

Challenges Faced During the Application of The Integrated Management Of Childhood Illness (IMCI) Policy In Public Health Units Of Sohag Governorate

¹Seham A Abokresha , ¹Fouad M. A. Yousef , ²Aya Magdy fathy, ¹Magda Mohamed Ali

¹Public Health Department, Faculty of medicine, Sohag University. ²Family Medicine Department, Sohag City, Sohag, Egypt.

Submission Date: 04-04-2021

Revision Date: 22-05-2021

Acceptance Date: 23-05-2021

Abstract

Background: There was a strict need to apply IMCI policy in public health units all over the developing countries. **Objective:** The study was designed to identify the challenges that have been faced the PHC physicians during the application of the IMCI policy, the level of adherence to its guidelines and difficulties in practicing its skills in relation to the IMCI training course received. **Method:** This study was conducted during the period February 2020 to May 2020 and included 349 physicians applying IMCI guidelines during the study period from whom data were collected using pre-designed questionnaire. **Results:** The most frequently reported significant difficulties in the IMCI case managing process were in classification of child's status (48.7%), evaluation of the child's status (30.7%), and guidance of caretaker (16%). A significant effect of the duration of IMCI training course on the perceived difficulties to practice skills of the IMCI case managing process was detected. **Conclusion:** The present study had announced the challenges during the application of IMCI policy in Sohag governorate, as perceived by physicians in the primary health care centers.

Key Words: *Challenges; IMCI application; children less than five years.*

Correspondence: Seham A Abokresha.

E-Mail: sehamghalib@yahoo.com

Introduction

Integrated Management of Childhood Illness (IMCI) is an economic policy for controlling most of the common illnesses and deaths of children less than five years. Despite the progresses in reducing deaths of children less than five in all over the world, over ten millions of children less than five years old die each year, with the large number of these deaths occurring in developing countries. Around the world, nearly half of the deaths in children less than five are due to infectious diseases, in corporation with malnutrition, which could be prevented or treated.¹ Integrated Management of Childhood Illness (IMCI) is a policy that had been developed by the World Health Organization (WHO), Pan-

American Health Organization (PAHO), and the United Nations Children's Fund (UNICEF) with the aim of improving the health status of the world's children^[2]. Since 1999, the Egyptian Ministry of Health and Population had applied the IMCI policy in 84% of public health units.³ It is an economic policy that depends upon evidence-based management policies for the most widely recognized reasons for death and illness in children less than five years that improves the quality of care.⁴ The policy includes three components: Improving health systems support, case-managing skills of physicians and community practices.⁵ IMCI approach can give optimism in

improvement of clinical and communication skills of health care provider, rationale drug use (especially antibiotics) and great level of satisfaction of care takers at these units.⁶ However there are still some challenges facing the application of IMCI as how to deliver the effective interventions to the vulnerable group, how to reach the maximum coverage of the services with keeping of the quality of the provided services and how to obtain political support and resources for implementation and sustainability.⁷ This study aimed at identifying the challenges that have been faced by PHC physicians during the application of the IMCI policy, difficulties and assessment of PHC physicians adherence to the rules of IMCI policy.

Method

A cross sectional survey was conducted to accomplish the objective of this study during period from February 2020 to May 2020 in Sohag governorate.

The study was conducted on currently working physicians in units applying IMCI guidelines that were incorporated purposively in the sample. They included MCH, Family Health, Primary Health Care Centers and Rural Health Units.

The list of MCH, Family Health, Primary Health Care Centers and Rural Health Units in Sohag governorate were covered by selecting random sample of working physicians in it during the period of the study. The sample size was 349 physicians all over these units and centers in Sohag governorate.

