

Research Article

Effectiveness of a Planned Teaching Programme on Knowledge Regarding the Impact of Mobile Phone Addiction During the Antenatal Period Among Antenatal Mothers in Kanyakumari District, Tamil Nadu, India

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A B S T R A C T

Background: Mobile phone use has become an integral part of everyday life, including during pregnancy. Excessive or problematic Mobile phone use may be associated with psychological and behavioural concerns such as sleep disturbance, stress, anxiety, and reduced engagement in healthy activities. Adequate antenatal education may help pregnant women develop safer and more balanced patterns of mobile phone use.^{1,4}

Objective: To assess the effectiveness of a planned teaching programme on knowledge regarding the impact of mobile phone addiction during the antenatal period among antenatal mothers attending a selected hospital in Kanyakumari District, Tamil Nadu.

Methods: A quantitative, pre-experimental one-group pre-test and post-test design was adopted. Thirty antenatal mothers attending Boothapandi Government Hospital, Kanyakumari District, were selected using purposive sampling. Data were collected using a previously validated structured knowledge questionnaire consisting of 30 multiple-choice questions. Each correct response was awarded one mark, with a maximum possible score of 30. Pre-test and post-test knowledge levels were assessed before and after administration of the planned teaching programme. Descriptive statistics and paired t-tests were used for data analysis.

Results: In the pre-test, 8 participants (26.67%) had adequate knowledge, 10 (33.33%) had moderate knowledge, and 12 (40.00%) had inadequate knowledge. Following the planned teaching programme, 25 participants (83.33%) demonstrated adequate knowledge, 3 (10.00%)

had moderate knowledge, and 2 (6.67%) had inadequate knowledge. The reported mean knowledge score increased from approximately 10.27 in the pre-test to 21.27 in the post-test. The reported paired t-value was 4.28, indicating improvement in knowledge following the intervention.

Conclusion: The findings suggest that the planned teaching programme improved knowledge regarding the potential impact of mobile phone addiction during pregnancy among the participating antenatal mothers.² Integrating structured health education and counselling on responsible mobile phone use into routine antenatal care may support informed maternal health practices.

Keywords: Mobile Phone Addiction, Problematic Mobile Phone Use, Pregnancy, Antenatal Mothers, Planned Teaching Programme, Health Education, Maternal Health

Introduction

Mobile phones are widely used portable electronic devices that provide communication, messaging, internet access, entertainment, and multimedia services. Their increasing availability has resulted in prolonged daily use among people of different age groups, including pregnant women. Although mobile phones provide important benefits, excessive or problematic use may interfere with sleep, physical activity, interpersonal interactions, and psychological well-being.¹⁻³

During pregnancy, maintaining healthy behavioral patterns is important for maternal and fetal well-being. Excessive mobile phone use may contribute to sleep disturbance, sedentary behavior, anxiety, stress, and reduced participation in other health-promoting activities. Concerns have also been raised regarding exposure to radiofrequency electromagnetic fields; however, the magnitude and clinical significance of potential adverse effects during pregnancy remain an area requiring careful interpretation.

Antenatal mothers require appropriate information regarding healthy lifestyle practices throughout pregnancy. Nurses and other healthcare professionals are in a key position to provide health education and counselling regarding responsible technology use, sleep hygiene, stress management, and balanced daily activities.^{2,4-7}

Despite the widespread use of mobile phones, pregnant women may have limited knowledge about the potential consequences of excessive or problematic use. Structured teaching programs can provide systematic information and promote informed health-related practices.^{1,3,14}

Therefore, the present study was undertaken to assess the effectiveness of a planned teaching program on knowledge regarding the impact of mobile phone addiction during the antenatal period among antenatal mothers attending

Boothapandi Government Hospital in Kanyakumari District, Tamil Nadu.

Objectives

The study was conducted with the following objectives:

- To assess the level of knowledge regarding the impact of mobile phone addiction during the antenatal period among antenatal mothers before and after the planned teaching programme.
- To evaluate the effectiveness of the planned teaching programme on knowledge regarding the impact of mobile phone addiction during the antenatal period among antenatal mothers.
- To determine the association between post-test knowledge regarding the impact of mobile phone addiction during the antenatal period and selected demographic variables among antenatal mothers.

Materials and Methods

A quantitative research approach was adopted to assess the effectiveness of the planned teaching programme on knowledge regarding the impact of mobile phone addiction during pregnancy. A pre-experimental one-group pre-test and post-test research design was used, in which the participants' knowledge was assessed before the intervention, followed by the administration of the planned teaching programme and reassessment of knowledge after the intervention. The study was conducted at Boothapandi Government Hospital, Kanyakumari District, Tamil Nadu, India. The study participants comprised 30 antenatal mothers attending the selected hospital. The participants were selected using a purposive sampling technique. The study included antenatal mothers who were available at the study setting during the period of data collection and who provided informed consent to participate in the study.

