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Research article

COMPARISON OF THE KNOWLEDGE, ATTITUDE AND PRACTICES OF ESSENTIAL MEDICINES AMONG MEDICAL PRACTITIONERS OF A MEDICAL COLLEGE VERSUS PRIVATE MEDICAL GENERAL PRACTITIONERS OF AN URBAN PLACE OF SOUTH INDIA

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ABSTRACT

Background: India is the third largest producer and exporter of medicines to most of the countries. The World Medicine Situation Report 2011 states that 65% persons in India do not have access to essential medicines. While, huge unethical prescribing of drugs for monetary gains has been a second major cause of rural indebtedness. **Aims and Objectives:** The primary objective of the study was to compare the Knowledge, Attitude and Practices of Essential Medicines among Medical Practitioners of a Medical College and Private Medical General Practitioners of an urban place, e.g. Perambalur District of South India. **Materials and Methods:** After ethical approval, the study was started, in Dhanalakshmi Srinivasan Medical College and Hospital (DSMCH), Siruvachur-621113, Perambalur, Tamil Nadu. It was a questionnaire based study. The faculties of the DSMCH and Medical Private Practitioner of Perambalur district included as participants in the study. We distributed knowledge, attitude and practice (KAP) based 15 multiple choice questions on National Essential Medicine List, 2011 (NEML) to each healthcare professionals (HCPs) to attempt within 15 minutes. **Results:** Overall, Knowledge, attitude and practices regarding NEML 2011 were 57.06%, 38.36%; 51.16%, 51.82%; 21.73%, 28.7% to HCP from DSMCH and HCP from Perambalur district, respectively. Whereas, 42.2 % HCPs from DSMCH and 44.7 % HCPs from Perambalur district were prescribed branded and generic drugs both. **Conclusion:** The result's data shows that regular awareness programmes should be conducted to update knowledge, change attitude and practices regarding essential medicines to serve the society as best as possible.

Key words: Essential Medicine List (EML), National Essential Medicine List (NEML), Knowledge, Attitude, Practice, (KAP), Essential medicine.

INTRODUCTION

Access to essential medicines is a fundamental human right. India is the third largest producer and exporters of medicines to most of the countries.^[1] Whereas, huge unethical prescribing of unnecessary drugs for monetary gains by health service providers has been a second major cause of rural indebtedness.^[1] While, the World Medicine Situation Report 2011 states that 65% persons in

India do not have access to essential medicines.^[2] Therefore, an earlier attempt of establishing low cost quality generic medicines, motivating providers to prescribe generic medicines and follow standard treatment protocols partially succeeded and Provision of free medicines to all patients seeking care in government hospitals has improved access to health care many folds. The

WHO has defined “Essential medicines (drugs) those that satisfy the priority healthcare needs of the population. They are selected with due regard to public health relevance, evidence on efficacy and safety, comparative cost effectiveness and it should be available at all time, in adequate amounts, in appropriate dosages forms, with assured quality and adequate informations”^[3] Though, healthcare professionals play an important role to prescribing essential medicines, so question arises what about their awareness on essential medicines. Thus, the present survey conducted to compare the Knowledge, Attitude and Practices regarding Essential medicines among Medical practitioners of a Medical College and Private Medical General Practitioners of an urban place, e.g. Perambalur District of South India.

Aims and objectives: The primary objective of the study was to compare the Knowledge, Attitude and Practices of Essential medicines among Medical practitioners of a Medical College and Private Medical General Practitioners of an urban place, e.g. Perambalur District of South India.

MATERIAL and METHODS

After getting approval from the ethics committee, the present study was conducted in the month of February 2014, in Dhanalakshmi Srinivasan Medical College and Hospital (DSMCH), Siruvachur-621113, Perambalur, Tamil Nadu. The study was questionnaire based comparison among two groups of the healthcare professionals. The Professors, Associate Professor, Assistant Professor, senior and junior resident (SR, JR), pharmacist, dentist and casualty medical officer (CMO) of DSMCH included in group ‘A’ and they are abbreviated as “A_DSMCH_HCP” and Medical General Practitioner of Perambalur district included in group ‘B’ and they are abbreviated as “B_Perambalur_GP”. We distributed 5-knowledge, 5-attitude and 5-practice (KAP) based, i.e. 15 multiple choice questions which was based on National Essential Medicine List, 2011 (NEML) to each healthcare professionals (HCPs) to attempt within 15 minutes.

Statistics: After evaluation of each paper, we analyzed the data by using Epi Info Free available online/offline software and statistical calculations done; like percentage, chi-square test, p-values.

