Utilizing mHealth for implementing the WHO ANC model: A pilot study

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RCOG 2022 WORLD CONGRESS

Introduction

- Increasing focus on the content and quality of care
- New antenatal care model with 8 "contacts" and objectives to ensure a "positive pregnancy experience"
- Respectful, individualized and person-centred care at each visit
- Interventions in the model addressed under 5 domains

WHO FANC Model	2016 WHO ANC Model
First Trimester	
Visit 1 : 8-12 weeks	Contact 1 : up to 12 weeks
Second Trimester	
Visit 2 : 24-26 weeks	Contact 2: 20 weeks Contact 3 : 26 weeks
Third Trimester	
Visit 3 : 32 weeks Visit 4 : 36-38 weeks	Contact 4 : 30 weeks Contact 5 : 34 weeks Contact 6 : 36 weeks Contact 7 : 38 weeks Contact 8 : 40 weeks

Aims and Objectives

- To compare the quality of antenatal care delivered by the use of a web-based mobile application compared to the standard care protocol as assessed by the content of care

Methodology

- Study Design : Multicentric prospective open-label RCT
- Study Site: Sub-district hospital and primary health centres in North India
- Study Duration: December 2019 to December 2021
- Randomization: Computer generated random allocation tables

All women booked before 20 weeks, possessing smartphone or having access to one and willing to give consent were included

Development of the app

Patient Registration

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Recording demographic details; medical, surgical, obstetrical history

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Antenatal Clinic Schedule activity recaller designed for each visit

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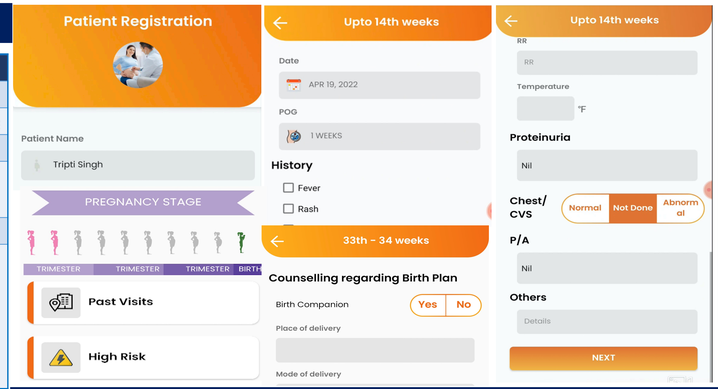
Generation of specific advise for each patient at the end of the visit

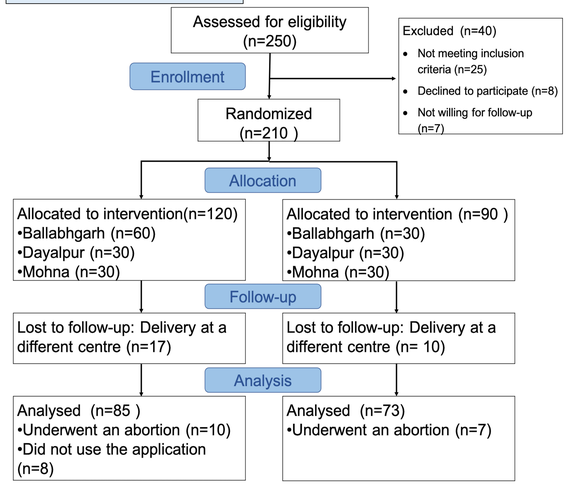


Antenatal Clinic Schedule activity recaller

- History (visit specific)
- Examination (visit specific)
- Investigations (visit specific):
- Advice (medications /diet/exercise/specific treatment/danger signs)
- Planning delivery (Mode, time, and preparations required)
- Advice on minor ailments encountered in pregnancy

Results

Flow of Patients



Baseline demographaic variables were comparable

Domains	Components of care	Cases (n=85) (%)	Controls (n=73) (%)	p value
History Obtained	Medical History	80 (94.1)	22 (30.1)	0.0001
	Surgical History	78 (91.8)	10 (13.7)	0.0001
	Drugs	78 (91.8)	64 (87.7)	0.437
	Tobacco Use	77 (90.6)	21 (28.8)	0.0001
	Smoking	77 (90.6)	23 (31.5)	0.0001
	Alcohol	76 (89.4)	22 (30.1)	0.0001
	IPV	76 (89.4)	14 (19.1)	0.0001
	Fetal movement	83 (97.6)	66 (90.4)	0.082
Physical Examination	Height	85 (100)	70 (95.9)	0.096
	Weight	85 (100)	72 (98.6)	0.462
	Blood Pressure	80 (94.1)	66 (90.4)	0.549
	Fundal height	56 (65.9)	26 (35.6)	0.0001
	FHS	56 (65.9)	26 (35.6)	0.0001
Patient Counselling	Dietary	80 (94.1)	38 (52)	0.0001
	Exercise	79 (92.9)	34 (46.6)	0.0001
	Tetanus	83 (97.6)	65 (89)	0.045
	IFA and calcium supplementation	82 (96.5)	69 (94.5)	0.705
	Breastfeeding	44 (51.7)	12 (16.4)	0.0001
	Birth Plan	22 (25.9)	7 (9.6)	0.008
	Pain relief in labour	19 (22.3)	8 (11)	0.058

Number of Visits

Number of Visits	Cases (n=85) (%)	Controls (n=73) (%)	p value
0-4	16 (18.8)	45 (61.6)	p<0.001
5-8	65 (76.5)	24 (32.9)	
>8	4 (4.7)	4 (5.5)	

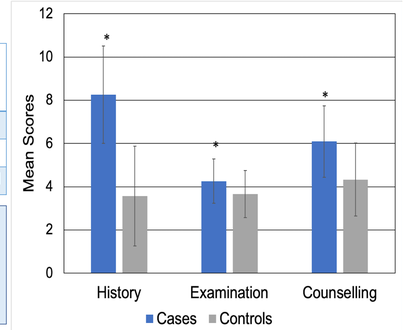
Antenatal Investigations

Antenatal Investigations	Cases (n=85) (%)	Controls (n=73) (%)	p value
Hemogram	85 (100)	68 (93.2)	0.020
Urine	72 (92.9)	65 (89)	0.415
USG	76 (89.4)	41 (56.2)	0.0001

Using the PreMAPeQ questionnaire, higher mean satisfaction score was seen among the cases

Quality of Care

Quality Scores	Cases	Controls	p value
History	8.26 ± 2.26	3.57 ± 2.30	<0.001
Examination	4.26 ± 1.03	3.66 ± 1.09	0.001
Counselling	6.09 + 1.65	4.33 + 1.69	<0.001



Discussion

- Utility of mHealth system and impact on quality of antenatal care demonstrated by other studies also (Benski et al, McNabb et al)
- Comprehensive inclusion of a larger number of parameters and emphasis on indicators affecting quality
- However, larger sample size required for impact on perinatal outcomes

Conclusion

- mHealth technology has an immense potential to improve the quality of healthcare
- Significant improvement seen in this study with the use of mobile technology in parameters such as communication with the patients and counselling provided, resulting in a "positive pregnancy experience"

References

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