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Completeness and Appropriateness of Integrated Management of Neonatal & Childhood Illness (IMNCI) Forms Filled By the Interns in Field Area of Tertiary Care Hospital in Gujarat

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ABSTRACT

Background: IMNCI is an important strategy being implemented across our country with aim to reduce infant & under-five mortality. Training of MBBS students in IMNCI is being carried out at PramukhSwami Medical College, Karamsad since more than 10 years. In this study, quality of IMNCI forms filled by interns during their posting at Urban Health Training Centre in terms of completeness & appropriateness had been studied.

Objectives: To assess & compare completeness & appropriateness of 2 months upto 5 years IMNCI forms of interns of 2012-13 & 2013-14 MBBS batch.

Methodology: This was a record based study in which analysis of filled forms of 2 MBBS batches was done. Completeness criterion was based on completely filled forms & appropriateness criterion was based on criterion of completely filled correct forms.

Results: All available 238 forms were analyzed. Completeness was found in 8.3% (n=10) & 10.3% (n=12) forms of 2012-13 & 2013-14 batch respectively. Appropriateness of forms was 8.3% (n=10) forms of 2012-13 batch & 8.5% (n=10) forms of 2013-14 batch. Completeness & appropriateness was found to be of poor quality in both the batches.

Conclusion: Repeat training is essential in internship as completeness & appropriateness of the forms was found to be poor in the study.

Keywords- IMNCI; MBBS; Medical curriculum; Pre-service IMNCI

INTRODUCTION

Over last 3 decades deaths among infant & <5 years children worldwide have reduced by third but this reduction is not equal among all nations.[1] Every year more than 10 million children die before reaching 5 years of age.[1] According to Sample Registration System (SRS) 2017, Infant Mortality rate in India was 34 per 1000 live births.[2] According to Niti Ayog data, Under-5 mortality rate in India in 2015 was reported 29 per 1000 live births.[3] Integrated Management of Neonatal & Childhood Illness (IMNCI) programme was introduced in India to reduce infant mortality rate & under-five mortality.[4]

Systematic review and meta-analysis of IMNCI related studies showed that IMNCI can significantly reduce Infant Mortality Rate and Under-5 mortality rate if implemented properly & also found out that the IMNCI training improved health worker performance.[5] However, various studies have found poor adherence of healthcare providers to IMCI.[6,7] Particularly, few such studies are done in

Medical officers of Primary Health Centres & other health care providers, have found out incomplete & inappropriate filling of forms by them.[8,9,10,11]

IMNCI training is provided to MBBS students at Pramukh Swami Medical College since 10 years as a part of their third year MBBS curriculum. This is a part of pre-service IMNCI training and is provided only in few colleges across the country. Very few studies have been done to assess quality of pre-service IMNCI training. Purpose of this study was to find best period for training and if refresher training is required or not during internship.

Assessment of forms of 2012-13 year batch & 2013-14 year batch was done, as 2012-13 batch received their IMNCI training in final year of MBBS, while comparison group 2013-14 batch received their training as usual in third year of MBBS. In present study, evaluation of quality of IMNCI forms filled by interns in terms of completeness & appropriateness was studied.

OBJECTIVES

The study was conducted to assess completeness & appropriateness of 2 months upto 5 years Integrated Management of Neonatal & Childhood Illness (IMNCI) form filled in the field by interns; and also to compare completeness & appropriateness of 2 months upto 5 years Integrated Management of Neonatal & Childhood Illness (IMNCI) form of 2012-13 & 2013-14 year interns

METHODOLOGY

Study was carried out after obtaining permission from Institutional Ethics Committee; Head of Department of Community Medicine & Incharge of Urban Health Training Centre (UHTC). This is a record based study. IMNCI forms filled by interns posted in Dept. of Community Medicine were obtained from UHTC. The forms obtained were filled by Interns during their field work (Mamta divas or house to house survey) at UHTC. All available (n=238) 2 months upto 5 years IMNCI forms were evaluated. Evaluation was done by the faculty & resident who had also received training for IMNCI.