RESULTS

We formed two groups, 61 healthcare professionals from DSMCH in group ‘A’ (A_DSMCH_HCP) and in group ‘B’ (B_Perambalur_GP) 61 general practitioners from Perambalur District. The demography of the participated HCPs were the 11-professor, 4-associate professor, 22-assistant professor, 4-senior resident (SR), 9-junior resident (JR), 1-casualty medical officer (CMO), 7-pharmacist and 3-dentist were participated in group “A”, out of 61 HCPs. While all 61 HCPs of group “B” were General practitioners from various medical subjects. Average age of the included HCPs was 39 years and 45 male, 16 female HCPs were from DSMCH, while 49 male, 12 female HCPs were from Perambalur District. We analyzed knowledge, Attitude and Practices (KAP) about essential medicines of 61 HCPs of A_DSMCH_HCP and 61 HCP of B_Perambalur_GP; Perambalur District. Obtained responses data shown in table 1, 2 and 3 respectively. **Statistics:** We used Epi. Info free available online/offline software to calculate the obtained responses in percent and applied Chi- square test and calculated p-value of each questions’ response.

Knowledge on National Essential Medicine & its List 2011: Overall, 57.06% HCP from DSMCH and 38.36% HCP from Perambalur district were aware about EML 2011, while 21.98%, 28.86% HCP were do not know about EML 2011 from DSMCH and Perambalur district respectively and even 20.98%, 32.82% HCP from DSMCH and Perambalur district were not sure about knowledge of EML 2011 respectively (Table 1).

Attitude about HCP for National Essential Medicine & its List 2011: Overall, 51.16% HCPs from DSMCH attitude were strongly agree or strongly like to attend/refer NEML 2011, while; 51.82% HCPs from Perambalur district attitude was strongly agree or strongly like to attend/refer NEML 2011. One side, 44.94% HCPs from DSMCH were like to refer NEML, whereas 40.62% HCPs from Perambalur district were like to refer NEML (See details on Table 2).

Practices about National Essential Medicine & its List 2011 for HCPs: 8.2 % HCPs from DSMCH always prescribed generic drugs, whereas, 14.8%

prescribed branded drugs, while 62.3% HCPs prescribed branded as well as generic drugs both. 6.6% HCPs from Perambalur district always prescribed generic drugs, whereas, 36.1% prescribed branded drugs, while 55.7 % HCPs prescribed branded as well as generic drugs both. Overall, 21.73 % HCPs from DSMCH and 28.7 %HCPs from Perambalur district were always prescribed branded

drugs, respectively, while; 20.9 % HCPs from DSMCH and 20.9% HCPs from Perambalur district were frequently prescribed old essential drugs, respectively. Whereas, 42.2% HCPs from DSMCH and 44.7% HCPs from Perambalur district were prescribed branded and generic drugs both (See details on Table 3)

Table1: Knowledge Based Questions and obtained Responses of Both Group ‘A’ and ‘B’ HCPs

	Knowledge Based Questions	A-DSMCH_HCP			B-Perambalur_HCP			Chi-squared	pValue
		Know	Don't Know	Not Sure	Know	Don't Know	Not Sure		
Q.1	Indian Essential Medicine list 2011 is the List of drugs by generic names and it is required to satisfy the priority healthcare needs of a population.	39 (63.9%)	7 (11.5%)	15 (24.6%)	34 (55.7%)	0	27 (44.3%)	10.8	0.005
Q.2	*NLEM2011 incorporated with twenty seven sections with 348 drugs.	30 (49.2%)	20 (32.8%)	11 (18%)	6 (9.8%)	38 (62.3%)	17 (27.9%)	22.9	0
Q.3	Indian EML2011 formulary has Basic drug informations like Dose, Generic name, Clinical indications.	40 (65.6%)	8 (13.1%)	13 (21.3%)	26 (42.6%)	18 (29.5%)	17(27.9%)	7.3	0.03
Q.4	Essential medicines selection criteria are Pattern of prevalent diseases, Relative efficacy, cost and suitability of drugs and treatment facilities.	46 (75.4%)	10 (16.4%)	5 (8.2%)	32 (52.5%)	12 (19.7%)	17 (27.9%)	9.2	0.01
Q.5	WHO revise and publish essential medicine list in every two years interval, while Govt. of India, MOHFW published EML in 1996, 2003, 2011.	19 (31.2%)	22 (36.1%)	20 (32.8%)	19 (31.2%)	20 (32.8%)	22 (36.1%)	0.2	0.9
Knowledge about NEM2011 (Total Percentage in Average):		57.06%	21.98%	20.98%	38.36%	28.86%	32.82%		
Abbreviations: *NLEM= National list of Essential Medicine, MOHFW= Ministry of Health and Family Welfare.									

