Challenges to implementation of IMNCI strategy in First Level Care Facilities.

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ABSTRACT:

Objective: To assess IMNCI implementation strategy and identify challenges towards effective implementation in first level care facilities of district Jamshoro.

Methodology: This mixed method research was carried out from Jan 2020 to March 2020 at Rural Health Centers (RHC) in District Jamshoro using semi-structured, pre-tested, written questionnaires after taking due approval and written informed consent from respondents. The respondents (representing different cadres of healthcare providers i.e., medical officers (male & female), lady health workers (LHWs), vaccinators, pharmacists and 13 administrative staff. The data obtained (pertaining to perception and views regarding IMNCI implementation and availability of relevant logistics for service provision) was analyzed using SPSS version 22.0 for windows.

Results: The mean age of the sample stood at 42 (SD ± 4) years with a majority comprising of male, dispensing/nursing staff with a mean work experience of 13.2 years (SD ± 1.1) Pneumonia was deemed the commonest childhood problem by most respondents, followed by malaria and others uniformly across all catchments. The understanding regarding IMNCI was common (despite the absence of formal training) yet often, the strategies were not implemented while caring for children.

Conclusion: Effective implementation is a seldom sight with many challenges, including but not limited to shortage of human resource and a rather limited supply of medicines. Thus, efforts must be dedicated at ensuring an ample human resource and a consistent supply of necessary medication.

Keywords: IMNCI, Childhood Illness, Neonatal Illness, Integrated Management, Primary care facility.

Introduction:

Every year over 10 million children in low- and middle-income countries do not survive beyond their 5th birthday among which half of the deaths may be attributable to diarrhoea, malaria, measles and pneumonia, while the other half are caused solely by undernutrition.[1-3] As a preventive strategy, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) introduced a comprehensive plan namely, the Integrated Management of Childhood Illness (IMNCI), to manage the aforementioned conditions. However, IMNCI implementation has not always been a success; reasons pertaining to which are largely not known.[4] For the last few decades, the health focus of the world has been directed towards prevention and control of childhood mortality and childhood morbidity. Half a decade ago, Millennium Development Goals (MDGs) era came to an end and most notably, it brought down the under-five mortality rate to nearly less than half the baseline rate (prior to introduction of the SDGs). However, the decrease was not uniform, with most developed countries exceeding the target and most developing countries lagging very far behind the target of 2/3rd reduction in under-five mortality.[5-7] Resultantly, even today in low- and middle-income nations, nearly 10 million children do not live to see their fifth birthday. Of the total such deaths, nearly a half can be attributed to pneumonia, malaria, diarrhoea and measles,[1,2] while the remaining deaths can be associated with under nutrition status.[3] This prime strategy, namely: the Integrated Management of Childhood Illness (IMNCI) was jointly developed by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) along with numerous other technical partners and the strategy was aimed at reducing mortality associated with the aforementioned conditions. The IMNCI strategy is comprised of a set of guidelines that dictate management protocols that must be followed while caring for sick children at first-level / primary care facilities. The guidelines serve the purpose of offering evidence-based information needed to provide care that may effectively improve assessment and management of child's presenting condition. It works on the algorithms embedded in the pre-defined strategies that match presenting symptoms to different illness and then suggest suitable management approaches. Tests have revealed that even junior healthcare professionals, when following these algorithms can provide the care that is at par (in terms of quality) to senior pediatricians.[4] Once such monitoring and evaluation research stemming from Bangladesh reveals a 35% reduction in deaths associated with pneumonia, measles, diarrhoea and malnutrition in children aged below 5 years.[8] In the absence of basic amenities in the primary / first level care facilities; it becomes imperative that the time tested and scientifically proven strategies developed by the WHO and UNICEF be adopted namely; Integrated Management of Childhood Illness (IMNCI).[9]

Methodology:

This cross-sectional study, during 1st Jan 2020 to 31th March 2020, was conducted among medical, dispensing/nursing and administrative staff assigned to first-level care facilities, specifically Rural health centres (RHC) of district Jamshoro, namely:

1. RHC Bhan Saeedabad

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2- Chief Medical Officer, Paediatric unit II
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3- Student Final year MBBS
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2. RHC Arazi
3. RHC Jhangra
4. RHC Sann
5. RHC Unarpur

During study period 35 respondent, selected through convenient sampling, from 5 RHCs were interviewed. These includes male and female medical officers, lady health workers, vaccination staff, pharmacist and hospital administrative staff working in paediatric Indoors or outpatient departments in designated RHC.

The data were gathered using semi-structured, pre-tested, interview-based questionnaires. These questionnaires were designed with separate sections to ensure data collection from all relevant RHC personnel. The questions were open-ended to facilitate the acquisition of qualitative data on the perceptions and views of RHC personnel regarding IMNCI implementation in their facilities. The collected data was coded and analysed thematically. Additionally, a checklist was utilized to verify the availability of necessary logistics for IMNCI implementation at the facility.

Data was analysed using the statistical package for social sciences SPAS version 22.0 for Windows. The implementation of the IMNCI strategy was evaluated based on the proportion of patients assessed, classified, and treated in line with IMNCI protocols on a monthly basis. The challenges to implementation were identified using categorical and continuous variables. Categorical variables were assessed and presented as frequency and percentage, while continuous variables were calculated and presented as mean and standard deviation if applicable.

Results:

The mean age of the sample stood at 42 (SD ±4) years with a majority comprising of male, dispensing/nursing staff with a mean work experience of 13.2 years (SD ±11) Pneumonia was deemed the commonest childhood problem by most respondents, followed by malaria and others uniformly across all catchments. The understanding regarding IMNCI was common (despite the absence of formal training) yet often, the strategies were not implemented while caring for children. The average age of the sample was 42 years (SD ±4), mostly consisting of male dispensing/nursing staff with an average work experience of 13.2 years (SD ±11). Pneumonia was identified as the most common childhood issue by the majority of respondents, followed by malaria and other conditions evenly across all areas. Although the understanding of IMMC was widespread (despite the lack of formal training), the strategies were often not implemented when caring for children. Among 35 participants, a quarter of the respondents were females, accounting for 25.70%, while 74.30% were males. The majority of participants fell within the age range of 36 to 50 years. 85.57% of the respondents resided in urban areas, with the remaining 11.43% living in rural areas. Most of the respondents were dispensers/nursing staff by profession. The administrative staff at RHC typically includes male or female medical officers. All respondents were experienced, it was ranging from 4 to 23 years, with a mean of 13.2 years (SD ±11). The majority of the sample worked 40 hours per week, while one-third worked fewer than 40 hours per week.

Table 1. Distribution of gender, duty hours & Residential status of Health Care Providers

Gender		
Male 74.3%	Female 25.7%	Total 100%
Residential status		
Rural 11.43%	Urban 88.57%	Total 100%
Weekly working hours		
< 40 hours 34.3%	>40 hours 65.7%	Total 100%

Table 2. Distribution of age, working experience & professional profile of Health Care Providers

Age	Working experience	Professional profile
<30 years 02 (5.7%)	<5 years 06 (17.1%)	Medical officer 10 (28.6%)
31 to 35 years 05 (14.2%)	6 to 10 years 08 (22.9%)	Woman medical officer 05 (14.3%)
36 to 40 years 10 (28.5%)	11 to 15 years 07 (20%)	LHW/LHV 04 (11.4%)
41 to 45 years 11 (31.4%)	16 to 20 years 06 (17.1%)	Dispenser 10 (28.57)
46 to 50 years 05 (14.5%)	21 to 25 years 06 17.1	Vaccinator 4 11.42
51 to 55 years 02 (5.7%)	> 25 years 2 5.71	Pharmacist 2 5.71
Total 35 (100%)	Total 35 (100%)	Total 35 (100%)

