

Title:“ Effectiveness of self learning material on practices of In-service Auxiliary Nurse and Midwives(ANMs) related to Behavior Change communication(BCC) for Reproductive and Child Health (RCH) care,

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Abstract

Introduction: Introduction: As per WHO, the global estimates for the year 2017 indicate that there were 295 000 women died during and following pregnancy and childbirth however most could have been prevented. Behavior Change Communication (BCC) is one of the most cost effective ways of targeting the issues of RCH care. There is a need to sensitize the Auxiliary Nurse and Midwives (ANMs) regarding the benefits of adopting a systematic BCC intervention (RMNCH+A in India 2013).

Objective:

- 1: To develop self learning material on BCC for RCH care
- 2: To assess effectiveness of Self learning material (SLM) on practices of ANMs regarding BCC for RCH care

Method: The quantitative research approach evaluative in nature and One group pretest and repeated post-test research design to assess the retention of learning among 94 study sample after reading the SLM was used for present study. Researcher developed SLM as an intervention of study with learning objective to describe the process of Behaviour Change Communication and related role of ANMs for RCH care and got validated by 21 subject experts. Structured questionnaire as an assessment tools consisting items on reported practices related to providing need based relevant information during RCH care, selection of audience and use of various BCC approaches and methods on selected RCH care component was developed and got validated by 21 subject experts. Pre-test assessment of 94 In-service ANMs (ISAs)selected from 16 health units of Delhi was done using validated tool ,SLM was introduced using group discussion method followed by reading at own pace of study sample . Post test-1 assessment was done after one month of introducing SLM then assessment for post test -2 was done after three months to assess the retention

Result And Conclusion : Findings shows that most of the In-service ANMs 61(64.9%) scored below 50% marks in pre test assessment done before reading the SLM . It reveals that ISAs had inadequate practices regarding BCC for RCH care. However after reading the SLM majority of ISAs 89(94.7%) and 56(59.6%) scored more than 75% marks in post test-I and II respectively. Finding revealed that SLM was significantly effective to enhance the pre-test mean practice score from 51.05 to 99.25 and 86.90 in post test-I and II respectively ($p<.001$).

Discussion:

In congruence to the findings of present study it was revealed by Novick,(2009),that target people for MCH care desired comprehensive and relevant information to clear their doubts, and enable them take informed decisions similarly, the women in study of Bridgit Omowumi(2013) et.al mentioned issues about which they wanted more information.

Background of the study

Behavior Change Communication (BCC) is one of the most cost effective ways of targeting the issues of MCH. It is the planned and strategic usage of communication to strengthen health seeking behaviors through health literacy, can be either focused at the community or individual level.

Global Situation : As per WHO, the global estimates for the year 2017 indicate that there were 295 000 women died during and following pregnancy and childbirth however most could have been prevented.. (WHO¹ 2019)

Indian scenario: Reduction in MMR has been the national priority since first five year plan till the 12th Five year plan. (MOHFW statistic report² 2015)

In reproductive and child health (RCH) program Behaviour change communication (BCC) have specific role to play for bringing desirable behaviour changes in health practices of people as Neonatal and childhood mortality are preventable and once detected, they are treatable. (RMNCH+A document ³2013)

Strategies to reduce Maternal, Neonatal and Childhood Mortality

Many important MCH issues related to ANC; such as educating women regarding skilled attendance at birth, exclusive breastfeeding for six months, child immunization, emergency obstetric care when necessary and post-natal care (PNC) for mothers and babies.

BCC is needed to promote positive health practices for maternal and newborn health, and to discourage harmful practices. Village level interpersonal communication and community mobilization, are however the major forms of BCC which lead to changed behaviour (Operational Guidelines on Maternal and Newborn Health by GOI ⁴ 2010).

BCC strategy requirement as mentioned by GOI on Maternal and New Born Health include :

- Knowledge of the determinants of key behaviours
- Audience segmentation and the choice of appropriate message, medium and communicator to reach mothers, their families and community influencers.
- Measures to monitor and evaluate effectiveness of the BCC components.

Need of the Study

In the results of follow up study conducted by Sarkar R ⁵, 70 % ANMs expressed that they do not carry out post-natal visits as they do not get adequate experience during training. Majority (90%) of in service ANMs do not coordinate their activities with local community as they do not get adequate experience in coordinating their activities with local community leaders during training period.

