

Application of the Integrated Management of Childhood Illness

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ABSTRACT

The objective of this study was to describe the use of the Integrated Management of Childhood Illness (IMCI) strategy by doctors and nurses that work in the Family Health Strategy program in a major city of midwestern Brazil. This descriptive study involved 50 physicians and 51 nurses working in family health units. Data were collected using a questionnaire. Most of the respondents were female (69.3%) and had graduated three to five years prior to data collection (32.7%). In terms of knowledge, 50.5% showed they were familiar with the content of the IMCI strategy, learned during their undergraduate studies. About 44.6% of professionals partially applied, this approach and the most frequently used element was growth and anemia assessment (25.4%). The findings raise some concern, since the failure to apply all the IMCI components may prevent these professionals from detecting treatable diseases in primary health care, thus increasing the number of preventable hospital admission.

Descriptors: Integrated Management of Childhood Illness; Primary Health Care; Pediatric Nursing; Child Health.

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INTRODUCTION

In the early 90s, in order to address the poor health conditions observed in the child population worldwide, the World Health Organization (WHO), the Pan American Health Organization (PAHO), and the United Nations Children's Emergency Fund (UNICEF) proposed the strategy of Integrated Management of Childhood Illness (IMCI)⁽¹⁾. Brazil officially adopted the strategy in 1995; however, this intervention approach was only actually inserted in the Family Health Strategy program in 1996, when the protocols were adapted to Brazilian epidemiology.

The aim of the IMCI is to address the health needs of children; strengthen the integrated approach to child health care; take preventive measures; encourage health promotion; improve the efficiency and quality of care; and act as a gateway for detecting and treating other health problems in order to reduce child mortality⁽²⁾. This strategy proposes a number of preventive and curative actions, including health education, especially for nutritional recovery, and the encouragement of breastfeeding and immunization, thus improving the health condition of children.

The World Health Organization (WHO) does not specify which practitioners should apply IMCI; however, their standards were created for use preferably in primary health care units. In Brazil, nurses and doctors, especially those who work in the Family Health Strategy (FHS) should be trained to apply IMCI.

The importance of IMCI has been proved by the changes in health indicators of countries in which it has been adopted. Countries such as Afghanistan, Yemen, Ghana, Morocco, Bangladesh, Uganda, Tanzania, and Botswana have shown significant improvements in the quality of child health care and reduced the hospitalization and infant mortality rate⁽³⁻⁷⁾.

Infant mortality in Brazil has sharply decreased over the last three decades, especially in the poorest regions of the country⁽⁸⁾, but there is no research that demonstrates⁽⁸⁾ the relationship between the implementation of IMCI and the reduction of child deaths.

Despite the important benefits, many countries have faced challenges implementing IMCI. These challenges include the limited scope of initial training for health practitioners, a shortage of essential drugs and supplies, and lack of mentoring, refresher courses, and regular support supervision⁽⁴⁾, as well as the insufficient funding and high cost of training courses⁽⁷⁾. In the opinion of the authors of the referred study, these challenges could be overcome by increasing the number of health professionals trained on IMCI and extending training to all health workers, including mid-level practitioners.

An article that discusses the 20 years of IMCI implementation and its impact in South Africa found this country has had some success in implementing the strategy, especially with regard to training for primary healthcare workers. However, the limited IMCI practice of trained practitioners and the poor adherence of physicians to its guidelines led to a poor implementation of the strategy and insufficient impact in terms of improving child health in the country⁽⁹⁾.

In many countries, IMCI has been only partially implemented^(7,9). In Brazil, despite the lack of recent research on the adoption of IMCI, a study conducted in the mid-2000s showed that IMCI had not been implemented in the regions with the highest concentration of health professionals⁽¹⁰⁾. Although nursing professionals recognize the importance of the strategy, its application is limited to the sign and symptom assessment module⁽¹¹⁾.

Research conducted in the cities of Fortaleza, Brazil, and Lima, Peru, with health managers and IMCI facilitators also revealed the predominantly clinical use of the approach to the detriment of community and health services. The results show that, in Peru, the strategy was adopted by the government and included in child health policies. In Brazil, on the other hand, it has neither been adopted at national or state level and its methodology has not been incorporated in the child health care routine; moreover, the Brazilian government has reduced investments aimed to the training of professionals on the strategy⁽¹²⁾.

In spite of the scarcity of research proving the decreasing use of IMCI in Brazil, the most recent of these few studies show limitations in its implementation. It concludes IMCI is not a completely deployed project and still requires higher investment in the training of health professionals for its effective implementation, in addition to policies and reinforcements in the strategic lines of promoting child health.

IMCI reinforces the concept of comprehensive children's care, thus contributing to resolution at primary care level, and enables the systematization of childcare. Its use by family health workers, therefore, is fundamental for the promotion children's health care.