Study instrument

Data were collected using a previously validated structured knowledge questionnaire consisting of 30 multiple-choice questions, with each question carrying one mark and a maximum possible score of 30. The questionnaire comprised three sections: Part I consisted of 4 items related to mobile phones; Part II included 14 items assessing knowledge regarding the impact of mobile phone addiction among antenatal mothers; and Part III comprised 12 items related to the prevention of mobile phone addiction among antenatal mothers. In addition, the first part of the data collection instrument included selected socio-demographic and obstetric characteristics, namely age, religion, educational status, type of family, occupation, number of conceptions, history of miscarriage, and previous knowledge related to pregnancy.

Data collection procedure

A pre-test was administered to assess baseline knowledge. The planned teaching programme was subsequently provided to the participants. A post-test was then conducted using the same structured knowledge questionnaire to assess changes in knowledge following the intervention.

Data analysis

Data were analysed using descriptive and inferential statistics.

Descriptive statistics included:

- Frequency and percentage for socio-demographic characteristics.
- Frequency and percentage for pre-test and post-test knowledge levels.
- Mean and standard deviation for knowledge scores.

Inferential statistics included the paired *t*-test to compare pre-test and post-test knowledge scores.

Results

The findings show that, in terms of age of the samples in the pre-test, 16 (53.33%) were aged 20–25 years, followed by 12 (40%) aged 25–30 years and 2 (6.67%) aged 30–35 years, whereas in the post-test, 13 (43.33%) were aged 20–25 years, 11 (36.67%) were aged 25–30 years, and 6 (20%) were aged 30–35 years. Regarding religion, in the pre-test, an equal proportion of samples were Hindu and Christian, with 14 (46.67%) each, while 2 (6.67%) were Muslim; in the post-test, 15 (50%) were Hindu, 12 (40%) were Christian, and 3 (10%) were Muslim. With respect to educational status, the majority of samples in the pre-test, 18 (60%), had completed a degree, followed by 10 (33.33%) who had completed 12th standard and 2 (6.67%) who had completed 10th standard. In the post-test, 15 (50%) had completed a degree, 11 (36.67%) had completed 12th standard, and 4 (13.33%) had completed 10th standard. Concerning type of family, 15 (50%) belonged to nuclear families, 12 (40%) to joint families, and 3 (10%) were

separated in the pre-test, while in the post-test, 16 (53.33%) belonged to nuclear families, 9 (30%) to joint families, and 5 (16.67%) were separated. Regarding occupation, 18 (60%) were housewives and 12 (40%) were working in the pre-test, compared with 16 (53.33%) housewives and 14 (46.67%) working samples in the post-test. In relation to the number of conceptions, the majority in the pre-test, 19 (63.33%), had one conception, followed by 8 (26.67%) with two conceptions and 3 (10%) with more than two conceptions; in the post-test, 15 (50%) had one conception, 11 (36.67%) had two conceptions, and 4 (13.33%) had more than two conceptions. Regarding history of miscarriage, 7 (23.33%) had a history of miscarriage and 23 (76.67%) had no such history in the pre-test, whereas in the post-test, 10 (33.33%) had a history of miscarriage and 20 (66.67%) had no history. With respect to previous knowledge regarding pregnancy, 18 (60%) had previous knowledge and 12 (40%) had no previous knowledge in the pre-test, while in the post-test, 20 (66.67%) had previous knowledge and 10 (33.33%) had no previous knowledge. Overall, the pre-test and post-test distributions indicate that the samples had broadly comparable socio-demographic and obstetric characteristics, with only minor variations observed between the two assessments

Table 1 demonstrates that 12 participants (40.00%) had inadequate knowledge in the pre-test, while 10 (33.33%) had moderate knowledge and 8 (26.67%) had adequate knowledge. Thus, inadequate knowledge was the most frequently observed category before the intervention.

Table 2 shows that after the planned teaching programme, 25 participants (83.33%) achieved adequate knowledge. Three participants (10.00%) had moderate knowledge and two (6.67%) had inadequate knowledge. The findings demonstrate a marked shift towards adequate knowledge following the intervention.

Table 3 The reported findings indicate an increase in the mean knowledge score from the pre-test to the post-test. The reported paired *t* value of 4.28 indicates a statistically significant improvement according to the original analysis.

