EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 5
Issue: 9
479-483
Year: 2018

TO ASSESS THE KNOWLEDGE REGARDING CHILDHOOD LEAD POISONING AMONG MOTHERS OF CHILDREN ADMITTED IN PAEDIATRIC UNIT IN A SELECTED HOSPITAL, MANGALURU

Rincyjose[1], Rosemary[1], Sherin Joseph[1], Shyamamol[1], Soly Antony[1], Sony P. S. Pulimoottil[1], Suresh Majaggi[1] and Vani R.*

*Lecturer, Department of Community Health Nursing, Yenepoya Nursing College, Yenepoya(Deemed to be) University Mangaluru, Karnataka, India. 575018.
II Year P.B.B.Sc Nursing Students, Yenepoya Nursing College, Yenepoya(Deemed to be University), Mangaluru, Karnatka.

***Corresponding Author: Vani R.**
Lecturer, Department of Community Health Nursing, Yenepoya Nursing College, Yenepoya(Deemed to be) University Mangaluru, Karnataka, India. 575018.

Article Received on 14/07/2018 **Article Revised on 03/08/2018** **Article Accepted on 23/08/2018**

ABSTRACT

Background: Lead poisoning is one of the most common childhood diseases of toxic environmental origin. Lead poisoning was first recognized as a paediatric disease in Australia over 100 years ago. Today's modern risk results from the unsafe use of dangerous chemicals. Unsafe chemicals in toys and household products may also harm children. **Objectives:**

- To assess the knowledge level regarding childhood lead poisoning among mothers of children admitted in paediatric unit of selected hospital.
- To find the association between knowledge scores regarding childhood lead poisoning and selected demographic variables.

Methods: A non evaluatory quantitative approach with descriptive research design was conducted among 100 mothers having children of 6yr old. Structured Knowledge questionnaire was used by convenience sampling technique. Pilot study was conducted to find out the feasibility of the study. Data collected from the sample were analyzed by descriptive and inferential statistics. **Results:** Overall knowledge level regarding childhood lead poisoning, shows that majority of the respondent (70%) had poor knowledge regarding childhood lead poisoning,(22.0%) of them have average level knowledge and (8%) of them had good knowledge about lead poisoning. **Conclusion:** There is a significant association between knowledge score and age, religion, educational qualification, occupation and annual family income. Hence research hypothesis is accepted. **Implications for nursing:** Nurses can train the staffs in paediatric unit to inculcate safe practices and give them training for prevention of home accidents. Nursing students can be trained to acquire knowledge in assessing the health status of children and sources of lead exposure. **Implications for social policy:** Awareness programmes can be conducted in schools, community, hospitals through school health programmes, group awareness programme, video assisted teaching, distirbution of pamphlets, leaflets will motivate the caregivers to understand the sources, effects of lead poisoining.

KEYWORDS: Childhood lead poisoning, mothers.

INTRODUCTION

Lead poisoning accounts for about 0.6% of the global burden of disease (WHO, 2009). National surveys estimate that more than 3 million children six years of age and younger have lead poisoning. This number represents almost one out of every six children younger than age 7. Data from the National Hospital Discharge survey (NHDS) showed that each year 20,000 children were admitted due to poisoning. Medicinal substances accounted for 45% and lead poisoning accounted for 11.8% of poisoning cases. Lead is a soft, malleable poor metal. It is also counted as one of the heavy metals. Lead poisoning is a medical condition caused by increased levels of the heavy metal lead in the body, and this can interfere with a variety of body processes & causes toxicity to many organs & tissues. It is also called as Plumbism, colica pictonum or saturnism.[3] The sources of lead in ancient days were lead pots used in cooking and lead lined eating utensils. Now it is different today such as paints, soil and dust, water, lead mixed Jewellery, sindoor, gasoline and also occupational exposure among lead miners, smelters, plumbers, glass

manufactures, construction workers. Lead used by industry comes from mined ores (primary) or from recycled scrap metal or batteries (secondary). Most (97%) of the world's batteries are reported to be recycled, mostly in low-income countries. Global consumption of lead is increasing today, because of increasing demand for energy-efficient vehicle.[4] Across sectional study was conducted on parenting children less than three years of age in Kerala. To assess the knowledge and practice of mother of children less than 3 years. 120 mothers from both rural and urban areas of south India are selected. Mothers were interviewed in their homes using a structured questionnaire. The result shows that majority of mothers had moderately adequate knowledge regarding parenting.[11] Nowadays most of the mothers are jobholder, children are brought up by care takers till they are going to start schooling. So the investigator feels that it is important to know the knowledge of mothers on lead poisoning.