This study is justified by the lack of actual research on the application of IMCI in Brazil and because the only study carried out in the Midwest region of Brazil revealed the partial use of the strategy by family health professionals. It is also justified by the absence of official data on IMCI implementation in the state of Mato Grosso and its capital, Cuiabá. Furthermore, it serves as a base for assessing the actions of health workers in order to qualify the care provided to children in primary care.

Thus, this study aims to describe the use of the Integrated Management of Childhood Illness (IMCI) strategy by doctors and nurses working in the Family Health Strategy program in a major city of the midwestern region of Brazil.

METHOD

This is a descriptive study with a quantitative approach, based on the application of the IMCI strategy by nurses and doctors working in family health units (FHU) in the capital of a state in the Midwest region of Brazil. The research was conducted in family health units because IMCI application is linked to this area of work of health practitioners.

The studied FHU were located in Cuiabá, capital of the state of Mato Grosso, Brazil. In 2013, in the data collection period, Cuiabá had 62 family health teams in its urban area, each consisting of a multidisciplinary team (doctor, nurse, nursing technicians/assistants, and community health workers).

The study population was composed of 109 health professionals, of which 58 were nurses and 51 were physicians. The chosen professionals were those working in family health teams at the time of data collection. Thus, 101 professionals, 50 physicians and 51 nurses, were involve, as none of them refuse to participate.

A questionnaire was developed by the researchers and used for data collection. It was subjected to a pre-test in another city, to detect and correct possible problems or errors in the filling of the questionnaire itself, the clarity of the questions or any other issue that might arise during the research. Data were collected by the leading researcher and nursing students previously trained, from March to May 2013.

The questionnaire was composed of open-ended and closed-ended questions. It was designed to collect data on the respondents and the FHU in which they work, their professional training, the training they have

received in IMCI, and issues regarding IMCI application, based on the training course manuals prepared for the strategy by the Ministry of Health.

The methodology of integrated care of IMCI cases proposed by PAHO in 2009⁽²⁾ was used to analyze the use of IMCI by health workers. This method includes the following components: assess the child (check signs and symptoms of common diseases), classify the disease, determine the treatment, treat in accordance with the classification, advise the mother/caregiver, and schedule the follow-up. Regarding the category classification used to guide the analysis, answers that included all these elements were rated as makes full use.

Data were processed with the help of the EPI-Info statistics software, version 3.5.2. Descriptive statistics was used for the analysis, which evaluated percentage of response frequency. The results are presented in tables.

This study complied with all the ethical rules of Resolution 466/2012 of the National Health Council and was approved by the Research Ethics Committee under opinion No. 194315.

RESULTS

The results of the research show that 69.3% of participants were female, 50.5% held a degree in nursing, and 47.5% reported they had graduated in the last five years. Regarding graduate studies, 70.3% reported they had completed a *lato sensu* course and 41.6% of these courses were in the field of family health. With regard to time working in the FHS, 29.7% of respondents said they had been working in the strategy from three to five years (Table 1).

Table 1: Profile of nurses and doctors working in family health teams in Cuiabá, Mato Grosso, Brazil, 2013. (N= 101).

Variable	f	(%)
Gender		
Female	70	69.3
Male	31	30.7
Degree		
Nursing	51	50.5
Medicine	50	49.5
Time from graduation		
Less than 1 year	6	6.0
1 to 2 years	9	8.9
3 to 5 years	33	32.7
6 to 10 years	27	26.7
More than 10 years	26	25.7
Lato sensu graduate studies		
Yes	71	70.3
No	24	23.8
Ongoing	6	5.9
Field of graduate studies		
Family Health	32	41.6
Public health	15	19.5
Child health	2	2.6
Other	28	36.3
Time working in the FHS*		
Less than 1 year	15	14.8
1 to 2 years	24	23.8
3 to 5 years	30	29.7
6 to 10 years	19	18.8
More than 10 years	13	12.9

* FHS: family health strategy. Source: research data

Table 2 shows the characteristics of the training the professionals had received on IMCI. Of the 101 respondents, 50.5% said that the strategy was approached during their undergraduate studies, and 37.3% rated this approach as good. Most of respondents reported they had not been trained to use IMCI.

Table 2: Approach to the Integrated Management of Childhood Illness during the training of nurses and doctors working in family health teams in Cuiabá, Mato Grosso, Brazil, 2013. (N= 101).

Variable	f	%
IMCI addressed during undergraduate studies		
Yes	51	50.5
No	50	49.5
Opinion about the quality of content on IMCI during undergraduate studies		
Good	19	37.3
Very good	17	33.3
Insufficient	15	29.4
IMCI Training		
Yes	27	26.7
No	74	73.3

* IMCI: Integrated Management of Childhood Illness.