Reasons affected to meet the client's needs for MCH :

- Absence of supportive supervision,
- Lack of training in inter-personal communication,
- Lack of motivation to work among health workers in urban /rural areas ,together with difficult to access reproductive and child health services,
- Poor quality of services (National Health Policy⁶, 2000) .

The ANMs were not able to perform midwifery properly as they lack experience of field practice. Lack of knowledge of the RCH programme and its components. The key recommendation was to develop an in-service programme (**Prakasamma, DM⁷2005**).

Clarity on BCC, its distinction from traditional IEC and the right approach to BCC is not evident in the planning, implementation and monitoring of BCC". The need to build BCC planning capacity exists ,not only in one region where the study was conducted , but in other parts of the country too. Health workers role at each stage of behavior change needs to be identified and explained to health workers to provide quality RCH care. (**UNICEF ⁸2007**)

Objective: 1: To develop self learning material on BCC for RCH care

2: To assess effectiveness of Self learning material on practices of ANMs regarding BCC

for RCH care

Hypothesis: There is significant difference in practices of In service ANMs after administration of self-learning material regarding Behavior Change Communication(BCC) related to selected Reproductive and Child Health issues as measured through questionnaire at 0.05 level of significance was retained.

Method :

Research Approach: The research approach used for present study was quantitative research approach evaluative in nature.

Research Design

Keeping the objectives in mind the Pre experimental research design was selected for present study .To assess the retention of practices among study sample after reading the SLM up to three months , researcher used One group pretest and repeated post-test research design .

Variables under Study

- **Independent variable:** Self-Learning Material on Behaviour Change Communication related to Selected Reproductive and Child Health issues introduced to In-Service ANMs.

Dependent variable :Practice (P)scores of In-service ANMs Before and after reading the SLM on BCC

for RCH care

Setting for the research study groups:

For In-service ANMs group the setting was Maternal and child welfare (M&CW) centre and Maternity Homes of Municipal Corporation of Delhi (MCD) .

Population for the research study groups:

For In-service ANMs group: Total population In-service ANMs in Municipal Corporation of Delhi-800 and accessible population was all the ANMs working in selected health units.

Calculated sample size and sampling technique :

Sample Size calculation :The sample size was calculated by using power analysis it was 91 **Expecting that the minimum gain of 15% in scores.** **Multistage** random sampling technique was adopted for selecting the health unit. **Total enumeration technique** to select In-service ANMs from randomly selected health units. Total ISA participated in the study-94.

Criteria for Selecting Sample- ANMs working in selected M.C.D Health unit - ANMs willing to participate in study - ANMs available at setting on the day of assessment.

Development of the Self Learning Material.(SLM) as Intervention and knowledge questionnaire to assess its effect

The major steps followed by the researcher in the development of the S.L.M and assessing its effect was based on ADDIE Model⁹

ANALYSIS : Along with review of research and non-research literature ,to support the need of present study for In-service ANMs a questionnaire was developed also got validated for identifying the ANC issues and for collecting base line information about awareness related to BCC for ANC care among in-service ANMs(20) and views of their supervisors (10PHNs and 10Doctors) .

Findings of the analysis shows that majority of In-service ANMs were aware of correct meaning of health seeking behaviour related to RCH Care . They were aware of dropout cases but in relation to immunization only. They were aware of how to identify drop outs for immunization but not for other component of RCH care care .Planning and conducting BCC sessions for drop out cases was also not practiced .

In-service ANMs expressed that there is need to include updated relevant information related to RCH care in reference to BCC. There was (100%) agreement of all the experts that self learning material on BCC for RCH care will be useful among In-service ANMs for creating awareness regarding positive health seeking behaviour among beneficiaries of RCH care.

DESIGN : Development of a criteria checklist for content outline of units of SLM and got it validated by 9 experts .

DEVELOPMENT: Development of structure of units based on validated design. And Development of criteria checklist, for evaluation of SLM. Preparation of the first draft of the S.L.M. **Content validation of the S.L.M.** by twenty one experts with the help of criteria checklist developed for evaluation of SLM. Modification and preparation of the second draft of the S.L.M. **Pre-testing of the S.L.M was done in** August 2016. Preparation of the final draft of the S.L.M was ready in December 2016 .**Translated the validated S.L.M** in Hindi and then back to English.

General objective of Self learning material.

