Part I:** It includes socio-demographic characteristics of woman's age, level of education, occupation, residence, address, telephone number, monthly income. **Part II:** It includes menstrual, obstetrics history such as age 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, reason for visit

Tool II: Questions to assess labor outcomes:

It was designed by researcher using the national and international references. It includes complications that occur during labor and mode of delivery.

Tool III: Apgar score. It was adopted from (Apgar, 1953 & Casey et. al., 2001).

It is used to assess the condition of newborns, it is a 10-point assessment score typically recorded at 1 and 5 minutes after birth and consists of five items: heart rate, respiratory effort, muscle tone, reflex irritability and color; each of which has a score of 0, 1, or 2. Total Score = 10, Normal = 7-10, Mild asphyxia = 4-6, Severe asphyxia = 0-3. Also question related to requirement of the neonate to be admitted to the intensive care unit, answered by (a) Yes = (1) and (b) No = (0).

Tool VI: Satisfaction likert scale:

It was developed by the researcher to assess women's satisfaction regard social media and satisfaction about content introduced 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.

The validity of the 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 VI and reliability of tool III Apgar score was

adopted from Apgar, (1953) it was (0.79). So, the study tools were reliable.

Pilot Study:

A pilot study was conducted on 5 women 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.

Field work:

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 soico 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 on the following issues (personal, mental, and physical health, nutrition and medication complement, self-care for minor discomfort and display solution of minor discomfort during third trimester, follow up visits, advantages preparation of natural delivery, and appropriate place of a natural delivery, breastfeeding and family planning counseling, neonatal care and abnormal infant signs .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 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 done to test for the internal consistency of the tools used in the study. Statistical significance was set at $p < 0.05$.

I. 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
Mean \pm SD 26.2 \pm 2.7		
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 \pm 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 11 years, 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).