MATERIALS AND METHODS

Sample and setting

A non evaluatory quantitative survey approach with descriptive research design was conducted among 100 mothers having children of 6 year old were selected in selected paediatric unit of selected hospital using convenience sampling technique.

Ethical approvals

Written approvals for the study were obtained from the ethics committee of our University and the management board of the related university hospital (approval number: YUEC2018/032 Date: 22.03.2018). Ethical principles were complied in accordance with ICMR Guidelines and DCGI(CDSCO) Informed consent was obtained from all participants included in the study (Emanuel et al. 2004).

Data collection

We developed a questionnaire covering participants' personal characteristics and Tool -A Demographic characteristics, Tool- B Structured knowledge questionnaire on lead poisoining. The questionnaire comprised of 4 distractors; The respondents were asked to choose any one distractor. The researchers were present to respond to any queries from the Mothers. We performed factor and reliability analyses for the scale; the overall reliability of the items by using test-retest method was $\alpha = 0.91$, and the factor analysis found the scale was feasible. Duration of data collection was 15-20 minutes.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 21.0 (IBM SPSS Statistics for Windows, Version 21.0.; IBM Corp., Armonk, NY, USA). Researchers used descriptive statistics (frequency, percentage, mean and standard deviation) to evaluate participant characteristics. We used tests (chi-square) to find association of knowledge scores with selected demographic variables. The results were evaluated using a confidence interval (CI) of 95% and a significance level of 0.05 level of significance (Spiegel & Stephens 2013).

RESULTS /FINDINGS OF STUDY

The characteristics of the participants are presented in Table 1. The mean values of the knowledge scores are set out in fig 1. The data presented in the table 2 revealed that there is a significant association between knowledge score and some demographic variables like age, religion, educational qualification, occupation and annual family income except type of family, type of house, previous knowledge and source of information. Hence research hypothesis is accepted.

Table 1: Distribution of baseline characteristics in terms of frequency and percentage.
N = 100

Sl. No.	Sample characteristics	Category	Frequency (f)	Percentage (%)
1	Age in year	20-25	52	52.0
		26-30	29	29.0
		31-35	14	14.0
		36-40	5	5.0
2	Religion	Hindu	52	52.0
		Christian	23	23.0
		Muslim	24	24.0
		Any other	1	1.0
3	Educational qualification	Primary education	26	26.0
		Secondary	15	15.0
		Higher secondary	35	35.0
		Graduate	24	24.0
4	Type of family	Nuclear family	45	45.0
		Joint family	35	35.0
		Extended family	7	7.0
		Single parent family	13	13.0
5	Occupation	Government service	16	16.0
		Private service	31	31.0

		Business Housewife	11 42	11.0 42.0
6	Annual income	>30,000 20,001-30,000 10,001-20,000 <10,000	36 26 15 23	36.0 26.0 15.0 23.0
7	Type of house	Pucca Semi pucca Katcha	48 37 15	48.0 37.0 15.0
8	Previous knowledge	Yes No	62 32	62.0 32.0
9	Source of information	Media Magazines Neighbors and friends Health personnel´s	43 31 15 11	43.0 31.0 15.0 11.0

Mean values of knowledge scores among mothers
Overall mean knowledge scores are mean-8.75, Mean % - 35.90%, SD-11.56.

