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Research Article

Comparative study to evaluate the awareness about anemia and its complications, among undergraduate and postgraduate medical students- a cross sectional survey study

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ABSTRACT

Background: Anemia is a condition in which numbers of red blood cells or their oxygen carrying capacity is insufficient to meet the physiologic needs which vary by age, sex, altitude, smoking and pregnancy status. Iron deficiency anemia is the most common type of anemia in the world. Aim of the study was to compare and evaluate awareness about anemia and its complications among the undergraduate and postgraduate medical students.
Methods: A prospective, cross sectional, questionnaire based, survey study was carried out at S.B.K.S. Medical institute and RC, Vadodara. The well-defined, structured questionnaire was prepared, distributed and collected when it was duly filled by undergraduate and postgraduate students. The questionnaire was mainly based upon basic knowledge of anemia, its investigations, treatment, and complications. The answers were evaluated in a structured format and further depending on the scores the participants were grouped as poor (<50%), average (50%-70%) and good performers (>70%). Later, it was subjected to Chi-square test and p value <0.05 were considered to be significant.
Results: This study shows that the basic knowledge of anaemia and knowledge pertaining to treatment of anaemia is lacking in undergraduate students as compared to postgraduate students. However it was observed in both the study groups that knowledge about various aspects of anaemia is not optimal.
Conclusions: It is a need of hour to impart knowledge of common disorders including anemia to both undergraduate and postgraduate students for the larger benefit of society.

Keywords: Anemia, Questionnaire, Knowledge

INTRODUCTION

According to world health organization anemia is a condition in which numbers of red blood cells or their oxygen carrying capacity is insufficient to meet the physiologic needs which vary by age, sex, altitude, smoking and pregnancy status.

Iron deficiency anemia is the most common type of anemia in the world.[1] Several factors contribute in development of anaemia which include micronutrient deficiencies such as; Folate, Riboflavin, Vitamin B12, Vitamin A, along with some of the conditions like acute and chronic infections (i.e. malaria, tuberculosis, HIV), malignancies and inherited or acquired disorders of hemoglobin synthesis (i.e. hemoglobinopathies).[2,3]

Globally, it has been observed more commonly to affect preschool children 47.4% (293 millions), pregnant women 41.8% (56 million and totally the population of 24.8% (1620 million).[4] The world health assembly as one of the sixth global nutritional targets for 2025

implemented the comprehensive plan of reducing anaemia in the vulnerable group of individuals along with the second target to reduce 50% of anaemia among the women of reproductive age group.[5]

Several studies have shown that iron deficiency anemia has inadvertently affected the cognitive performance and motor development which has consequently resulted in decreased productivity.[2,6,7]

It has also been the cause for preterm labour, low birth weight babies and spinal defects in newborn.[8] Apart from which anaemia has been greatly contributing cardiac complications in the form of acute pericarditis, congestive cardiac failure, arrhythmias and pulmonary hypertension.[9,10]

Thus, it has been in turn a major contributing factor of morbidity and mortality as evident with the studies which have shown 3 million deaths occurring due to anaemia in 2013.[11,12] Therefore, the study was taken up to evaluate the knowledge about anaemia among the undergraduate and postgraduate medical students.

METHODS

A questionnaire based, prospective, cross sectional study was conducted among the undergraduate and postgraduate medical students (50 in each group) following the approval of institutional ethics committee. All those who were willing to participate were included in the study.

They were provided with a questionnaire that had 35 questions (objective and descriptive) pertaining to the subject of anaemia including the consequences and management.

The filled questionnaires were retrieved back after two days for analysis of results. The participants of either group were observed for their performance with respect to; 1) basic knowledge of anaemia 2) knowledge about complications of anaemia 3) knowledge of laboratory investigations pertaining to anaemia 4) knowledge about treatment of anaemia. The answers were evaluated in a structured format and further depending on the scores the participants were grouped as poor (<50%), average (50%-70%) and good performers (>70%).

RESULTS

Although anaemia is a very commonly observed clinical condition affecting individuals irrespective of age, gender, occupation, religion and co-morbid conditions etc., it was observed by us through this survey study that knowledge pertaining to various aspects of anaemia was not optimal in either groups (Figure 1 and 2).

It was surprising to observe that average scores with the knowledge pertaining to anaemia were more among the undergraduates (n=34), as compared to the postgraduate students (n=20). However, number of good performer were definitely more (n=8) among the postgraduate students which was not observed among the undergraduate students.

