

Original Article

ASSESSMENT OF KNOWLEDGE REGARDING IMNCI AMONG FINAL YEAR MEDICAL STUDENTS OF FATIMA JINNAH MEDICAL UNIVERSITY

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Objective: To assess the knowledge of final year MBBS students regarding IMNCI strategy at Fatima Jinnah Medical University (FJMU), Lahore.

Methods: This was across sectional observational study. Two hundred and eighty five final year MBBS students of FJMU Lahore were recruited from September-October, 2016. Students were assessed by pre-tested structured questionnaire comprising of general information and core content about IMNCI. Student responses were marked as 0, 1 and 2. Individual student assessment was based on score obtained by each. Data was entered and analyzed by using SPSS-22.

Results: Overall mean score of the IMNCI core content was 1.09 ± 0.61 . Students complete knowledge to identify the illness in infants up to 2 months and child aged 2 months to 5 years was significant different regarding main symptoms (26% versus 50.5%) and danger signs (15.4% versus 61.8%) with P value < 0.0001 . Students general knowledge about IMNCI was found to be higher (92.5%) compared to detailed content (41.8%).

Conclusions: Knowledge about age groups included in IMNCI and assessment of sick young infants (0-2 months) to classify illness found to be less among medical students that need to be improved further with supervised practices in order to improve under 5 mortality.

Keywords: IMNCI, FJMU, Medical students.

Introduction

Globally 5.9 million children die before reaching the age of five.¹ Sixty percent of these deaths occur in ten countries in Asia and Africa.² Similar figures were also reported in the recently updated Global Burden of Disease Study estimates.³ Worldwide efforts have been made to improve child survival. During past quarter century (1990-2015), under-five mortality has declined from 12.6 million to 5.9 million (56%).¹ In Pakistan under five deaths have also reduced from 136 to 81 per 1000 live births⁴ during this period but major chunk of these deaths still occur in first month of life. To combat this serious issue WHO and UNICEF launched a strategy of integrated management of childhood illness in 1995 which was adopted by over 100 countries including Pakistan to reduce childhood mortality and morbidity. In 2003, newborn care component was added and it was renamed as IMNCI.⁵

IMNCI is quite a sensitive practical strategy based on both preventive and curative services. It addresses the child as a whole rather than individual problems. Validity and reliability of its algorithm has been challenging and proved by studies conducted in various setup.⁶⁻¹⁰ A study at Ghurki Hospital, Lahore revealed its feasibility and practicality in classifying illness in sick young

infant.¹¹

IMNCI was introduced in Pakistan in 1998 with its three major components including improvement in health system, case management skills of health staff along with family and community practices. Studies revealed implementation of IMNCI has great impact on neonatal and infant morbidity and mortality.^{12,18} A cluster of randomized controlled trial in community (1.1 million population) in Haryana revealed significantly lower infant and neonatal mortality rate in the intervention cluster (adjusted hazard ratio 0.85 and 0.91 respectively).¹² IMNCI training workshops have been conducted to update the knowledge and skills of health professionals but due to least priority of policy makers and lack of sustained funding led to uneven implementation within country so we could not make remarkable progress to achieve MDG-4 (reduce under 5 deaths by 2/3rd by 2015).^{2,25} Now in the Sustainable Developmental Goal (SDG) era (2016-2030), we need to prioritize our child survival policies and must scale up IMNCI strategy under the SDG-3 (promoting good health and well-being) along with monitoring and evaluation procedures that need to be set up to measure progress towards the child survival target.¹³

Studies have revealed that internees and medical students who are future doctors could do better with pre-service IMNCI training,^{14,15} if their attention is

focused on neonatal and child health related problems. IMNCI has been incorporated in the undergraduate syllabus of medical students. This study is carried out to assess the knowledge of final year MBBS students about IMNCI strategy. Only few studies have been conducted about IMNCI in Pakistan. So this study may help to identify deficiencies and gaps in knowledge and guide us to redesign or modify pediatrics curriculum. An improved strategy can be developed for reinforcement of integrated management protocols at pre-service level training during medical education. This may motivate medical students to improve their knowledge and skills towards child care.