- Describe the process of communication
- Acquire various qualities of an effective communicator.
- Discuss the process of Behaviour Change.
- Explain process of Behaviour Change Communication and related role of ANM
- Acquire knowledge about various components of RCH and relevant information about selected RCH issues.
- Describe various approaches and methods for Behaviour Change Communication(BCC)
- Plan and conduct BCC sessions for the selected ANC issues.

Units of the self learning material.

The SLM included three units:

Unit – 1 Introduction to Behavior Change Communication(BCC)

Unit – 2 Behavior Change Communication : Approaches and methods

Unit – 3 BCC guidelines for selected ANC issues it described the steps to plan a BCC session in the community and one model BCC plan is presented in the unit.

Development of Data Collection Tools and Intervention:

List of Tools Develop by the Researcher got validated by (twenty one) experts :

1. Structured Performa to assess background data of In service ANMs
2. Structured questionnaire as an assessment tools consisting items on reported practices related to providing need based relevant information during RCH care, selection of audience and use of various BCC approaches and methods on selected RCH care component was developed and got validated by 21 subject experts

The major steps taken for the development of the questionnaire were:

- ✓ **Blue print for questionnaire.**
- ✓ **Item construction.**
- ✓ **Establishing validity. (from January 2016 to April 2016) (by 21 experts)**
- ✓ **Modification done as per suggestions of expert.**
- ✓ **Pre-testing of tools (June 2016.)**
- ✓ **Establishing reliability:** Reliability of the questionnaire was established using Kuder Richardson (KR-20) formula and value 0,86 considered satisfactory for internal consistency of the tool
- ✓ **Translation of tools in Hindi and then English**

Description of questionnaire : Structured Questionnaire to assess reported practices of ANM on BCC for RCH care consisting 14 items. After preparing the broad outline of the content, structured practices questionnaire was prepared including objective type questions like Yes or No for practices followed under BCC for RCH care , multiple choice questions format was used for asking ability or frequency for performing the practices i.e from a)Always b)Frequently c)Often d)Never which carry Score range from 0-3.Further the MCQ format was used in asking the approaches, method used while practicing the BCC for RCH Care and the practices related to conduct of BCC session. fill in the blanks were used about the practices related to identify health seeking behavior , identification of target audience and the steps followed to do demonstration and home visit method of BCC..(Total score-116)

IMPLEMENTATION: (DATA COLLECTION PROCEDURE)

- The written Informed Consent was taken from each study subjects of ISA

- Information sheet containing brief information about the study was given to them
- Pre –Test Assessment for practices using pre-tested practice questionnaire among ISA group was done by making them to sit separately in a big room at their respective setting.
- Duly filled practice questionnaire were collected back after 1 hour from ISA group.
- Intervention as Self learning material was introduced by the researcher using group approach: 4-6 study subjects in one ISA group. (As per their availability at each health unit)
- Discussion based on the content of SLM with each group of ISAs for 60-90 minutes .
- (Unit-1-30-50 minutes,Unit-2 -15-20 minutes,Unit-3 -15-20 minutes)
- The study subjects were later requested to read the content as per their own pace and time for the period of one month.
- Self reported log-book was provided to note reading status for each unit.
- Weekly reminder calls to ISA group was done by researcher.

EVALUATION :

Post test assessments was taken after one month and then after three months from the day of intervention introduced to study subjects of ISA group at their respective setting .

SLM was collected back after post test -1.

Analysis and Interpretation

Major findings of study is presented in following sections:

Section-I Description of Characteristics of study sample groups :

- Majority of In-service ANMs (ISAs) 67 (71.3%) were from the age group of 40 years and above. 45(47.5%) ISAs were having 10th as minimum educational qualification and 51 (54.5%) ISAs were having professional experience of 20 years and above .
- Majority of ISAs 87(92.6) were having ANM diploma as professional qualification but 7(7.4%) of ISAs were having GNM diploma also. Majority of ISAs 74(78.72%) were trained from the institute situated in Haryana. Most of the ISAs 60(63.8%) were having 6-10 years experience of working as field worker .
- Majority of In-service ANMs 81 (86.2%) had not attended any course /In service education programme on BCC. 86(91.5%) of them plan health education sessions only not BCC sessions. 62 (66%) had conducted health education sessions on topic related to Antenatal care for antenatal women.

Section-II :Comparison of Mean Practice Scores of ISAs in Pre-test and post test-I and II is presented in table -1 and 2.