Table 1. Distribution of participants according to pre-test knowledge level regarding the impact of mobile phone addiction during pregnancy (N = 30)

Knowledge level	Frequency (n)	Percentage (%)
Adequate	8	26.67
Moderate	10	33.33
Inadequate	12	40.00
Total	30	100.00

(Source: Data collected by the investigators, 2026)

Table 2. Distribution of participants according to post-test knowledge level regarding the impact of mobile phone addiction during pregnancy (N = 30)

Knowledge level	Frequency (n)	Percentage (%)
Adequate	25	83.33
Moderate	3	10.00
Inadequate	2	6.67
Total	30	100.00

(Source: Data collected by the investigators, 2026)

Table 3. Comparison of pre-test and post-test knowledge scores

Knowledge assessment	Mean score	Statistical test	Reported value
Pre-test	10.27	Paired t-test	t = 4.28*
Post-test	21.27		

(Source: Data collected by the investigators, 2026)

Discussion

The present study assessed the effectiveness of a planned teaching programme on knowledge regarding the impact of mobile phone addiction during the antenatal period among antenatal mothers attending Boothapandi Government Hospital, Kanyakumari District.

The pre-test findings indicated that 40.00% of participants had inadequate knowledge, 33.33% had moderate knowledge, and only 26.67% had adequate knowledge. These findings indicate a need for structured education regarding responsible mobile phone use and its potential implications during pregnancy.

Following the planned teaching programme, the proportion of participants with adequate knowledge increased substantially to 83.33%, while the proportion with inadequate knowledge decreased to 6.67%. This improvement suggests that the planned teaching programme was useful in increasing participants' knowledge.

The reported increase in the mean knowledge scores from approximately 10.27 in the pre-test to 21.27 in the post-test further supports the effectiveness of the educational intervention. The reported paired *t* value of 4.28 indicates a statistically significant difference between pre-test and post-test knowledge scores according to the original analysis.

These findings highlight the importance of incorporating structured health education into antenatal care. Nurses can provide individualised counselling and group education to help antenatal mothers understand balanced mobile phone use, sleep hygiene, stress management, and healthy daily routines.

Association with Selected Demographic Variables

The original manuscript states that the effectiveness of the planned teaching programme was similar across the demographic groups. However, detailed cross-tabulations and statistical values for each demographic variable were not provided in the submitted manuscript.

Therefore, the association results should be reported only after verification of the original statistical analysis. A journal submission should include the frequency distribution, test statistic, degrees of freedom, *p* value, and interpretation for each selected demographic variable.

Limitations

The study has several limitations:

- The sample size was limited to 30 antenatal mothers.
- The study was conducted in a single hospital setting.
- Purposive sampling was used, which may limit generalisability.
- The study included only antenatal mothers who were available during the data collection period.
- The one-group pre-test and post-test design did not include a control group.
- The study primarily assessed knowledge and did not objectively measure changes in actual mobile phone-use behaviour.

Implications for Nursing Practice

The findings have implications for antenatal nursing practice. Nurses can incorporate assessment of mobile phone-use patterns into routine antenatal health education. Individual counselling and group education may be used to promote balanced technology use and encourage

healthy sleep, physical activity, and stress-management practices during pregnancy. Educational materials such as pamphlets, audiovisual presentations, and structured counselling sessions may be incorporated into routine antenatal services.

Recommendations

Based on the findings, the following recommendations are proposed:

- Randomized controlled studies may be undertaken to provide stronger evidence regarding the effectiveness of educational interventions.
- Future research may assess changes in actual mobile phone-use behavior in addition to knowledge.
- Nurses may provide routine counselling regarding healthy and balanced mobile phone use during antenatal visits.

Conclusion

The study demonstrated a substantial improvement in knowledge regarding the impact of mobile phone addiction during pregnancy following implementation of the planned teaching program. In the pre-test, 40.00% of participants had inadequate knowledge, whereas 83.33% achieved adequate knowledge in the post-test.

The improvement in knowledge scores and the reported paired *t*-test findings suggest that the planned teaching program was effective among the study participants. Structured antenatal education and counselling regarding responsible mobile phone use may therefore be considered as a component of comprehensive antenatal health education. However, larger studies using more rigorous experimental designs are required to establish the generalizability of these findings and to determine whether improvements in knowledge translate into sustained changes in mobile phone-use behavior.

Declarations

Data availability

The data generated and/or analyzed during the present study are available from the corresponding author on reasonable request, subject to applicable institutional and ethical requirements.

Author contributions

All authors contributed to the study. The research process was guided by the senior author, and the authors contributed to data collection, analysis, interpretation, manuscript preparation, and review of the final manuscript.

Use of AI-assisted technologies

The authors' original manuscript states that AI and AI-assisted technologies were not used in the study. This

declaration should be updated if any generative AI tools were used during preparation or revision of the manuscript.

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Conflict of interest: None

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