Methods

This observational cross-sectional study was carried out from September-October, 2016 at FJMU, Lahore involving 285 final year MBBS students by using non-probability convenient sampling technique. Students were assessed in terms of IMNCI guidelines by giving pre-tested structured questionnaire of 18 questions. Of these, eleven were related to detailed content of IMNCI and students were asked to choose correct option accordingly while seven items were about general information of IMNCI. Students were asked about various aspects of IMNCI protocol like what is meant by IMNCI (full name), its basic principles, major diseases and which age group of children it caters. Symptoms inquired and look for (check) were assessed according to age groups, young infants up to 2 months and children aged between 2 months to 5 years as causes are different in these two age groups. The questionnaire also attempted to assess student knowledge about Iron deficiency anemia, Vitamin A supplementation and immunization required up to 5 years. It also contained general information about IMNCI like follow up care, mother counseling, addition of new protocol, student source of learning and its practice in ward. At the end, students opinion were also taken regarding IMNCI usefulness in creating awareness among students and health care provider to reduce infant and child morbidity and mortality. Items relevant to core content were evaluated and marked according to student responses as 0, 1 and 2. Zero means 'No knowledge' (respondent was not able to mark any correct option for the said question in the questionnaire), 1 indicates 'Partial knowledge' (participant chose one of the two correct options) and 2 shows 'Complete

knowledge' (answered correctly). For assessment of general contents to IMNCI, knowledge are assigned score 0 and 1. Zero means 'No' and 1 means 'Yes'.

After collection data was entered and analyzed by using SPSS version 22. Frequencies and percentages were calculated for categorical variables. Continuous variables were assessed as mean values and standard deviation. Chi square-test was applied for testing the difference in core knowledge to identify the illness between 2 age groups (young infant up to 2 months and child aged between 2 months to 5 years). Illness is described as main symptoms and danger sign. Students were also assessed individually on the basis of total score obtained for each component. P value <0.05 was considered statistically significant.

Results

Questions related to IMNCI core contents were evaluated according to student's response and obtained results were arranged in tabulated form (table 1). Overall mean score of the IMNCI core content was 1.09 ± 0.61 which shows that students had partial level of knowledge in the domain of detailed IMNCI contents. Student complete knowledge to identify the illness between young infant up to 2 months and child aged 2 months to 5 years in terms of major symptoms to be asked (26% vs 50.5%) and danger signs (15.4% vs 61.8% respectively) was statistically significant ($p < 0.0001$) by applying chi square test. One hundred and thirty (45.6%) had knowledge about anemia caused by iron deficiency to be checked in children aged 2 month-5 year. However, 155 (54.4%) were deficient in it. Awareness about vitamin A supplementation was present in 141 (49.5%) respondents but 144 (50.5%) could not report correctly. Regarding source of IMNCI learning, 110 (38.6%) students perceived idea from lectures and teachers while 83 (29%) had gained knowledge from books and literature. Another 25% got information from conference and workshops. Only 23 (8%) listed mixed source. It was found that 218 (76%) used IMNCI algorithm and protocols in pediatric ward while 67 (23.5%) had not practiced it. Knowledge about follow up care module which IMNCI recommended after initial treatment in children was found in 277 (97.2%) while 8 (2.8%) had no idea about it. There were 274 (96.1%) students knew about IMNCI protocol regarding "counsel the mother" for illness. In case of new additional guideline "check for HIV status" 264 (92.6%) had idea about this whereas 21 (7.4%) had no knowledge. In order to reduce under 5 mortality and morbidity in our country 276 (96.8%) students favored IMNCI

strategy only 9 (3.2%) did not convinced. Two hundred seventy six (96.8%) responded positively to the statement that IMNCI teaching is helpful in creating awareness among health care provider and students while 9(3.2%) disagreed with it. Students general information to IMNCI was found to be higher (92.5%) compared to core content (41.8%). Individual student evaluation was also made on the basis of total score each obtained. Moreover percentage was also calculated for score to show score trend among students depicted in line chart (Fig-1) which indicate 222 (77.9%) got score in the range of 50-80%.

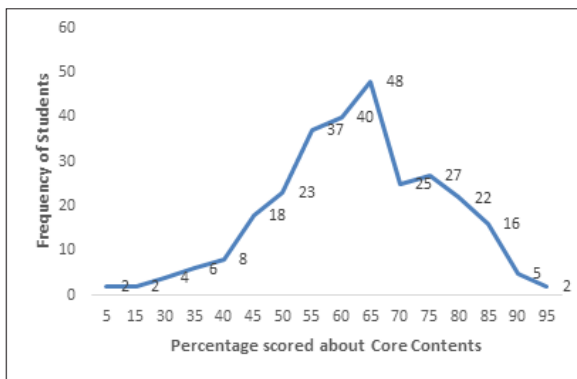


Fig-1: Core Knowledge Assessment on the basis of obtained score.