Table 2: Attitude Based Questions and obtained responses of both groups ‘A’ and ‘B’HCPs

	Attitude Based Questions	A-DSMCH_HCP			B-Perambalur_GP			Chi-squared	pValue
		Strongly like to refer	Like to refer	Dislike to refer	Strongly like to refer	Like to refer	Dislike to refer		
Q.6	Have you ever refer essential Medicine list 2011 or your Hospital formulary in last three years?	19 (31.2%)	42(68.9%)	0	17 (27.9%)	41(67.2%)	3(4.9%)	3.1	0.2
Q.7	Have you ever read any article regarding essential medicines or attended any seminar, conferences, symposium, CME, workshop etc. on it?	18 (29.5%)	42 (68.9%)	1 (1.6%)	37 (60.7%)	19 (31.1%)	5 (8.2%)	17.9	0.000
Q.8	Do you think prescribing essential medicines should be made mandatory?	40(65.6%)	18(29%)	3(4.9%)	37(60.7%)	19(31%)	5(8.2%)	0.6	0.7
Q.9	Do you think prescribing Generic drugs should be made mandatory?	35(57.4%)	19(31%)	7(11.5%)	25(40.9%)	29(47%)	7(11.5%)	3.8	0.2
Q.10	I Strongly like, like, dislike, to select essential medicines as per its relative efficacy, cost and suitability for the treatment.	44 (72.1%)	16 (26.2%)	1 (1.6%)	42 (68.9%)	16 (26.2%)	3 (4.9%)	1.05	0.6
Attitude for EML2011 (Total Percentage)		51.16%	44.94%	3.9%	51.82%	40.62%	7.54%		
Abbreviations: *CME = Continue medical Education , EML2011: Essential Medicine List2011									

Table3: Practice Based Questions and obtained responses of both groups ‘A’ and ‘B’HCPs

Practice Based Questions	A-DSMCH_HCP				B-Perambalur_GP				Chi-squared	pValue
	Presented		Not Presented		Presented		Not Presented			
Q.11. Have you presented / not presentednumbers of articles / posters on Essential Medicine in last three years?	1 (1.6%)		60 (98.4%)		0		61 (100%)		-	-
Q 12. I prescribe/ don't prescribe Generic / branded / both drugs.	Branded drugs	Generic drugs	Both (Branded & Generic drug)	Don't Both drugs	Branded drugs	Generic drugs	Both (Branded & Generic drugs)	Don't both drugs	12.2	0.007
	9 (14.8%)	5 (8.2%)	38 (62.3%)	9 (14.8%)	22 (36.1%)	4 (6.6%)	34 (55.7%)	1 (1.6%)		
Q 13. I always / frequently / occasionally prescribe / don't prescribe essential drugs.	Always	Frequently	Occasionally	Don't both drugs	Always	Frequently Prescribe	Occasionally prescribe	Don't both drugs	9.6	0.02
	26 (42.6%)	30 (49.2%)	3 (4.9%)	2 (3.3%)	15 (24.6%)	29 (47.5%)	9 (14.8%)	8 (13.1%)		
Q 14. I prescribe/ don't prescribe New drugs / Old drugs / both drugs.	new drugs	old drugs	Prescribe both drugs	Don't both drugs	new drugs	old drugs	both drugs	Don't both drugs	21.1	0.0001
	6 (9.8%)	2 (3.3%)	43 (70.5%)	10 (16.4%)	0	0	61 (100%)	0		
Q15. I prescribe/ don't prescribe Zinc supplements always / frequently occasionally to acute diarrhoeal children.	Always	Frequently	Occasionally prescribe	Don't prescribe Both drugs	Always prescribe	Frequently Prescribe	Occasionally prescribe	Don't prescribe Both drugs	24.2	0
	12 (19.7%)	14 (22.9%)	19 (31.2%)	16 (26.2%)	33 (54.1%)	18 (29.5%)	5 (8.2%)	5 (8.2%)		
Practice about EML2011 (Total percentage)	21.73 %	20.9 %	42.2%	15.2%	28.7 %	20.9 %	44.7%	5.7%		