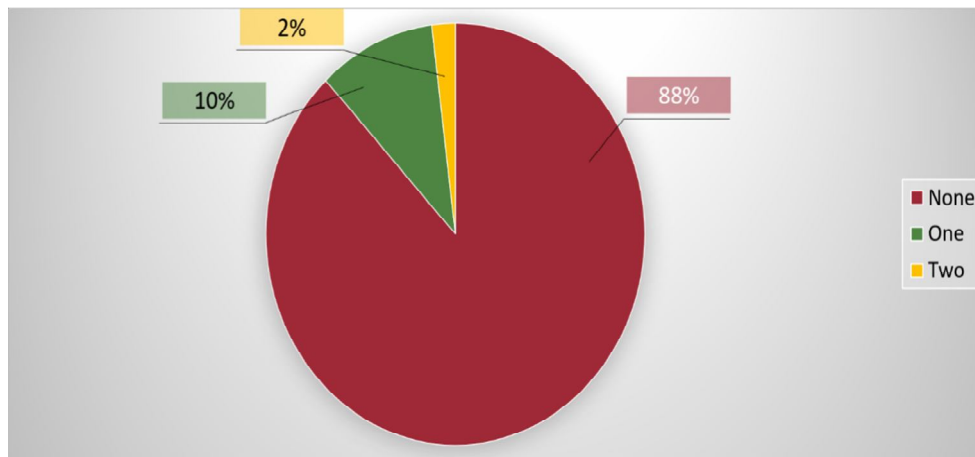


Figure 1. Distribution of the low birth weight baby of the studied women

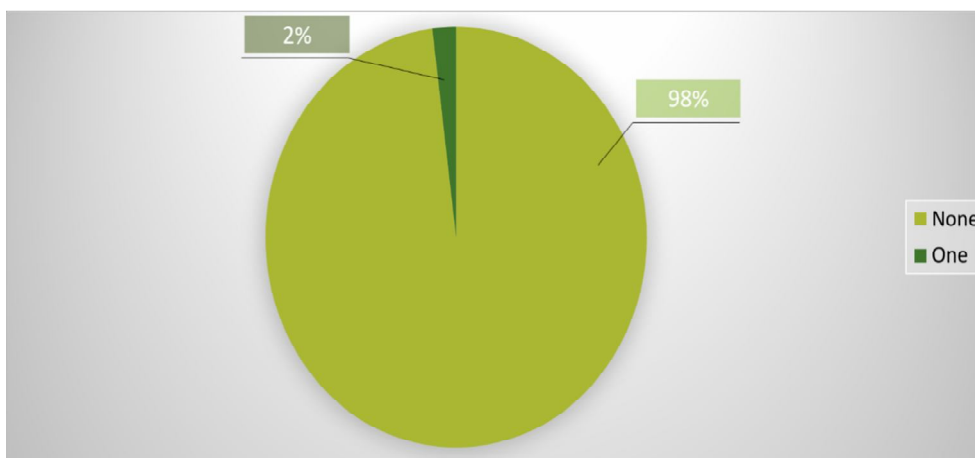


Figure 2. Distribution of the stillbirth of the studied women

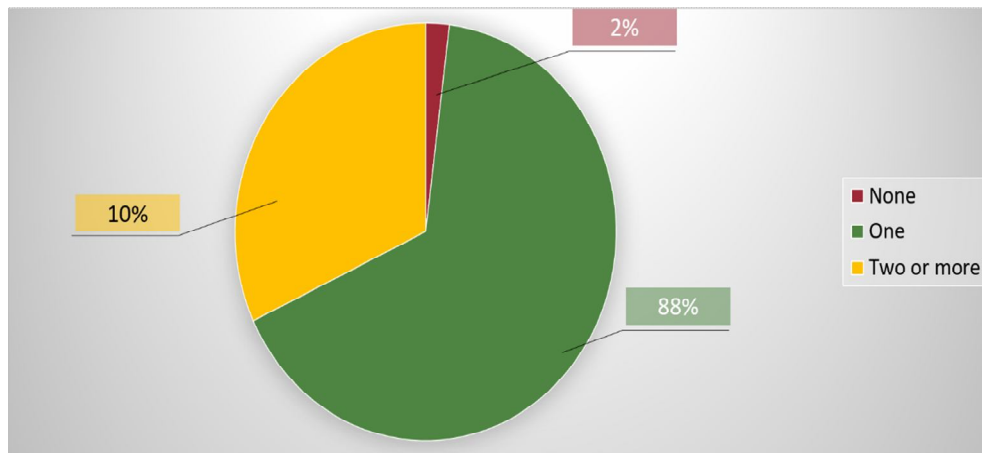


Figure 3. Distribution of the living children of the studied women

Table 3: Comparison between previous and current pregnancy of studied women regarding problems that occur during labor.

Problems during labor	Previous pregnancy (n=50)		Current pregnancy (n=50)		Significant test	
	N	%	N	%	X ²	P
Problems during labor						
No	14	28.0	40	80.0		
Yes	36	72.0	10	20.0	27.214	<0.001
Laceration						
No	9	25.0	10	100.0		
Yes	27	75.0	0	0.0	18.158	<0.001
Bleeding						
No	21	58.3	0	0.0		
Yes	15	41.7	10	100.0	10.733	<0.001
Retained placenta						
No	35	97.2	10	100.0		
Yes	1	2.8	0	0.0	0.284	0.594
Obstructed labor						
No	35	97.2	10	100.0		
Yes	1	2.8	0	0.0	0.284	0.594
Perineal tears						
1 st degree perineal tear	36	100.0	4	40.0		
None	0	0.0	6	60.0	24.840	<0.001

Table three. Showed that there were highly statistical significant differences between previous and current pregnancy of studied women in favor of current pregnancy regarding laceration,

bleeding and perineal tears (P<0.001). While there were no statistical significant differences between them regarding retained placenta and obstructed labor (P= 0.594 respectively).

