Completeness and Appropriateness of Integrated Management of Neonatal & Childhood Illness (IMNCI) Forms filled by the Interns of Tertiary Care Hospital in Gujarat

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Abstract:

Introduction: IMNCI is an important strategy being implemented across our country in order to improve health worker's performance and also 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 present study, quality of forms filled by interns during their posting at Urban Health Training Centre is assessed in terms of completeness & appropriateness. **Objectives:** To assess & compare completeness & appropriateness of Upto 2 months IMNCI forms of interns of 2012-13 & 2013-14 batch. **Method:** This was a record based study in which analysis of filled forms of Two 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 216 forms were analyzed. Completeness was found in 18.9% (n=20) & 7.3% (n=8) forms of 2012-13 & 2013-14 batch respectively. Appropriateness of forms was 17.9% (n=19) forms of 2012-13 batch & 7.3% (n=8) forms of 2013-14 batch. **Conclusion:** Completeness & appropriateness was found to be poor, however it was better in the batch who had received training in final year of MBBS.

Key Words : IMNCI; MBBS; Medical curriculum; Pre-service IMNCI

Introduction:

Integrated Management of Neonatal & Childhood Illness (IMNCI) programme was introduced in India to reduce infant mortality rate & under-five mortality. It is also proven fact that, IMNCI improves health worker's performance.[1,2] Over last 3 decades deaths among infant & <5 years children worldwide have reduced by third but this reduction is not equal among all nations.[3] Every year more than 10 million children die before reaching 5 years of age.[4] Particularly in infant deaths, 64% deaths occur in first month of life and in that most during first week of life.[4] Systematic review and meta-analysis of IMNCI related studies have shown that IMNCI can significantly reduce Infant and under-5 mortality.[5] If doctors and other healthcare workers have received pre-service IMNCI training and are knowledgeable in IMNCI, than it can substantially help to diagnose & treat various neonatal & childhood illness at outreach areas.

IMNCI training is provided to MBBS students at PramukhSwami Medical College since 10 years as a part of their third year MBBS curriculum. 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. Several such studies are done in Medical officers of PHCs & other health care providers which have shown incomplete & inappropriate filling of forms by them.[6-10] However, very few studies are done amongst MBBS students.[3] In present study, the aim was to evaluate

knowledge about the pre-service IMNCI training amongst MBBS students.

Objectives:

1. To assess completeness & appropriateness of upto 2 months Integrated Management of Neonatal & Childhood Illness (IMNCI) form filled in the field by interns
2. To compare completeness & appropriateness of upto 2 months Integrated Management of Neonatal & Childhood Illness (IMNCI) form of 2012-13 & 2013-14 year interns

Method:

Study was carried out after obtaining permission from Institutional Ethics Committee, Head of Department of Community Medicine & Incharge of Urban Health Training Centre (UHTC). Present study 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 (visit to Health & Nutrition Day at Anganwadi or during house to house survey) at UHTC. All available (n=216) upto 2 months 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 based on 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.

Results:

All of the available (n=216) upto 2 months IMNCI forms, found in record file at UHTC were studied. For further description in result section, batch of 2012-13 MBBS intern of PramukhSwami Medical College is addressed as "batch A" & 2013-14 MBBS intern batch of PramukhSwami Medical College is addressed as "batch B". 106 forms of batch A & 110 forms of batch B were studied.

Name, Age & Weight was mentioned in all forms of both the batches. Temperature was not measured & mentioned in 16% (n=17) of forms in batch A, while same mistake was in 9.1% (n=10) forms of batch B. Inquiry about problems was not made in 11.3% (n=12) forms of batch A & 14.5% (n=16) forms of batch B. Classification of visit as initial or follow-up was missed in 8.5% (n=9) forms of batch A & in 12.7% (n=14) forms of batch B.

Possible bacterial infection and/or jaundice was not checked or some points were missed in 2.8% (n=3) forms of batch A & 8.2% (n=9) forms of batch B. Appropriate classification was done for Possible bacterial infection and/or jaundice in all forms of both batches if complain was present. Diarrhoea complain was not inquired in 7.5% (n=8) forms of batch A & 6.4% (n=7) forms of batch B. Out of 98 forms of batch A which had inquired for diarrhoea, 14 forms had complain of diarrhoea & amongst that 28.6% (n=4) forms had missed some point in examination. Similarly for batch B out of 103 forms which had inquired for diarrhoea, 13 complained for diarrhoea & in that 61.5% (n=8) forms had missed some point in examination. Point missed in batch A were: - diarrhoea since how many days not inquired (in 1 form), blood in stool not inquired (in 2 forms) & skin pinch not done (in 1 form), while in batch B: - diarrhoea since how many days not inquired (in 3 forms), blood in stool was not inquired (in 3 forms) & skin pinch not done (in 2 forms). Classification for diarrhoea was not appropriate in 35.7% (n=5) forms of batch A & 38.5% (n=5) of batch B.