DISCUSSION

“An essential medicines list (EML) is a limited number of carefully selected medicines by the authorized committee. For many decades, such lists have been published as formularies and institutional lists of medicines that are made available to health facilities and health workers. These may not be called EMLs but they serve the same function. EMLs have been one of the cornerstones of public health delivery and the basis for efforts to ensure consistent medicine supply and management”.^[4] The characteristic features of Essential medicines (drugs) those that satisfy the priority healthcare needs of the population, they are selected with due regard to public health relevance, evidence on efficacy and safety, comparative cost effectiveness and it should be available at all time, in adequate amounts, in appropriate dosages forms, with assured quality and adequate information.^[5] Thus, EML is an important strategy in improving access to and use of medicines, especially for the vulnerable segment of a population. Furthermore, an EML can be used as an

advocacy tool to help countries spend their limited resources on the medicines that are most needed and offer the best value for money.^[6] So, on this juncture, awareness programmes targeting various stakeholders like doctors, patients, consumer groups, and the media are needed.^[7] The present study compares the knowledge, attitude and practices about Indian National essential medicines list 2011 among HCPs of DSMCH as well as Perambalur district. We observed that, overall, 57.06% HCPs from DSMCH and 38.36% HCPs from Perambalur district had knowledge in EML 2011, while (55% Hettihewa LM, 2010), though 21.98% HCPs from DSMCH and 28.86% HCPs from Perambalur district were do not know about EML2011 and even 20.98% HCPs from DSMCH and 32.82% HCPs from Perambalur district were not sure about knowledge of EML2011. Whereas, (54% Hettihewa LM, 2010 of his study group and 29% Hettihewa LM, 2010 MPs had fair knowledge in EDL and 17 % Hettihewa LM, 2010) were not aware about EDL in their own study). Thus, obtained data in the present study indicate that timely interval evaluation needed to check and update knowledge regarding EML of HCPs that will help to

improve patients' safety and teaching curriculum of pharmacology. The similar suggestion was also given by Hettihewa LM, 2010 in his study. Overall, 51.16% HCPs from DSMCH attitude were strongly agree or strongly like to attend / refer NEML2011, while; 51.82% HCPs from Perambalur district attitude was strongly agree or strongly like to attend/refer NEML2011. Even, 44.94% HCPs from DSMCH were like to refer NEML, whereas 40.62% HCPs from Perambalur district were like to refer NEML. The 65.6% HCPs from DSMCH and 60.7% HCPs from Perambalur district attitude were prescribing essential medicines should be mandatory, respectively. Whereas, the 57.4 % HCPs from DSMCH and 40.9 % HCPs from Perambalur district attitude was prescribing generic drugs should be mandatory, respectively.

The 72.1% HCPs from DSMCH and 68.9% HCPs from Perambalur district attitude was strongly like to select essential medicines as per its relative efficacy, cost and suitability for the treatment, respectively.

The 1.6%, i.e., only one out of 61 HCPs from DSMCH have presented an articles / posters related to Essential Medicine in last three years. While, no one HCPs from Perambalur district presented an article / poster which was related to essential medicine.

The 14.8 %, 8.2 % and 62.3 % HCPs from DSMCH were prescribed branded drugs, generic drugs and branded as well as generic drugs both, respectively, whereas, 36.1 %, 6.6 % and 55.7 % HCPs from Perambalur district were prescribed branded drugs, generic drugs and branded as well as generic drugs both, respectively. While, Mahajan R, et al, 2010 reported in his study that only 15.1% clinicians wrote the generic drugs.^[8]

The 42.6%, 49.2% and 4.9% HCPs from DSMCH were prescribed essential drugs always, frequently and occasionally, respectively, while, 24.6%, 47.5% and 14.8% HCPs from Perambalur district were prescribed essential drugs always, frequently and occasionally, respectively.

The 9.8%, 3.3% and 70.5% HCPs from DSMCH were prescribed new essential drugs, old essential drugs and new as well as old both essential drugs, respectively, while, all 61 HCPs from Perambalur district, i.e., 100% HCPs were prescribed new as well as old both essential drugs.

The 19.7%, 22.9% and 31.2% HCPs from DSMCH were prescribed zinc supplements always, frequently and occasionally in acute diarrhoeal children, respectively, though, 54.1%, 29.5% and 8.2% HCPs from Perambalur district were prescribed zinc supplements always, frequently and occasionally in acute diarrhoeal children, respectively.

CONCLUSION

The primary responsibilities of the healthcare professionals, that many awareness programmes should be conducted to increase knowledge about essential drugs, and attitude of the healthcare professionals should be changed to promote use of essential medicines as well as generic medicines and this changed attitudes of healthcare professionals should be practiced in routine working environment, then it will be possible to provide medicines to almost all needy people. Even, it is well known information that, "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition".

Limitations: The obtained data in the present study was based on the responses of the healthcare professionals from the given questionnaire on National Essential Medicine List 2011 only.

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Conflict of Interest: Nil

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