Table -1

Minimum,Maximum,Mean, Standard Deviation and ANOVA for Practice Scores of In-Service ANMs In Pre -Test and Post Test I And II

Practice	N	Minimum	Maximum	Mean±SD	Mean %	P value
Pre –test	94	27	68	51.05±10.32	44.01	P<,.001*
Post-test(30)	94	80	109	99.25±6.31	85.56	
Post-test(90)	94	57	106	86.90±11.42	74.91	

*P<0.05 is significant at 0.05 level of significance

Table -1 shows that minimum scores in practice test had increased after reading the SLM from 27 in pre-test to 80 and 57 in post I and II. Similarly, the maximum score had also increased from 68 in pre-test to 109 and 106 in post test-I and II respectively.

On comparison of mean scores of pre-test and post-tests by ANOVA it was interpreted that mean pre-test practice score of 51.05 had increased significantly to 99.25 and 86.90 in post test I and II respectively (p<.001).The table 4.61 reveals that total practice scores and mean percentage practice scores had increased in post test-I and II after reading the SLM.

Table-2

Tukey HSD for Multiple Comparison of Mean Pre Test with Post Test -I and Post Test -II for practice scores of among ISA study groups

Test(score-116)	Mean Test Score	Mean Difference	P value.
Pre-Test (n-94)	51.05	48.20*	P<.001*
Post-Test -I(n-94)	99.25		
Pre-Test -(n-94)	51.05	35.85*	P<.001*
Post-Test -II (n-94)	86.90		
Post-Test -I(n-94)	99.25	-2.35*	P<.001*
Post-Test-II(n-94)	86.90		

*P<0.05 is significant at 0.05 level of significance

Table -2 represents Tukey’s post hoc analysis for multiple comparison of total mean practice scores in pre-test, post test-I and post test-II among In –Service ANMs. It is revealed that the mean difference from pretest to post test-I and pre-test to post test-II was significant at the 0.05 level as $p < .001$. It is interpreted that there was significant improvement in practices on BCC for RCH care among ISA after administration of self learning material for the one month , and after three months also with the $p < .001$ and $P < .001$ respectively. The overall mean practice score of post test –I and II was significantly higher than pre test. These results reveals that mean percentage of practice scores had increased in post test-I and II after reading the SLM. However the mean difference from post test –I to post test-II was negative which indicate that there was less retention of practices among ISA group of study after three months.

Section-3 Area-Wise Mean, Mean Percentage and Mean Percentage Gain for Practice Scores Among In-Service ANMs from Pre Test to Post Test-1 and Post Test -2 presented in Table-3.

Table -3

Area-Wise Mean, Mean Percentage and Mean Percentage Gain for Practice Scores Among In-Service ANMs from Pre Test to Post Test-1 and Post Test -2

S.No	Variable (Area wise practices)	Test	Mean	Mean %	Mean% gain
I	Practices to give need based relevant information during meetings for RCH care	Pre-test(n-94)	9.86	75.84	12.31
		Post-test-I(n-94)	11.46	88.15	
		Pre-test(n-94)	9.86	75.84	5.39
		Post-test-II(n-94)	10.53	81.23	
		Post-test-I(n-94)	11.46	88,15	-6.92
		Post-test-II(n-94)	10.53	81.23	
II	Practices related to selection audience for	Pre-test(n-94)	8.96	56	32.87

S.No	Variable (Area wise practices)	Test	Mean	Mean %	Mean% gain
	BCC under RCH care	Post-test-I(n-94)	14.22	88.87	29
		Pre-test(n-94)	8.96	56	
		Post-test-II(n-94)	13.60	85	
		Post-test-I(n-94)	14.22	88.87	-3.87
		Post-test-II(n-94)	13.60	85	
III	Practices related to use of various BCC approaches	Pre-test(n-94)	1.63	54.33	32.33
		Post-test-I(n-94)	2.90	96.66	
		Pre-test(n-94)	1.63	54.33	32.33
		Post-test-II(n-94)	2.90	96.66	
		Post-test-I(n-94)	2.90	96.66	0
		Post-test-II(n-94)	2.90	96.66	
IV	Practices related to use of various Method of communication for BCC	Pre-test(n-94)	2.85	57	31.2
		Post-test-I(n-94)	4.41	88.2	
		Pre-test(n-94)	2.85	57	31.4
		Post-test-II(n-94)	4.42	88.4	
		Post-test-I(n-94)	4.41	88.2	0.2
		Post-test-II(n-94)	4.42	88.4	
V	Practices related to availability and use of IEC/BCC material in planned meetings for RCH care	Pre-test(n-94)	5.75	33.82	1.29
		Post-test-I(n-94)	5.97	35.11	
		Pre-test(n-94)	5.75	33.82	5.70
		Post-test-II(n-94)	6.72	39.52	
		Post-test-I(n-94)	5.97	35.11	4.41
		Post-test-II(n-94)	6.72	39.52	
VI	Practices related to conduct of BCC sessions for RCH Care	Pre-test(n-94)	4.76	36.61	39.31
		Post-test-I(n-94)	9.87	75.92	
		Pre-test(n-94)	4.76	36.61	35.08
		Post-test-II(n-94)	9.32	71.69	
		Post-test-I(n-94)	9.87	75.92	-4.23
		Post-test-II(n-94)	9.32	71.69	
VII	Practices related to use of APAC cycle of	Pre-test(n-94)	0	15.07	66.07