Discussion:

The average age of the sample was 42 years (SD ±4), mostly consisting of male dispensing/nursing staff with an average work experience of 13.2 years (SD ±11). The minimum requirement was 6 months of work experience, and all respondents exceeded this requirement (ranging from 4 to 23 years) with an average work experience of 13.2 years (SD ±11). However, IMNCI training was rarely conducted for more than a few weeks. Published evidence indicates that IMNCI training up to 3 years prior is linked to significantly better case management compared to districts without IMNCI.

This underscores the importance of recurrent trainings.[10,11] The majority of the respondents were males, with only a small percentage being females. This is not surprising as there is a higher recruitment of male health professionals in primary care facilities, as male medical officers are often expected to work longer hours compared to their female counterparts. The recruitment of male medical officers is based on the assumption that they can work more hours, however, a significant number of respondents actually worked less than the standard 40 hours per week. This contradicts existing research indicating that males typically work longer hours than females, which is further supported by the fact that despite the higher number of males in all

the Rural Health Centres (RHCs) involved in the study, a notable proportion worked less than 40 hours per week.[12,13] A majority of the respondents were dispensers/nursing staff by profession. While quantitative audits of the hospital records were not included in the study, qualitative interviews were conducted to inquire about common ailments. Pneumonia was identified as the most common childhood issue by most respondents, followed by malaria and other ailments consistently across all catchments. This aligns with local literature, which indicates that pneumonia is among the top 3 causes of death in children under five, followed by malaria and neonatal sepsis.

Thus, further solidifying the necessity for IMNCI strategy implementation.[14,15] The knowledge about IMNCI was widespread (despite the lack of formal training); however, the strategies were often not put into practice when caring for children. Enhancing the frequency and quality of training was deemed beneficial by most healthcare staff in the RHCs. Among the challenges identified through thematic analysis and triangulation of the respondents' interviews, it was found that absenteeism, insufficient staffing levels, and ineffective training were commonly reported. Furthermore, it was noted that there was a shortage of medication available in the RHCs, which could significantly hinder effective implementation and result in the unnecessary referral of patients who could otherwise be easily managed. This aligns with existing literature, as most studies emphasize the importance of providing essential medication.[16,17]

In over half of the cases, a dedicated IMNCI corner was absent in the setup. The number of trained staff did not exceed 1/5th of the setups, ambulances were equally scarce, and almost 2/3rds of the setups lacked the necessary preparation to maintain a cold chain for vaccines. Even basic resources like information booklets were missing in over half of the setups, and essential medications were not guaranteed in all setups. This scarcity of basic amenities raises concerns about the smooth functioning of the IMNCI protocol. The situation may be attributed to a weak economy, corruption, or neglect. Regardless of the cause, the focus should be on the urgent need for improvement.[18,19] The lack of a dedicated IMNCI corner could indicate a lack of interest in implementing the protocol or a shortage of space in the RHC to allocate for this purpose.

The shortage of trained staff may have various reasons, but the outcome remains the same, i.e., a limited ability to implement the IMNCI protocol. Maintaining the cold chain is crucial to ensure the effectiveness of the administered vaccines and booster doses. Therefore, the absence of this maintenance is a serious concern for health authorities, who must reassess the quality and viability of vaccines (requiring cold chain maintenance) given at the sites. Ambulances are also essential not only for transferring patients to healthcare facilities but also for transporting those referred to specialized institutes. The lack of ambulances may lead to unsuccessful referrals. This is evident in the following data, which shows that the referral rate is almost half of the total turnover.

Conclusion:

Thorough assessment showed that successful implementation was uncommon due to various challenges, such as a lack of human resources and limited medicine supply. Therefore, it is crucial to focus on securing sufficient human resources and a steady medication supply to execute the IMNCI strategy at hospitals.

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