Data collection and study instrument:

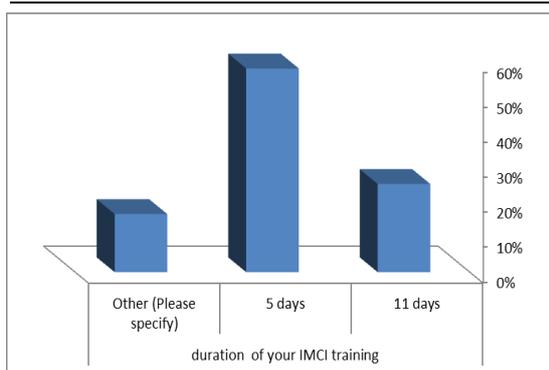
The data was collected by personal interviews with physicians after taking an oral consent from them. Data were collected using a predesigned questionnaire⁸ that includes questions about a wide range of exposure and confounder variables. The questionnaire used in this survey was included

Table (1): Age and gender distribution of studied physicians in MCH Units, Family Health Units, Primary Health Care Centers and Rural Health Units in Sohag governorate during 2020 N=349:

	No.	%	
Age	20-24 years	2	0.6
	25-29 years	267	76.5
	30-34 years	60	17.2
	35-39 years	5	1.4
	40-44 years	3	0.9
	45-49 years	4	1.1
	50-54 years	4	1.1
	55-59 years	4	1.1
	Above 60 Y.	0	0.0
Total	349	100	
Gender	Male	112	32.1
	Female	237	67.9
Total	349	100	

two parts: Section A: Demographic data of the respondents: Asked about the demographic data of the physicians, his or her professional background, experience obtained since completing training course, and the year in which IMCI training course was completed, as well as the type of training received. Section B: Challenges faced during the application of the IMCI policy: Inquired about the challenges faced by IMCI qualified physicians during the application of the IMCI policy.

Statistical analysis: Statistical Package for the Social Science (SPSS) program (version 20) was used for grouping, tabulation, and analysis of the data. Quantitative data were presented as mean, standard deviations and ranges. Meanwhile, qualitative variables were presented as number and percentages. Chi-square test was used in the comparison between two groups with qualitative data and Fisher exact test was replaced the Chi-square test when the expected count in any cell found less than 0.05. The confidence interval was set to set to 5%. **Figure (1): The duration of**



IMCI training spent by the studied physicians in MCH Units, Family Health Units, Primary Health Care Centers and Rural Health Units in Sohag governorate during 2020 N=349.

95% and the margin of error accepted was So, the p-value was considered significant at the level of < 0.05 , highly significant at the level of < 0.01 .

Ethical consideration

Approval of conducting the research was acquired from Scientific Research Ethics Committee of the faculty of Medicine, Sohag University before starting data collection. During data collection stage, verbal consents were also secured from the studied physicians who included explanation of the purpose of the study to them ensuring strict confidentiality and anonymity of all the collected data.

Table (2): Difficulties in practicing case managing skills using IMCI skills among the studied physicians in MCH Units, Family Health Units, Primary Health Care Centers and Rural Health Units in Sohag governorate during 2020 N=349:

		No	%	
Skills of the IMCI case management found difficult to apply	Assess the child's condition	Yes	107	30.7
		No	142	40.7
		Sometimes	100	28.7
	Classify the Child's status	Yes	170	48.7
		No	99	28.4
		Sometimes	80	22.9
	Identify treatment	Yes	1	0.3
		No	297	85.1
		Sometimes	51	14.6
	Treat the child	Yes	32	9.2
		No	150	43.0
		Sometimes	167	47.9
	Guide the caretaker	Yes	56	16.0
		No	123	35.2
		Sometimes	170	48.7
Provide complement care	Yes	8	2.3	
	No	54	15.5	
	Sometimes	287	82.2	

Results

This current survey had encompassed 349 physicians whose age and gender distribution was shown in table (1) as follow, majority of physicians 76.5%

were between 25 and 29 years, of them 67.9% of them were females. Figure (1) shows that more than half of physicians were spending 5 days duration during training and 25.2% of physicians were spending 11 days. As shown in table (2), about 30.7% of physicians had found a difficulty to

Table (3): Opinion of the studied physicians about IMCI policy health in MCH Units, Family Health Units, Primary Health Care Centers and Rural Health Units in Sohag governorate (during 2020, N=349).