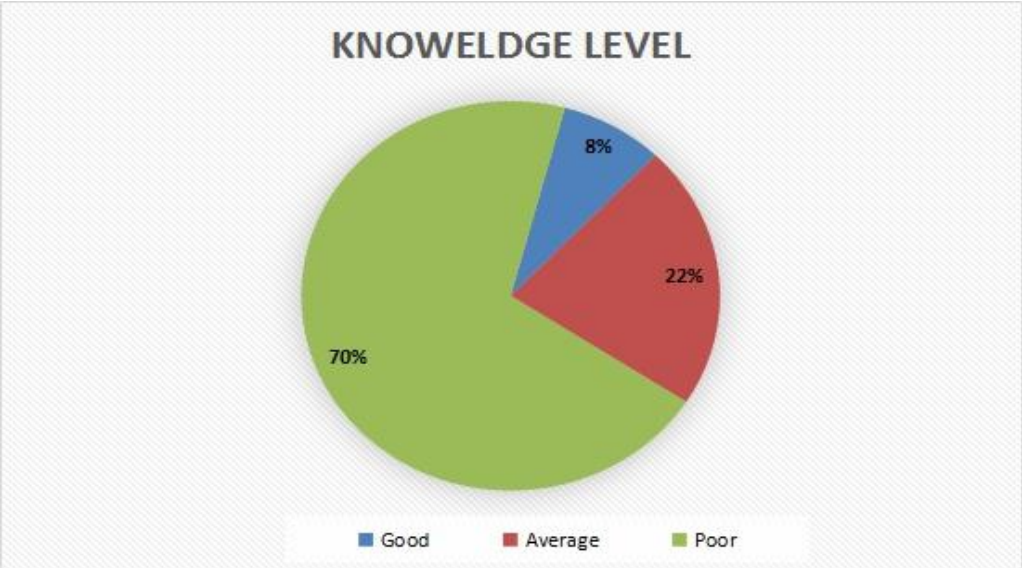

Fig. 1: Grading of overall knowledge level scores.

Table 2: Association of knowledge score with selected demographic variables.
n=100

Sl. No	Demographic Characteristics	Adequate knowledge (≥ 15)	Inadequate knowledge (<15)	χ^2	df	P value	Inference	
1.	Age:				50.64 (YC)	3	0.0001	sig.
	20-25 years	4	45					
	26-30 years	3	26					
	31-35 years	2	12					
	36-40	0	5					
2.	Religion :				10.66	3	0.001	Sig.
	Hindu	2	50					
	Christian Muslim Any other	6 1 0	17 23 1					
3.	Educational qualification				8.08 (YC)	3	0.04	sig.
	Primary	0	26					
	Secondary	3	12					
	Higher secondary Graduate	4 2	31 22					

4.	Type of family				7.82	4	0.09	Not sig.
	Nuclear family	8	37					
	Joint family	1	34					
	Extended family	0	7					
	Single parent family	0	13					
5	Occupation							
	Government service	2	14	24.08 (YC)	3	0.0001	Sig	
	Private sector	3	28					
	Business	0	11					
	Housewife	4	38					
6	Annual Family Income							
	>30,000	6	30	5.01	3	0.17	Sig	
	20,001-30,000	2	24					
	10,001-20,000	1	14					
	<10,000	0	23					
7	Type of House							
	Pucca	3	45	1.75	3	0.64	Not sig	
	Semipucca	5	32					
	Katcha	1	14					
8	Previous knowledge							
	Yes	7	55	1.04	1	0.64	Not sig	
	No	2	36					
9	Source of information							
	Media	5	32	1.06	3	0.60	Not Sig`	
	Magazine	3	20					
	Neighbors	0	15					
	Health personals	1	11					

DISCUSSION

Discussion of the findings is based on the sample characteristics, knowledge score and association between knowledge score with demographic variables. The following of the study are discussed under the following part. Part 1: Description of demographic variables Part 2: Analysis of Knowledge of mothers of children Part 3: Association between knowledge score and selected demographic variables

Part 1: The study shows that 52% of the population were between the age group of 20 -25 years and 29% were between 26-30 years. Most of the population (52.0%) belongs to Hindu religion.(35%) of the mothers having higher secondary educational qualification. The majority of population(45.0%) living in nuclear family. The population consist of (42.0%) are housewives. The study also revealed the annual family income of majority of the family (36.0%) more than 30,000 and (23.0%) have less than 1000.The (48.0%) of the population residing in pucca house and (37%) are belongs to semi pucca house. The study revealed that (62.0%) of the population has previous knowledge about childhood lead poisoning and the source of information from the media(43.0%). **Part 2:** The study result shows that (70.0%) of the subjects are having poor knowledge (22.0%) are having average knowledge and (8.0%) of the subjects are having good knowledge. **Part 3:** The study result shows that there is significant association between knowledge score and age, religion, educational qualification, occupation, and annual family income. Hence the research hypothesis is partially accepted.