Of the interviewed professionals, 44.6% reported they partially applied IMCI. Growth and anemia assessment (25.4%) and feeding assessment (23.2%) were among the most widely used elements of the strategy. The main reasons for not using IMCI were lack of trained (48.8%) and lack of knowledge about the strategy (31.7%), as shown in Table 3.

Table 3: Use of Integrated Management of Childhood Illness by professionals working in family health teams in Cuiabá, Mato Grosso, Brazil, 2013.

Variable	f	%
How professionals use IMCI (N= 101)		
Makes full use ¹	18	17.8
Makes partial use	45	44.6
Does not use	38	37.6
Most used IMCI elements² (N=138)		
Growth and anemia assessment	35	25.4
Feeding assessment	32	23.1
Danger sign assessment	31	22.5
Classification of Diseases	24	17.4
Prescription of medication	16	11.6
Reasons for not using IMCI³ (N= 38)		
No training	20	52.7
Lacks knowledge of IMCI	13	34.2
Does not know not how to use it	5	13.1
Other strategies used to assess the child⁴ (N=57)		
Growth and development	32	56.1
Iron supplementation program	18	31.6
Protocols for outpatient care	7	12.3

References:

¹ Answers classified as 'makes full use' were for workers who applied all the elements: assess the child (check signs and symptoms of common diseases), classify the disease, determine the treatment, treat in accordance with classification, counsel the mother/caregiver, and schedule the follow-up.

² The question about the most used IMCI elements was made to those professionals who partially used the strategy. As the question may have more than one answer, N is the number of answers received (138).

³ The question about the reasons for not using the IMCI was made only to those professionals who reported not to use the strategy (N=38).

⁴ The question about other strategies used to assess the child was made only to those professionals who reported they did not use the strategy in the care of children. They could give more than one answer (N=57).

DISCUSSION

The predominance of female practitioners in the FHS is a characteristic of the health workforce in most Brazilian states, according to studies carried out in different cities of the country⁽¹³⁻¹⁴⁾.

A relatively recent completion of undergraduate studies of the professionals that worked in the FHS has also been observed in other studies, such as those involving nurses in the states of Rio de Janeiro⁽¹⁵⁾ and Maranhão⁽¹⁶⁾.

Recent graduation can be a positive factor for the consolidation of care strategies for family health, including the IMCI strategy, especially since recently graduated professionals may have benefited from the changes made in the curricula of health courses. In Brazil, IMCI has been inserted in the curricula of medicine and nursing courses for over 15 years⁽¹²⁾.

With regard to graduate studies, the profile of the professionals involved in this study is similar to that of those who worked in FHS of Santa Cruz do Sul, RS, and Serra, ES⁽¹³⁻¹⁴⁾. The profile reveals the interest of the professionals to hone their performance, a move they also take to secure their jobs, challenged by unstable employment agreements. Moreover, the profile of professional health workers, found in the present study, can be understood as a commitment to expand the scientific basis of their work in the FHS.

As for the time of work in the FHS, the length of stay of the professionals in the unit, and their work experience, may influence the work itself and the ability to create bonds with the community. Such bonds are fundamental for the success of the FHS work, especially actions aimed at children, which need the engagement of the family to monitor child health.

The link built with the community establishes co-responsibility in health, by developing, over time, trust and close relations between health professionals and the community⁽¹⁷⁾. This construction takes time, so a longer time working at the unit is fundamental for strategies, such as the IMCI, to achieve their goals.

Since 1998, the Brazilian Ministry of Health has worked closely with universities to include content of government programs and strategies, including IMCI, into the curricula of undergraduate nursing and medicine courses. The aim is to direct the training of health professionals toward current policy guidelines, especially those aimed at the comprehensiveness and promotion of health care.

Nevertheless, a study that investigated the teaching of IMCI in undergraduate nursing courses in Brazil revealed only two thirds of these courses have incorporated IMCI as theoretical content in their curricula, and only 50% of the studied colleges included practical IMCI activities in child health. The study also found that only 39.4% of the professors were trained in IMCI⁽¹⁸⁾, which may influence the decision of including this content in undergraduate courses.

A study conducted with graduates from the School of Nursing of the University of São Paulo also focused on the inclusion of IMCI in undergraduate courses. It found that participants recognize the importance of learning about IMCI during the course and stress the need to integrate all disciplines that include the subject in order to optimize the workload and foster a better assimilation of such content⁽¹¹⁾.

The success of IMCI deployment and implementation depends equally on the involvement of universities and educators, since the knowledge acquired during their studies allows professionals to enter the labor market

with better qualifications and to become multiplier agents of the strategy in the community and within their teams.