	SA		A		N		D		SD	
	No	%								
IMCI has boosted my confidence and skills in less than five children case managing	5	1.4	137	39.3	206	59.0	1	0.3	0	0.0
It has led to longer patient waiting time because of the duration spent for applying all the phases of the IMCI case managing policy for less than five children.	207	59.3	124	35.5	18	5.2	0	0.0	0	0.0
IMCI policy application has reduced the number of follow up visits by less than five children because of the thorough and accurate case managing during initial visit	202	57.9	123	35.2	24	6.9	0	0.0	0	0.0
It is not practical to always refer to the IMCI chart booklet in the clinic during case managing of every presentation	11	3.2	136	39.0	193	55.3	9	2.6	0	0.0
All IMCI qualified physicians at our unite apply all the phases of the IMCI policy during case managing of children less than five years.	1	0.3	89	25.5	224	64.2	35	10.0	0	0.0
Our health unite lay-out does not create it stress free for us to practice all the IMCI skills like observing first dose treatment, rehydration corners etc.	0	0.0	233	66.8	116	33.2	--	--	--	--
The case managing skills of IMCI qualified physicians and non-IMCI qualified physicians are varying; Hence caretakers of less than five prefer to be evaluated by nurses who are not IMCI qualified.	37	9.6	4	1	104	27	137	35.6	103	26.8

SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

assess the child's status and near half of them 48.9% had found a difficulty to classify the child's status. As regard their opinion about the IMCI policy, table (3) shows that 59% of them were neutral as regard that IMCI had improved their skills in less than five children case managing, and 39.3% were agree. Regarding, the longer patient waiting time during the application of all the phases of the IMCI case managing rules for less than five children, more than half of the physicians 59.3% were strongly agreeing. As regard that IMCI had lowered the quantity of complement visits by less than five year children due to the precise case managing throughout the initial visit, 57.9% of the studied physicians were strongly agreeing. As regard that all IMCI

qualified physicians at their health unit apply all the phases of the IMCI policy during case managing of children less than five years, 64.2% of them were neutral and 10% were disagreeing. Regarding that health units lay-out did not create it stress-free for them to practice all the IMCI abilities as observing the initial dose of treatment, rehydration corners etc, about 66.8% of the studied physicians were agreeing and 33.2% were natural. As regard that case managing practices of IMCI-trained physicians and non-IMCI qualified physicians were varying; hence caretakers of less than five preferred to be evaluated by nurses who were not IMCI qualified, about 35.6% of them were disagreeing with that. Table (4) shows that 81.1% of the studied physicians were

Table (4): Experience of studied physicians in the application the rules and measures of the IMCI policy during 2020 N=349

	SA		A		N		D		SD	
	No	%	No	%	No	%	No	%	No	%
IMCI is a user-friendly policy for physicians	3	0.9	283	81.1	58	16.6	5	1.4	0	0.0
IMCI is easy to understand and apply	0	0.0	6	1.7	79	22.6	261	74.8	3	0.9
IMCI policy is too long	0	0.0	276	79.1	61	17.5	12	3.4	0	0.0
IMCI is time-consuming	2	0.6	236	67.6	103	29.5	8	2.3	0	0.0
IMCI is not practical to use at our unit	0	0.0	101	28.9	242	69.3	6	1.7	0	0.0
IMCI is difficult to understand and apply	1	0.3	213	61.0	127	36.4	7	2.0	1	0.3
supervisor does not appreciate rationale for IMCI	36	9.4	9	2.3	65	16.9	264	68.6	10	2.6
Physicians supervisor is not IMCI-trained	--	--	4	1.1	63	18.1	276	79.1	6	1.7
Patient-doctor proportion does not allow for the application of IMCI policy	2	0.6	275	78.8	61	17.5	11	3.2	--	--
IMCI rules are too unsophisticated, it weakens my clinical training	--	--	155	44.4	92	26.4	89	25.5	13	3.7
IMCI drugs are frequently out of stock	6	1.7	265	75.9	68	19.5	10	2.9	--	--
Some physicians have negative attitudes towards IMCI	6	1.7	313	89.7	26	7.4	4	1.1	--	--
IMCI illustrations and chart booklets are frequently unavailable	--	--	3	0.9	23	6.6	309	88.5	14	4.0
Lack of IMCI complement training by IMCI facilitators	--	--	165	47.3	166	47.6	18	5.2	--	--
Lack of supervision by IMCI trainers	7	2.0	304	87.1	34	9.7	4	1.1	--	--
Health units is not well equipped to support the application of IMCI policy procedures	7	2.0	255	73.1	77	22.1	10	2.9	--	--

SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

agreeing with that IMCI were a user-friendly policy for physicians. As regard that IMCI was easy to understand and apply, 74.8% of them were disagreeing. Most of physicians, 79.1% were agreeing with that IMCI policy was too long. As regard that IMCI was time-consuming, 67.6% of them were agreeing. More than two third of the studied physicians, 69.3% were neutral as regard that IMCI was not practical to use at their units. Regarding that IMCI was difficult to understand and apply), 61% of the studied physicians were agreeing and 36.4% were neutral. As regard that (supervisor did not appreciate rationale for IMCI, 68.6% of them were

disagreeing. Most of the studied physicians 79.1% were disagreeing with that physician's supervisor was not IMCI-trained. As regard that patient-doctor proportion did not permit for the application of IMCI policy, most of them 78.8% were agreeing. In the concern of that IMCI guidelines were too unsophisticated, it weakens their clinical training, about 44.4% of them were agreeing and 25.5% were disagreeing. Most of physicians, 89.7% were agreeing with that some physicians have negative attitudes towards IMCI. As regard that IMCI illustrations and chart booklets were inaccessible, 88.5% were disagreeing.

Table (5): Association between type of IMCI training course and difficulties in practicing IMCI case managing skills among the studied physicians during 2020 N=349

		Type of IMCI training				Chi square test	
		In-service training		Pre-service training		X ²	P value
		No	%	No	%		
Assess the Child's status	Yes	2	6.5	105	33.0	9.596	0.008 *
	No	16	51.6	126	39.6		
	Sometimes	13	41.9	87	27.4		
Classify the Child's status	Yes	15	48.4	155	48.7	21.869	0.001 *
	No	0	0.0	99	31.1		
	Sometimes	16	51.6	64	20.1		
Identify treatment	Yes	0	0.0	1	0.3	0.181	0.913
	No	27	87.1	270	84.9		
	Sometimes	4	12.9	47	14.8		
Treat the child	Yes	4	12.9	28	8.8	0.664	0.718
	No	12	38.7	138	43.4		
	Sometimes	15	48.4	152	47.8		
Guide the caretaker	Yes	7	22.6	49	15.4	18.65	0.001 *
	No	0	0.0	123	38.7		
	Sometimes	24	77.4	146	45.9		
Provide complement care	Yes	1	3.2	7	2.2	1.508	0.471
	No	7	22.6	47	14.8		
	Sometimes	23	74.2	264	83.0		
No. Of physicians		37		340			

Regarding the shortage of IMCI complements training by IMCI facilitators, 47.3% of them were agreeing and 47.6% were neutral. As regard the lack of supervision by IMCI trainers, more than two third were agreeing. Table (5) Shows that there were a significant association between the type of IMCI training course wither in-service or out-service training and the difficulty of applying it in relation to assessment of the child's status, categorizing the child's status and guidance the caretaker (p value= 0.008, 0.001, 0.001). As regard the association between the duration of IMCI training course and the difficulty of applying it, table (6) shows that it was significantly affecting the capacity of the studied physicians to evaluate the child's status, categorize the child's status, treat the child and guide the caretaker (p value= 0.001 for all)

Discussion

This study was designed to judge the application of IMCI at the PHC units at Sohag governorate, Egypt. In particular, our study aimed to identify the challenges that have been faced by PHC physicians during application of the IMCI policy, evaluate their practice and level of adherence to the guidelines of IMCI policy. Most of physicians (79.4%) in the current study had stated that they have not received any IMCI complement training. Moreover, near half of them (47.3%) agreed on the lack of IMCI complement training by IMCI facilitators, while (47.6%) were neutral, and only 5.2 disagreed. Our findings were in line with a number of previous studies. In a survey study with 95 physicians at PHC units in Mwanza, Tanzania, all physicians had stated that they received no revision IMCI courses after their original training^[9]. In