Completeness criterion was whether all the applicable fields in the form were field. Appropriateness criterion was whether all the forms filled completely were fully correct or not & if there was a mistake (even one) it was considered as an incorrect form.

Statistical analysis- Entry of data was done in Microsoft Office Excel 2007 sheet & frequency was calculated using Statistical Programme for Social Science 16.0 version.

RESULT

All of the available (n=238) 2 months upto 5 years IMNCI forms, found in record file at UHTC were studied. For further description in result section, batch of 2012-13 MBBS intern of Pramukh Swami Medical College is addressed as "**batch A**" & 2013-14 MBBS intern batch of Pramukh Swami Medical College is addressed as "**batch B**". 121 forms of batch A & 117 forms of batch B were studied.

Name & Age was mentioned in all the forms of both the batches. Weight was not mentioned in 7.4% (n=9) forms of batch A, while it was mentioned in all forms of batch B. Temperature was not mentioned in 24.8% (n=30) forms of batch A, while same mistake was found in 13.7% (n=16) forms of batch B. Inquiry about problems was not made in 24.0% (n=29) forms of batch A & 13.7% (n=16) forms of batch B. Classification of visit as initial or follow-up was missed in 12.4% (n=15) forms of batch A & in 21.4% (n=25) forms of batch B.

Table 1: Points missed in examination related to cough or difficulty breathing

Points missed	Batch A (n=24) (%)	Batch B (n=25) (%)
Number of breaths in 1 min	2 (8.3)	0 (0)
Chest indrawing	8 (33.3)	0 (0)

Table 2: Points missed in examination related to diarrhoea

Points missed	Batch A (n=35)(%)	Batch B (n=32)(%)
Diarrhoea since how many days?	1 (2.9)	7 (21.9)
Is there blood in stool?	8 (22.8)	10 (31.2)
Look for sunken eyes	13 (37.1)	1 (3.1)
Pinch the skin of abdomen. How does it go back?	0 (0)	1 (3.1)

Table 3: Points missed in examination related to fever

Points missed	Batch A (n=4) (%)	Batch B (n=23) (%)
Malaria risk in locality	3 (75.0)	2 (8.7)
Fever since how many days?	0 (0)	4 (17.4)

Table 4: Points missed in examination related to ear problem

Points missed	Batch A (n=4) (%)	Batch B (n=3) (%)
Is there any discharge from ear?	0 (0)	1 (33.3)
Pus draining from ear & tender swelling behind the ear	0 (0)	1 (33.3)

Mention about presence of danger signs was done in 86.8% (n=105) forms of batch A, while they were mentioned in 92.3% (n=108) forms of batch B.

Table 5: Points missed in checking related to malnutrition

Points missed	Batch A (n=87)(%)	Batch B (n=64)(%)
Oedema of both feet	3 (3.4)	2 (3.1)
Oedema of both feet + visible severe wasting	26 (29.9)	52 (81.2)

Table 6: Points missed in assessment of child's feeding

Points missed	Batch A (n=102)(%)	Batch B (n=78)(%)
Do you breastfeed your child?	3 (2.9)	1 (1.3)
Do you breastfeed during the night?	7 (6.9)	0 (0)
How many times per day food given?	2 (1.9)	0 (0)
Does the child receive his own servings?	0 (0)	2 (2.6)
During this illness, has child's feeding changed?	2 (1.9)	4 (5.1)
All points of feeding assessment missed	17 (16.7)	15 (19.2)

Table 7: Points not written as advice in the form if required

Points	Batch A (n=121)(%)	Batch B (n=117)(%)
Medical advice	5 (4.1)	5 (4.3)
Non medical advice	7 (5.8)	41 (35.0)
When to return immediately	48 (39.7)	16 (13.7)
Non medical advice + when to return immediately	9 (7.4)	8 (4.3)
No advice written	10 (8.2)	8 (6.8)

Inquiry regarding cough or difficulty in breathing was done in 97.5% (n=118) cases by batch A, while same was done in 97.4% (n=114) cases by batch B. Complain of cough was present in 19.8% (n=24) cases out of which 58.3% (n=14) were fully assessed by batch A. While complain of cough was present in 21.4% (n=25) cases and all were fully assessed by batch B. Points missed in examination are given in table 1. Appropriate classification for complain of cough or difficulty breathing was done in 95.8% (n=23) forms of batch A and all the forms of batch B.