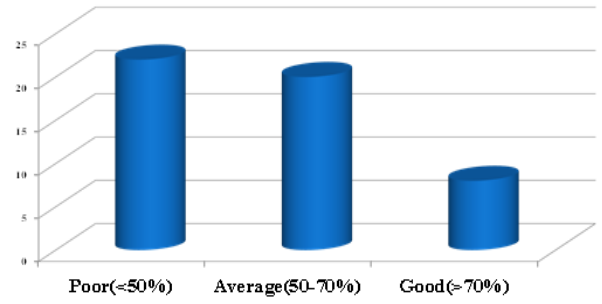

Figure 1: Knowledge of anaemia among PG students.

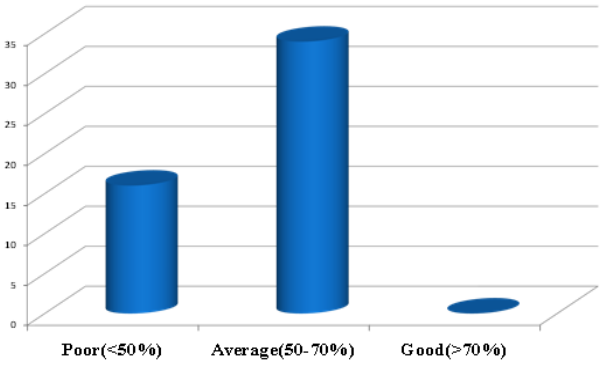

Figure 2: Knowledge of anaemia among UG students.

Further when the two groups were compared for all the four parameters as mentioned above in materials and methods no significant differences were observed (Figure 3).

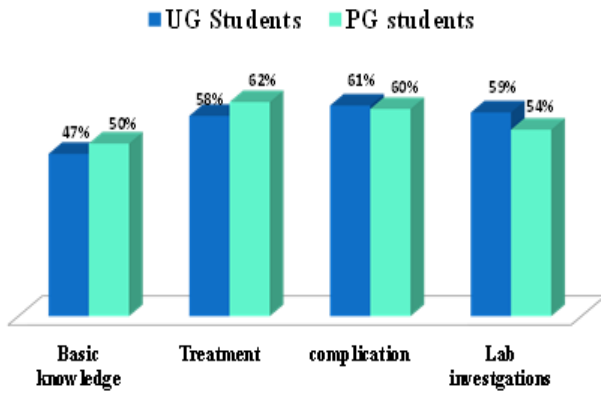

Figure 3: Comparison of the four parameters between the study groups.

However, when these results were subjected for statistical analysis using the chi-square test, we observed a significant difference (p <0.01) in context to the knowledge pertaining to the treatment of anaemia among the two groups (Table 1).

Table 1: Statistical comparison of the four parameters between the study groups.

Parameter	Group I - U.G. Students N=50	Group II - P.G. Students (N=50)	P value
Basic knowledge	20	22	>0.5
Treatment	20	36	<0.01**
Laboratory Inv.	36	28	>0.05
Complications	42	38	>0.1

**p< 0.01 (Highly significant)

DISCUSSION

Anaemia the most common clinical condition of multifactorial etiology affecting wide population of our country, has been greatly contributing to mortality and mortality by increasing the percentage of infectious conditions due to poor immune status that results from various nutritional deficiencies.[13] Apart from this, the genetic problems such as hemoglobinopathies add in contributing to morbidity and mortality. It has been identified as the disease burden since it adds to the economic concerns of health management.[14]

No such similar studies have been conducted as identified through our literature search. In our study, however, we could realize that knowledge pertaining to common clinical condition (anaemia) was not optimal in either group, while knowledge regarding treatment of anaemia was observed to be highly significant (p<0.01) among the post graduate as compared to the undergraduate students. Yet it is not sufficient to be aware only regarding treatment without a basic knowledge of the condition. With all the observations made through this cross sectional survey study, we feel that more such similar studies should be conducted and emphasis has to be given in training the youngsters of medical profession not to neglect the common clinical conditions like anaemia and focus more on the syndromes which occur rarely. However, this can be better obtained by repeatedly encouraging the learners through various faculty development programs (FDP), continued medical education (CME) and workshops. However, it gives good guidance for teaching the budding doctors to emphasize on such common condition which greatly contribute in both morbidity and mortality of individuals, so that it becomes easy and simple to manage the complicated cases.

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