Table (6): Association between duration of IMCI training course and difficulties in practicing IMCI case managing skills among the studied physicians during 2020 N=349:

		Duration of IMCI training						Chi square test	
		11 days		5 days		Other		X ²	P value
		No	%	No.	%	No	%		
Assess the Child's status	Yes	41	46.6	65	32.0	1	1.7	127.63	0.001 *
	No	32	36.4	104	51.2	6	10.3		
	Sometimes	15	17.0	34	16.7	51	87.9		
Classify the Child's status	Yes	22	25.0	96	47.3	52	89.7	66.1	0.001 *
	No	44	50.0	55	27.1	0	0.0		
	Sometimes	22	25.0	52	25.6	6	10.3		
Identify treatment	Yes	0	0.0	1	1.7	0	0.0	11.729	0.019
	No	73	83.0	169	83.3	55	94.8		
	Sometimes	15	17.0	34	16.7	2	3.4		
Treat the child	Yes	4	4.5	27	13.3	1	1.7	88.207	0.001 *
	No	22	25.0	73	36.0	55	94.8		
	Sometimes	62	70.5	103	50.7	2	3.4		
Guide the caretaker	Yes	9	10.2	45	22.2	2	3.4	27.131	0.001 *
	No	46	52.3	55	27.1	22	37.9		
	Sometimes	33	37.5	103	50.7	34	58.6		
Provide complement care	Yes	0	0.0	8	3.9	0	0.0	13.037	0.011
	No	19	21.6	22	10.8	13	22.4		
	Sometimes	69	78.4	173	85.2	45	77.6		
No. of physicians		69		215		65			

that study, 69% of physicians felt that IMCI training courses were not satisfactory and proposed that revision training workshops were needed to supplement the IMCI training course received from a workshop setting. Also, up to 64% of physicians from Botswana had stated the same problem.¹⁰ In a multicounty survey, the majority of countries had challenges in conducting complements after IMCI training. This was attributed to deficient financial resources for travel budgets (93%), shortage of trained managers (41.4%), and insufficient employment supports for follow up training (27.6%). There were also problems in achieving sufficient reach and handling of IMCI training. Physicians who were thought to apply IMCI needed about 11–16 days of training, which follows the WHO rules;

however, they were assessed by the national IMCI representatives from Ministries of Health for requiring this duration of time.¹¹ A study from Pakistan highlighted the disconnect between policymakers and physicians. In that study, some interviewed physicians expressed their uncertainty about the anticipated tasks for IMCI policy application after getting a short IMCI training course.¹² An interview-based study from Gauteng province, South Africa had reported that the shortage of precision of roles and accountability among various stakeholders were important causes for failure of IMCI implementation. This study demonstrated a difficulty with incorporating the IMCI into prevailing health polices, leading to fragmentation of governance structures that affected not only the IMCI program

but also other child health programs. Specifically, other programs, such as the expanded program on immunization (EPI) and tuberculosis were often prioritized and not integrated with the IMCI policy. In addition, the managers of these programs were not adequately trained in IMCI, which undermined awareness of the IMCI aspects within these child health programs.¹³ Another qualitative study in Yemen, physicians had declared the absence of coordination between IMCI and other programs in the health system, including overlapping programs on nutrition, immunization, and malaria control, which negatively impacted the implementation of IMCI. In this study, some physicians reported that they were better off without IMCI due to strict rules and absence of integration with other programs.¹⁴ Huicho et al. in 2005 had visited 34 districts in Peru where they interviewed district's physicians and reviewed district records.¹⁵ This study had announced problems within the health sector policy and strategic management levels. The physicians reported that the shortage of political guarantee, poor authority, absence of specific financial resources, and a failure to make child health on the top priorities at the national level were among the main problems that faced them during the application of IMCI policy in public health units. In a cross-sectional survey in 27 countries representing the six WHO regions, a shortage of buy-in from the national investors was among the difficulties in scale-up of IMCI in six countries.¹⁰ In an interview-based study with 22 physicians from public health units in Uganda, concerns were reported that donors shifted interests away from IMCI program, and there were no enough financial resources to support some of the core activities.¹⁶ The present study evaluated the opinion of physicians about the most difficult skills of the IMCI case managing process to practice. The most