Inquiry for feeding problems & malnutrition was missed in 10.4% (n=11) forms of batch A while inquiry for feeding problem & malnutrition was not done in 7.3% (n=8) forms of batch B. All problems were not assessed in 13.7% (n=13) & 17.6% (n=18) forms of batch A & B respectively. Points missed in batch A were: - difficulty in breast feeding (in 4 forms), is infant breast feed (in 1 form), how many times in 24 hours (in 1 form) & other food or drink received (in 7 forms). In batch B points missed were:

Table 1: Points missed in breast feeding assessment

Point missed in assessment	Batch A	Batch B
4 Attachment point	----------	1
Overall attachment assessment	7	1
Suckling assessment	17	10
Inquiry regarding pain while breast feeding	20	41
Attachment + suckling + pain while breast feeding	6	1
Attachment + suckling	1	--------
All points	12	13
Total	63	67

Table 2: Advice to be given to parent/guardian which was missed

Advice Point missed	Batch A	Batch B
None	54 (50.9%)	45 (40.9%)
Medical	1 (0.9%)	1 (0.9%)
Non-medical	10 (9.4%)	5 (4.5%)
When to return immediately	35 (33%)	47 (42.7%)
Non-medical + When to return immediately	5 (4.7%)	10 (9.1%)
All	1 (0.9%)	2 (1.8%)

- difficulty in breast feeding (in 4 forms), is infant breast feed (in 2 forms), how many times breast feed in 24 hours (in 5 forms), other food or drink received (in 7 forms). Weight for age classification was not done in 19.8% (n=21) forms in batch A & 28.2% (n=31) forms of batch B. Breast feeding was not assessed in 59.4% (n=63) forms of batch A & 60.9% (n=67) forms of batch B. Points missed in breast feeding assessment are shown in Table 1. 41.5% (n=44) forms of batch A & 46.4% (n=51) forms of batch B had not appropriately classified for feeding problems & malnutrition.

Immunization was not checked in 3.8% (n=4) & 5.5% (n=6) forms of batch A & B respectively. If immunization was required on that day, then encircling on name of vaccine required on that day was not done in 12.3% (n=13) forms of batch A & 9.1% (n=10) forms of batch B. Date for return of next immunization was not mentioned in 40.6% (n=43) forms of batch A & 30.9% (n=34) forms of batch B.

Appropriate advice to be written on back of form was missed in 49.1% (n=52) & 59.1% (n=65) forms of batch A & B respectively. Details of points being missed in forms of both the batches is shown in **Table 2.**

After assessing the whole form, completeness was found in 18.9% (n=20) & 7.3% (n=8) forms of batch A & B respectively. Appropriateness was in 17.9% (n=19) forms of batch A & 7.3% (n=8) forms of batch B.

Statistical association for comparison of completeness & appropriateness among both batches is shown in Table 3 & 4 respectively.

Statistical association was found for both completeness & appropriateness between both batches. Overall completeness & appropriateness was found to be better among batch A, who had received training for IMNCI in final year of MBBS compared to batch B who had received training in 6th semester (third year) of MBBS.

Table 3: Comparison of Completeness between both batches

	Completeness		Total
Year	**Yes**	**No**	
Batch A (2012-13)	20	86	106
Batch B (2013-14)	8	102	110
Total	28	188	216
χ^2 (p value) = **6.433 (0.011)**			

Table 4: Comparison of Appropriateness between both batches

	Appropriateness		Total
Year	**Yes**	**No**	
Batch A (2012-13)	19	87	106
Batch B (2013-14)	8	102	110
Total	27	189	216
χ^2 (p value) = **5.600 (0.018)**			

Discussion:

Present study being a record based study, exact process of filling forms was not observed, however possible reasons for incompleteness and inappropriateness can be predicted. A study by Ramanuj V et al. on interns showed that 56% knew correct examination methods, 68% could correctly classified and 27% could answer the correct advice to be given to the mother / care taker.[3] In present study, interns did correct examination & covered all points of examination in 55.5% forms, could classify correctly in 63% forms & correct advice given to parents / guardians in 45.8% forms which is almost similar to the studies result by Ramanuj V et al.