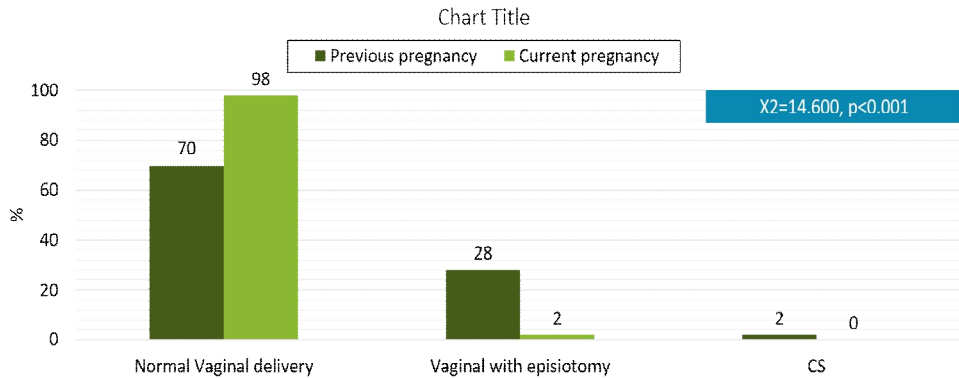


Figure 4. Comparison between previous and current pregnancy of studied women regarding mode of delivery

Table 4: Frequency distribution of the studied women according to their baby Apgar score.

Apgar score	Current pregnancy (n=50)	
	N	%
0 – 3	1	2.0
4 – 7	2	4.0
8 – 10	47	94.0
Mean ±SD	9.3 ±1.6	

Table four: showed that most of the babies (94.0%) has apgar score 8 – 10 and the baby had good health with the mean (9.3 ±1.6).

Table 5: Frequency distribution of studied women according to their satisfaction about social media

Items	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 five. 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 & labor outcomes

Discussion

The study aimed to evaluate the effect of social media on labour outcomes and women satisfaction. The present study findings were supported the study hypotheses, women who joined antenatal social media group report positive labour outcomes and more satisfaction.

As regards, previous and current pregnancy of studied women regarding occurs of problems during labor. The present study showed that there were highly statistical significant differences between previous and current pregnancy of studied women regarding laceration, bleeding and perineal tears. While there were no statistical significant differences between them regarding retained placenta and obstructed labor. These study findings were in disagreement with **Gururaniet al., (2016)** they assessed minor disorder of pregnancy and its home management. They reported that the majority of the studied women had perineal tears and bleeding. The difference of the studied result may be due to decrease practicing kegal's exercise and low educational level of the studied women and unhealthy life style.

Concerning previous and current pregnancy of studied women regarding mode of delivery. The present study revealed that there were highly statistical significant differences between previous and current pregnancy of studied women regarding mode of delivery. This finding may be related to knowledge given to the woman about importance of normal delivery through social media education program and curiosity of studied women to know more about normal delivery. 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 normal delivery.

In the same line the findings were in agreement with **Narasimhulu et al., (2016)** they assessed patterns of internet use by pregnant women, and reliability of pregnancy related searches. They reported that nearly all of the studied women had normal delivery. While, the present study findings were dissimilarity with that of **Wallwiener et al., (2016)**. They reported that the minority of the studied women had normal delivery.

Regarding new born APGAR score in current pregnancy of the studied women. The present study showed that most of the babies have total score 8 – 10 and the baby had good health. This was inconsistent with **Firouzbakht et al., (2015)** they assessed the effectiveness

of prenatal intervention on pain and anxiety during the process of childbirth they reported that most babies had APGAR score more than 8. In the same line the results were inconsistent with **Ellis & Roberts(2019)**. They exploring the use and quality of Internet discussion forums in pregnancy a qualitative analysis birth and reported that most babies had APGAR score more than 7.

While, the present study findings were dissimilarity with **Dahlen et al. (2013)** they assess maternal and perinatal outcomes amongst low risk women giving birth in water compared to six birth positions on land and reported that the minority of the studied women most babies had APGAR score more than 8.

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.

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 difference among the studied women between previous and current pregnancy experiences in favor of the current pregnancy regarding occurrence of labour complications mode of delivery, occurrence of laceration and perineal tears, also new born Apgar score. Also, 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.

Recommendations

- 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 labour outcomes.
- 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.

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Conflict of Interests

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

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