Diarrhoea complain was inquired in 90.1% (n=109) forms of batch A, while it was inquired in all forms of batch B. Complain of diarrhoea was present in 28.9% (n=35) cases out of which 37.1% (n=13) were fully assessed by batch A. While complain of diarrhoea was present in 27.4% (n=32) cases out of which 40.6% (n=13) were fully assessed by batch B. Points missed in examination are given in table 2. From 121 forms of batch A, 1.7% (n=2) had classified when no classification was required while 1.7% (n=2) missed classification. Similarly in 117 forms of batch B, 6.0% (n=7) forms had classified when actually no classification was required.

Inquiry regarding fever was done in 92.6% (n=112) cases by batch A, while same was done in 99.1% (n=116) cases by batch B. Complain of fever was present in 3.6% (n=4) cases out of which 25.0% (n=1) were fully assessed by batch A. Complain of fever was present in 19.8% (n=23) cases out of which 73.9% (n=17) were fully assessed by batch B. Points missed in examination for fever are given in table 3. Classification for complain of fever was done in 75.0% (n=3) forms of batch A and all the forms of batch B. However in 8 forms of batch B, classification was done for fever when there was no complain of fever.

Measles was inquired in 92.6% (n=112) cases by batch A, while it was inquired in 94.0% (n=110) cases by batch B. Measles complain was not present in any cases.

Ear problem was inquired in 94.2% (n=114) cases by batch A, while it was inquired in 98.3% (n=115) cases by batch B. Complain of ear problem was present in 3.5% (n=4) cases of batch A, out of which all were fully examined. Similarly ear problem complain was present in 2.6% (n=3) cases of batch B, out of which 33.3% (n=1) was fully examined. Points missed in examination for ear problem are given in table 4. Appropriate classification was done in all 4 forms of batch A. While in batch B forms, wrong classification was done in 2 forms while classification was done in 5 forms where ear problem complain was not present.

Malnutrition was checked in 71.9% (n=87) forms of batch A, while it was checked in 54.7% (n=64) forms of batch B. Points missed in checking are given in table 5. Weight for age classification was missed in 14.0% (n=17) forms of batch A, while it was missed in 41.9% (n=49) forms of batch B. classification of malnutrition based on examination was missed in 40.5% (n=49) forms of batch A and 59.7% (n=71) forms of batch B.

Anemia was checked in 88.4% (n=107) forms of batch A and 76.1% (n=89) forms of batch B. Classification of anemia based on examination was done 71.1% (n=86) forms of batch A and 35.9% (n=42) forms of batch B.

Child's immunization status, Vitamin A & iron folic acid prophylaxis status was checked in 94.2% (n=114) forms of batch A and 93.2% (n=109) forms of batch B. In case vaccine, vitamin A and/or iron folic acid was required that day, than encircling was done in 25.0% (n=9) forms of batch A and 47.2% (n=21) forms of batch B. When to return for next immunization, vitamin A or IFA supplementation was mentioned in 44.6% (n=54) forms of batch A and 59.0% (n=69) forms of batch B.

Assessment of child's feeding if child had very low weight for age or Anemia or was less than 2 years old was done in 69.6% (n=71) forms out of 102 eligible children by batch A, while it was done in 71.8% (n=56) forms out of 78 eligible children by batch B. Points missed in feeding assessment is given in table 6. Classification based on assessment of child's feeding was done in 2.9% (n=3) forms of batch A out of 102 & 3.8% (n=3) forms of batch B out of 78 eligible forms for classification.