A study by Patel H et al. in Bhavnagar district showed that 40% forms of health workers were completely filled & appropriateness in classification & advice overall was 77.5% & 47.5% respectively.[6] 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%.[7] 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.[8] In our study classification was done overall in 63% forms & appropriate advice was written in 45.8% forms, which was less compared to the results of all the mentioned studies.

Completeness and appropriateness was found to be better amongst batch that received training in Final year of MBBS. This may suggest that more recent training received, more better is performance of interns.

Conclusion:

Repeat training of IMNCI is essential in internship as completeness & appropriateness of the forms is found to be poor in the study. Also such studies can be carried out in colleges where Pre-service IMNCI training is provided.

Implications:

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

Limitations:

As it was a record based study, actual process of form filling was not observed. So reasons for incompleteness and inappropriateness cannot be

assessed. Moreover, only Two MBBS batches IMNCI form were studied & compared which might not be sufficient to reach conclusion.

Declaration:

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Conflict of Interest: Nil

References :

1. Gouws E, Bryce J, Habicht JP, Amaral J, Pariyo G, Schellenberg JA, et al. Improving antimicrobial use among health workers in first-level facilities: Results from the multi-country evaluation of the Integrated Management of Childhood Illness strategy. Bull World Health Organ. 2004;82(7):509–15.
2. Bryce J, Victora CG, Habicht JP, Black RE, Scherpbier RW. Programmatic pathways to child survival: Results of a multi-country evaluation of Integrated Management of Childhood Illness. Health Policy Plan. 2005;20(SUPPL. 1).
3. Vaibhavkumar R, Bala D V. Evaluation of knowledge about Integrated Management of Neonatal and Childhood Illnesses (IMNCI) approach among the internee doctors. Healthline Journal Indian Association of Preventive & Social Medicine [Internet]. 2011[cited 2018 June 8];2(2):6–7. Available from: http://www.iapsmgc.org/OA1V2I2.pdf%5Cnhttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=cagh&AN=20113327912%5Cnhttp://lshtmsfx.hosted.exlibrisgroup.com/lshtm?sid=OVID:caghdb&id=pmid:&id=doi:&issn=2229-337X&isbn=&volume=2&issue=2&spage=6&pag
4. Student's Handbook of IMNCI by WHO and Ministry of Health and Family Welfare, Government of India, 2003
5. Nguyen DTK, Leung KK, McIntyre L, Ghali WA, Sauve R. Does Integrated Management of Childhood Illness (IMCI) Training Improve the Skills of Health Workers? A Systematic Review and Meta-Analysis. Baradaran HR, editor. PLoS One [Internet]. Public Library of Science; 2013 Jun 12 [cited 2018 June 6];8(6):e66030. Available from: http://dx.plos.org/10.1371/journal.pone.0066030
6. Patel H, Nayak A, Bhalani K, Kotecha I, Singh MP. Rapid Assessment of IMNCI Programme in Bhavnagar District, Gujarat. National Journal of Integrated Research in Medicine [Internet]. 2013 [cited 2018 June 8];4(5):54–8.
7. RA Bhatt, KV M, A S, MJ V, PG P. Rapid assessment of Integrated Management of Neonatal and Childhood Illness (IMNCI) implementation in Mehsana district North Gujarat India. Indian Journal of Maternal & Child Health [Internet]. 2012 [cited 2018 June 8];14(3):[15] p. Available from: http://www.popline.org/node/572156
8. Mohan P, Kishore B, Singh S, Bahl R, Puri A, Kumar R. Assessment of Implementation of Integrated Management of Neonatal and Childhood Illness in India. Journal of Health, Population & Nutrition [Internet]. 2011[cited 2018 June 8];29(6):629–38. Available from: http://www.ncbi.nlm.nih.gov /pmc/articles/PMC3259726/%5Cnhttp://www.ncbi.nlm.nih.gov/pmc/articles/PMC3259726/pdf/jhpn0029-0629.pdf
9. Sheela B, Tarun P, Neha K, Rahul P N. a Study To Assess the Implementation and Effectiveness of Imnci Program and Evaluation of Skills of Rural Anganwadi Workers in Vadodara Taluka. Natl J Community Med. 2012;3(2):207–12.
10. Venkatachalam J, Aggarwal AK, Gupta M, Sathya GR. Evaluation of IMNCI Practices among Health Care Providers in a District of North India . J Dent Med Sci. 2012;1(6):46–50.