With regard to the training on IMCI received by the professionals after graduation, the results of this study showed most graduates had not completed any type of course/training. On the other hand, a research on the knowledge of FHS nurses about IMCI conducted in Imperatriz, MA, found that more than half of the participants had been trained on the IMCI strategy⁽¹⁶⁾. It is noteworthy that training on IMCI for health workers began in 1996 and encompasses doctors and nurses in a joint action with the health services. However, since the 2000s, the continuity of systematic training gradually diminished as the subject was included in the curricula of nursing and medicine courses. According to health managers and IMCI facilitators of Fortaleza, CE, the Brazilian government has reduced investments in IMCI training, despite its importance for children's health⁽¹²⁾.

Training in the IMCI strategy can improve the skills, knowledge, and confidence of professionals. A study on the performance of health workers after being trained in IMCI, conducted in Benin, showed that these workers were more likely to correctly classify child diseases, prescribe medicines, monitor child vaccination, and advise families regarding proper nutrition and administering oral medications⁽³⁾.

A research on the perception of nursing students on the use of IMCI in Oman, Arabian Peninsula, after training and application of a questionnaire, found that, for the students, the IMCI training had indeed contributed to their vocational training. Participants stated they intended to apply the knowledge and skills related to the strategy in their future clinical practice⁽¹⁹⁾.

Partial use of IMCI was found in some studies conducted in Brazil. They focused on the insertion of the IMCI strategy into the practice by graduates from the School of Nursing of the University of São Paulo (EUSP), and revealed the studied professionals applied the strategy only partially, limited to the assessment module⁽¹¹⁾.

Similarly, a study involving nurses and doctors working in an FHU of the same city of this study revealed partial implementation of IMCI in their practice. It stated professionals applied the recommendations of this methodology, but failed to systematize and use the recommended instruments⁽²⁰⁾. It should be noted these findings are the result of a qualitative research involving a small number of professionals of the state, including its capital city.

In this study, lack of training was found to be the main reason for not using the strategy for almost half of the participants. However, the training of professionals on IMCI is not always enough to ensure satisfactory care is provided in response to common health problems, such as dehydration, acute ear infection, and severe malnutrition, as shown by the results of a study on the knowledge of IMCI among primary care nurses⁽¹⁶⁾.

With regard to other strategies used by professionals to assess children during the consultation, the most common strategy was growth and development assessment, which professionals seem to consider dissociated from IMCI. This misunderstanding was also observed in a previous study in Cuiabá, MT, Brazil⁽²⁰⁾. IMCI care methodology, however, encompasses all the approaches and programs pointed out by the participants. Children must be assessed and classified for the presence of signs and symptoms of common diseases or other health problems and, if necessary, referred to the specialized services. They must also have their growth and development assessed, as well as their vaccination status. Finally, another expected action is counseling the mother or caregiver with regard to caring for the child at home.

Despite the international debate about the usefulness of the IMCI strategy, reviews of its implementation have not been published, in recent years, in Brazil and other countries, such as South Africa⁽⁹⁾. This highlights the need to resume government investments in order to revitalize and strengthen the strategy, and solve any shortcomings and difficulties in its implementation, especially regarding the training of health workers. It also highlights the need to make IMCI a priority in the political agenda for child health in Brazilian states and municipalities.

This study has the typical limitations of a descriptive study, in addition to presenting only data collected from practitioners without conducting a practice observation. Nevertheless, its results may serve as a basis for planning local policies and draw the attention of managers and professionals to the importance of using the IMCI approach in childcare. The results may also serve as a basis for other research on the subject given its relevance to the care of children.

CONCLUSION

The results showed that 44.6% of respondents reported they partially apply the IMCI strategy, and that the assessment of growth, development, and anemia was the most used IMCI element. The main reason stated by these professionals for not using IMCI was lack of training. The most widely used care strategy by the respondents who do not apply the IMCI was the growth and development assessment, demonstrating lack of knowledge on the scope of IMCI.

The results of this research demonstrate the need to rethink the implementation and use of IMCI throughout the state, as the strategy has a positive impact on infant morbidity and mortality rates, as well as other health indicators. Although Cuiabá is benchmark for childcare, it has limitations regarding the use of this strategy, suggesting, other cities of the region will probably face the same issue. Furthermore, the findings are a call for reflection on the practice of childcare professionals and management practices, especially with regard to articulating all childcare strategies and ensuring comprehensiveness.

Moreover, the results reinforce the need to increase the awareness of health managers on the importance of training and providing continuing education for health professionals who work with children. These benefits will better quality workers to provide integrated and comprehensive health care to children.

Although the results of this study are identical to those found in other Brazilian regions, they contribute to the production of knowledge on IMCI in the study region, in view of the scarcity of research on this subject. Research should be extended to other cities of the state to provide a broader perspective of the status of the strategy in the primary care system. The study also indicates the need for new investments in research, particularly in observational and analytical studies that may reveal the status of IMCI implementation in Brazil.

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