S.No	Variable (Area wise practices)	Test	Mean	Mean %	Mean% gain
	communication for conducting BCC session	Post-test-I(n-94)	11.92	81.14	65.07
		Pre-test(n-94)	0	15.07	
		Post-test-II(n-94)	11.22	80.14	
		Post-test-I(n-94)	11.92	81.14	-1
		Post-test-II(n-94)	11.22	80.14	
VIII	Practices related to conduct of home visits for BCC	Pre-test(n-94)	6.75	51.92	33.77
		Post-test-I(n-94)	11.14	85.69	
		Pre-test(n-94)	6.75	51.92	33.69
		Post-test-II(n-94)	11.13	85.61	
		Post-test-I(n-94)	11.14	85.69	0.8
		Post-test-II(n-94)	11.13	85.61	
IX	Practices related to use of the chart and pamphlets as IEC material for BCC	Pre-test(n-94)	3.13	26.5	58.25
		Post-test-I(n-94)	10.17	84.75	
		Pre-test(n-94)	3.13	26.5	57.66
		Post-test-II(n-94)	10.10	84.16	
		Post-test-I(n-94)	10.17	84.75	-0.59
		Post-test-II(n-94)	10.10	84.16	
X	Practices related to use of demonstration for BCC	Pre-test(n-94)	4.24	42.4	57.4
		Post-test-I(n-94)	9.98	99.8	
		Pre-test(n-94)	4.24	42.4	36.4
		Post-test-II(n-94)	7.88	78.8	
		Post-test-I(n-94)	9.98	99.8	-11
		Post-test-II(n-94)	7.88	78.8	

Findings of table -3 revealed that among ISA gain in all the ten areas of practice was more than 50%. Except the practice area related to availability and use of IEC material for BCC. Apart from this the minimum mean % gain of 5.39 from pre-test to post test-II was in the area of Practices to give need based relevant information during meetings as for this area pre-test mean percentage was **75.84%**. The maximum percentage gain of 66.07 was in the area of Practices related to use of APAC cycle of communication. It is interpreted that in the majority of practice areas, mean practice scores had increased more than 30% after reading the SLM.

Based on the findings hypothesis **that there is significant difference in practices of In service ANMs after administration of self-learning material regarding Behavior Change Communication(BCC) related to selected**

Reproductive and Child Health issues as measured through questionnaire at 0.05 level of significance was retained.

CONCLUSION :It was concluded that there was significant improvement in practice scores on BCC for RCH among PSA and ISA after administration of self learning material after a one month and three months respectively on all the ten areas covered under practice .

Discussion:

In present study there was lack of practices regarding BCC for RCH care components among In-service ANMs .

In congruence to the findings of present study it was revealed by **Novick¹⁰**, that target people for MCH care desired comprehensive and relevant information to clear their doubts, and enable them take informed decisions similarly, the women in study of **Bridgit Omowumi¹¹ et.al** mentioned issues about which they wanted more information.

The overall findings of **Kaushik LK¹²** were similar to present study that counseling skills were lacking in a substantial proportion of HW-F which indicates a need to train them in these aspect, for improving ANC services in peripheral and rural set-up where these HW-F are the main functionaries to deliver care.

Similar to present study **Ward B et al. (2004)¹³** revealed on the research question “Can an information booklet on an ethnic minority increase the knowledge base of junior doctors? It was stated that Self-instructional module was found to significantly increase awareness of the cultural background of patients from a minority community and this knowledge was maintained for at least one month after distribution. The self-instructional material is not only effective in increasing the patient’s knowledge but has also been used by other health care professionals.

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