frequently reported significant difficulties were in categorizing of child's status (48.7%), evaluation of the child's status (30.7%), and guidance of caretaker (16%). Our findings are higher than some studies. In a study from Botswana [10], only 13% of physicians perceived that categorizing of the child's status was challenging, and 10% of them reported that they have difficulties in evaluation of the child, guidance of caregivers, and identification of treatment. Likewise, in a study conducted by Abdo et al in 2016, all included Egyptian physicians attained acknowledged practicing both categorizing and treatment, while none had satisfactory practicing in communication.¹⁷ On the other hand, the findings of our study are generally lower compared with a number of previous studies, in a survey study including four countries (Namibia, Kenya, Tanzania, and Uganda), despite the wide expansion of the IMCI program application, 67% of physicians failed to identify IMCI danger signs and early symptoms, which are central for the successive skills in the IMCI policy.¹⁸ Similar results were obtained from South Africa, where 53.2% of children with severe illness were incorrectly classified.¹⁹ In an Ethiopian study, 37.2% of infants at IMCI-units were incorrectly classified and 57.3% were wrongly treated.²⁰ Likewise, a study from Papua New Guinea on 1605 young children, there was notably deficient adherence to IMCI case managing procedures regarding the prescription of antibiotics in 40% of cases.²¹ Our study revealed a significant effect of the duration of IMCI training course on the perceived difficulties to practice skills of the IMCI case managing process. The 5-days training was associated with statistically significant more perceived challenges in all the 6 skills of the IMCI case managing process compared with the 11-days training. Our results are constant with previous studies, for example, in a

Tanzanian study, training for two weeks duration was considerably related to an increased alertness of physicians about IMCI compared with a one-week training duration ($p < 0.001$).⁹ In another study from Limpopo and Kwazulu-Natal province in South Africa that involved 77 IMCI-trained physicians, in which the average 11-day IMCI training course was found to be too short to acquire all essential IMCI skills. In addition, the complement training was inadequate to ensure competency in the performance of the comprehensive assessments. The adherence of physicians to IMCI rules was considerably different, and physicians often committed incorrect categorizations even after receiving the IMCI training. This study recommended the need to re-evaluate the IMCI training course resources and methods to ensure that the IMCI policy is appropriately implemented.¹⁹ Moreover, a systematic review of 29 studies concluded that average IMCI training course seems more operative than condensed ones. As a large performance discrepancy often exists after IMCI training; countries should contemplate the application of other programs to support physicians after the course, irrespective to its period.²²

Conclusion

In conclusion, the present study has announced the challenges to the application of IMCI policy in Sohag governorate, Egypt as perceived by physicians in the primary health care centers. These involve challenges in training, supervision, resources, allocation of duties, patient-physician ratio, and governance and planning. Moreover, we made relevant recommendations for promoting IMCI implementation, which are important for policymakers and health planners on how to address these challenges to further enhance the performance of IMCI and reduce child deaths and illnesses in our

locality.

Recommendations

IMCI training course should be extended to lower-level crews like health care assistance to boost the number of physicians capacitated to apply IMCI. IMCI training course should be extended to senior managers to boost their confidence in supervising IMCI policy implementers.

Ensuring that all physicians treating children less than five years of age should be IMCI qualified.

All IMCI qualified physicians should only focus on management of less than five child's illness.

IMCI training course should be a standard for the provision of daily duties and the deployment of physicians to duty stations. Conducting regular studies to evaluate challenges to implementation of IMCI policy in Sohag governorate from the viewpoint of physicians.

Limitations: The current study was conducted among physicians in all MCH Units, Family Health Units, Primary Health Care Centers and Rural Health Units in Sohag governorate, which needed long duration for data collection to allow total coverage of all the physicians. In addition to that some of the physicians were uncooperative with us as they did not understand the aim of the study.

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