All advice that was given or should have been given were found in 34.7% (n=42) forms of batch A and 35.9% (n=42) written on back side of the form. Points not written as advice in the form if required are given in table 7.

Completeness & Appropriateness of all forms of batch A and B were assessed. Out of 121 forms of batch 2012-13 final year students, 111 (91.7%) forms were incomplete and 10 (8.3%) forms were complete and appropriate. Out of 117 forms filled by batch 2013-14 final year students, 105 (89.7%) forms were incomplete and 12 (10.3%) forms were complete, out of which 10 (83.3%) were appropriate and 2 (16.7%) were inappropriate. No statistical significance was found for completeness or appropriateness.

DISCUSSION

Total 238 IMNCI forms were evaluated out of which 121 forms were of 2012-13 batch (batch A) and 117 forms were of 2013-14 batch (batch B). As this was a record based study, exact reason for poor results cannot be said; however possible reasons can be predicted.

Initial basic information like name and age was mentioned in all forms, while weight and temperature inquiry was missed in almost one fifth of the forms. This may have occurred due to unavailability of weighing scale and thermometer. However in such situation "last known weight" and "normal by touch" temperature could have been mentioned which was done in many other forms.

Inquiring about various problems like whether child had cough or cold, diarrhoea, fever, measles, ear problem, etc was done in almost more than 90% of forms. In remaining forms inquiry may have be done, but classifying as No problem by encircling "No" may have been missed.

Most common points missed in cough or difficulty breathing examination by batch A was not examining for chest indrawing which was followed by counting number of breaths in one minute. In case on diarrhoea examination most common missed point was looking for blood in stool by batch A while in case of batch B it was inquiring about blood in stool.

Advice that should be given to caretaker is one of the most important part of IMNCI. Advice was given in around one third of the forms of both batches which is extremely poor. Most commonly missed point in advice for batch A was when to return immediately, while in case of batch B it was non-medical advice like advice regarding feeding, vaccination, hygiene, etc.

A study by Ramanuj V et al. on interns showed that 56% knew correct examination methods, 68% could correctly classify and 27% could answer the correct advice to be given to the mother / care taker.[1] In present study, interns did correct examination & covered all points of examination in 76.2% forms, could classify correctly in 73.3% forms & correct advice given to parents / guardians in 35.3% forms.

Out of total 121 forms filled by batch A, 10 forms were complete and all 10 were appropriate. In case of batch B, out of 117 forms, 12 forms were completely filled of which 10 were appropriate.

A study by Patel H et al. in Bhavnagar district showed that 40% forms of health workers were completely filled and appropriateness in classification & advice overall was 77.5% & 47.5% respectively.[7] A similar study by Bhatt RA et al. in Mehsana district showed that when forms of health workers were reviewed during survey appropriateness for classification was 88%, while for advice it was 57.8%.[8] A study by Mohan P et al. showed that health workers were able to appropriately classify problems in 81.8% & appropriate treatment in 80.3% children.[9] In our study classification was done overall in 73.3% forms & appropriate advice was written in 35.3% forms, which was less compared to the results of all the studies.

Possible reasons for poor completeness and appropriateness of forms may be (i) inability to recollect what was taught during training and/or (ii) as filling of forms was part of their Urban Health Training Centre internship posting which was not a part of exam and/or (iii) no on field supportive supervision.

CONCLUSION

Completeness & appropriateness of the forms was found to be poor in the study.

Implications- Intensive & repeated training of MBBS students for IMNCI is advisable. Optimum timing for training of students can be decided based on strong evidence. Such studies can be car-

ried out in colleges where Pre-service IMNCI training is provided. And in addition on field evaluation can be done to find out possible reasons for poor completeness and appropriateness of the forms.

Limitations- As it was a record based study, actual process of form filling was not observed. So, possible reasons for poor completeness and appropriateness of the forms could not be evaluated. Also, IMNCI forms of only 2 batches were studied & compared which might not be sufficient.

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