Discussion

IMNCI is operational in many countries and its implementation revealed tremendous results with reduced neonatal and infant morbidity and mortality.^{16,17} A 2016 cochrane review showed that IMNCI was associated with a 13% reduction in child mortality when implemented in health facilities and communities.¹⁸ Training of health professionals is crucial for successful implementation of IMNCI^{19,24} and directly related

with supervision and monitoring of their skills along with sustained motivation. Khan RA study showed the IMNCI trained personnel scored almost double about clinical case management compared to untrained ($p < 0.001$) in Punjab, Pakistan.²⁰ Inclusion of IMNCI in curriculum may focus student attention towards holistic approach about management of neonatal and childhood illness and enhance its usage in future clinical practice. In the present study, knowledge with regard to diseases included in IMNCI was more and comparable to Malik MZ study conducted at Sindh Medical College.²¹ On the other hand, only one fourth students correctly knew about age groups included in this protocol. This was contrary to the expectation and might be due to the fact that they had no clear understanding of differentiating problems in young infant and child. In our study, 34% showed complete while 59.3% found to have partial knowledge about basic principles of IMNCI that is to assess, classify the disease, identify treatment and refer the child if needed. This parallels to Menon P study which showed 72% medical students knew it.¹⁵ Student's complete knowledge regarding assessment of sick young infant upto 2 months by symptoms was 26% and check for illness was 15.4%. It was quite less as compared to child 2month-5years (50.3% and 61.8% respectively). In response to recognition of danger signs, most respondents were aware of one or more danger signs in children age 2months-5years. This was consistent with a study conducted at medical college in Gujrat.²² The poor knowledge level for the young infant could be due to the fact that students hesitate to handle newborn and find difficult to assess and classify newborn illness. This ultimately reflect the poor skills of health staff regarding neonatal examination and delayed referral contributing to high newborn death rate which is stagnant for last two decade in our

Table-1: Students responses to IMNCI core content questions.

Questions	Student Responses n (%)			Score Mean	SD
	No knowledge (score=0)	No knowledge (score=0)	No knowledge (score=0)		
What does IMNCI stand for?	64 (22.50)	65 (22.80)	156 (54.7)	1.32	0.82
Name the diseases included in IMNCI?	16 (5.60)	102 (35.80)	167 (58.60)	1.53	0.60
Age groups included in IMNCI?	120 (42.10)	90 (31.60)	75 (26.30)	0.84	0.81
Select basic principles of IMNCI?	18 (6.30)	169 (59.30)	98 (34.40)	1.28	0.57
Select the symptoms to be asked in infant under 2m age?	3 (10.50)	181 (63.50)	74 (26.0)	1.15	0.59
Which problems are routinely checked in infants upto 2 month age?	18 (6.30)	223 (78.20)	44 (15.40)	1.09	0.46
Danger signs according to IMNCI??	14 (4.90)	95 (33.30)	176 (61.80)	1.57	0.59
Select the major symptoms asked in child 2 month -5 years?	20 (7.0)	121 (42.50)	144 (50.50)	1.44	0.62
According to IMNCI the children upto 5 years to be checked for which immunizations?	30 (10.50)	147 (51.60)	108 (37.90)	1.27	0.64

country. In the light of above findings there is need to improve IMNCI teaching along with bedside demonstration which may enhance knowledge and skills of students. An Indian study, revealed knowledge of possible serious bacterial Infections and nutrition in infant aged 0-2months was almost twice among trained ($P<0.0001$).²³ Knowledge level in the domain of immunization to be given in children upto 5 years was found to be high. Majority of students have partial or full knowledge about vaccinations included in IMNCI. This was contrary to Ramanuj V et al study that showed only 50% internee doctors correctly knew the National Immunization schedule.¹⁴ Analysis of individual student performance revealed that majority got score in the range of 50%-80% about IMNCI protocol and did practice it in ward. This can be attributed to the fact that trained teachers are available in public sector that encourage students to practice IMNCI learning during pediatrics ward rotation. Current study was conducted only in a public medical university which may not reflect the overall status of student knowledge level in other

medical institutions including private sector. Similar studies should also be carried out in other public and private medical colleges to assess student knowledge with regard to IMNCI guidelines so that modification can be made in their curriculum to improve student's inclination towards child care through supervised practices and drill.

Conclusion

Students general content knowledge about IMNCI was found to be higher as compared to core content. Moreover knowledge related to age groups and assessment of sick young infant was significantly less that needs to be improved further with skill reinforcement and clinical mentoring. To improve health care coverage and quality for neonatal and child health it is needed to focusing on IMNCI knowledge among pre deployment ensure scale up of IMNCI practice to continue.

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Picture Quiz

DYSTROPHIC THUMB NAILS

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A 16 years old boy presented with asymptomatic midline canal like lesions with multiple parallel horizontal ridges extending laterally from canal on both thumb nails for the last 6 months. He had H/O nail biting but no H/O drug intake and allergic or irritant contact dermatitis. There was no H/O similar lesions in other family members. Rest of cutaneous and systemic examination was unremarkable.

Q 1. What is the likely diagnosis?

Q 2. What is the treatment of this condition?



See answer on page # 46