There are abundant opportunities for nursing professionals to educate the mothers as well as caregivers regarding the importance of prevention of childhood lead poisoning, occurrence and exposure to lead sources as early as possible and can take the proper preventive measures. The study also implies that since mothers have poor knowledge about childhood lead poisoining, mothers need to be trained about safety measures to be followed for the children. The study findings help to motivate and initiate further research related to identify the potential sources of lead and to prevent the lead poisoning.

CONCLUSION

The study result shows that (70.0%) of the subjects are having poor knowledge,(22.0%) are having average knowledge and (8.0%) of the subjects are having good knowledge. The chi square test to find that association between the knowledge score and demographic variables. It can be concluded that characteristics in terms of age, religion, educational qualification, occupation, and annual family income. Based on study findings it is understood that majority of mothers and care givers are not aware about the sources and effects of childhood lead poisoining. So its necessary to educate the parents about sources of lead and complications of lead to children, what type toys need to be given and preventive measures need to be followed.

ACKNOWLEDGEMENTS

We owe our heartfelt thanks to Dr. Leena K.C, Principal, Yenepoya Nursing College, for her inspiration, encouragement and constant support, To chief medical superindent of Nitte hospital and Yenepoya medical college for giving permission to conduct pilot study and main study in selected hospital Mangaluru. We express our sincere gratitude to madam Mrs. Vani R., Lecturer Department of Community Health Nursing, Yenepoya Nursing College for her inspiring guidance, constructive suggestions, constant care and concern and encouragement to undertake the work successfully. We express special thanks to Mrs. Himani for her valuable suggestion and guidance regarding the application of proper statistical methods. We grateful to all the experts for their valuable suggestions and for validating the data collection tool. Our special thanks to all participants who enthusiastically participated in the study and for being very co-operative and also adding light to our studies with their heartfelt expression. We owe our deep sense of gratitude to our parents for their support and trust in our abilities.

REFERENCES

1. Chen, L.J.X.C.Q. and Yi, S.P.Q., 2006. The harm of lead to children's health and kiwi fruit's promoting lead-discharging mechanism [J]. *Food & Machinery*, *2*: 013.
2. Chao, L.G.W., 2004. Application of Normalization Procedure for Assessing Soil Heavy Metals Pollution in Lead-Zinc Mining Activities [J]. *Industrial Safety and Dust Control*, *10:* 011.
3. FAN, Q.Q. and FENG, Y.J., 2006. The Quantitative Analysis on Bibliometrics in China [J]. *Journal of Jiaxing University*, *4*: 030.
4. Hu, W.S., Huai, Y.C. and Ming, S.X., 2002. Screening the Susceptibility to Childhood Lead Poisoning by the Filter Paper Method. *Chinese Journal of Contemporary Pediatrics*, *5:* 000.
5. Jie, L.I.U., 2007. Relationship of Low-Level Lead Exposure and Neurobehavioral Development in Children [J]. *Journal of Applied Clinical Pediatrics*, *2*: 035.
6. Kim, H.C., etal., 2015. Evaluation and management of lead exposure. *Annals of occupational and environmental medicine*, *27*(1): 30.
7. Min-qiang, D.O.N.G., 2007. Bibliometric Studies on Professional Database of Food Subject [J]. *Journal of Library and Information Sciences in Agriculture*, *5:* 050.
8. McIlvaine, M., Mosammat, F. and Prum, N., Lead Poisoning: The Silent Epidemic Affecting Poor and Minority Children in Urban Areas.
9. Reinecke, M.A., Ryan, N.E. and DuBois, D.L., 1998. Cognitive-behavioral therapy of depression and depressive symptoms during adolescence: a review and meta-analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, *37*(1): 26-34.
10. Zakocs, R.C. and Edwards, E.M., 2006. What explains community coalition effectiveness?: A review of the literature. *American journal of preventive medicine*, *30*(4): 351-361.
11. Zheng, L., etal., 2008. Blood lead and cadmium levels and relevant factors among children from an e-waste recycling town in China. *Environmental Research*, *108*(1): 15-20.