

THE IMPACT OF INTERACTIVE EDUCATION SESSIONS ON PATIENTS OF RHEUMATIC HEART DISEASE ABOUT SECONDARY PREVENTION OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASES

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ABSTRACT

Objectives: To determine the impact of intervention on patient of Rheumatic fever / Rheumatic heart disease about Rheumatic fever / Rheumatic heart disease prevention.

Methodology: It was a Quasi experimental study conducted at OPD of civil hospital Karachi, 150 patients of either gender with RF/RHD attending OPD were included and total duration was six months.

Results: Out of 150 patients, impact of intervention was observed (above 10% pre and post score difference) in 120(80%) cases while impact of intervention was below 10% in 30(20%) cases. Median score was significantly high in both groups but above 10% difference in pre and post score was observed in 80% cases.

Conclusion: Significant impact of intervention on patients about Rheumatic fever / Rheumatic heart disease prevention was observed. Impact of intervention was higher in younger age than older age groups. Positive impact of intervention was slightly higher in females than males.

Key Words: Rheumatic fever, Rheumatic Heart Disease, Group A Streptococcus throat infection Echocardiography.

INTRODUCTION

Rheumatic fever is an inflammatory syndrome mediated by humoral and cellular autoimmune response that occurs as a delayed sequel of group A beta hemolytic streptococcal (GAS) infection of the throat¹. This disease has major impact on children and young adults². Although rheumatic heart disease was the leading cause of death 100 years ago in people aged 5-20 years in the United States, incidence of this disease has decreased in developed countries, and the mortality rate has dropped to just above 0% since the 1960s³. Non randomized data from Pakistan has shown a very high prevalence of RHD in both urban and rural population⁴. Recently community based randomized study from Rahim Yar Khan has established the high prevalence of R.F/RHD 5.7/1000 in our local population⁵. In addition, this study also revealed alarming facts about disease ignorance. Only less than 20% of the patients were aware of their disease and only 8% with know RHD were taking RF prophylaxis⁶. Prevention of the severe consequences of RF/RHD is achievable and cost-effective. Indeed, of all serious chronic conditions, rheumatic heart disease is one of the most readily preventable⁷. Its public health importance is not only a direct result of its high occurrence rates (mortality, prevalence and incidence), but also the population affected (children and young adults). Its economic consequences, both in health care related costs and in indirect costs to society (often resulting in premature death or disability), are very significant⁸.

METHODOLOGY

It was a Quasi experimental study conducted at OPD of civil hospital Karachi, 150 patients of either gender with RF/RHD attending OPD were included and total duration was six months. Non probability Purposive sample technique were used.

Adult patients of either gender with RF/RHD (diagnosed on the basis of ECHO), not less than duration of two years, attending OPD of Civil Hospital were included and persons already aware of medical profession like doctors, nurses, paramedical staff and medical representatives were excluded. Informed consent from patients was taken. The base line evaluation based on 20 questions, were evaluated prior to intervention. After an interactive and practical demonstration conducted by researcher the patients were reevaluated by the same question after 30 minutes. The series of interactive workshop were conducted by researcher in three sessions.

Session 1: Pre test evaluation by using a written questioner at the time of requirement.

Session 2: Interactive discussion and practical demonstration, stressing on different aspects of RF/RHD prevention.

Session 3: Post test evaluation regarding knowledge of about RF/RHD prevention by using written questioner. Each correct response of a question were given one mark and the impact of intervention were labeled as +ve if there is change in pre to post by 10%.

Data was entered and analyzed using the SPSS Version 10.0 for windows. Mean, standard deviation, 95% confidence interval, median and IQR were computed for age of the patients and attendance, duration of disease and intervention score. Frequency and percentage were computed for categorical variables like age groups, gender, duration of disease, education of attendance. Wilcoxon Signed paired ranks test was applied to compare pre and post intervention score. $p < 0.05$ was considered level of significant. Stratification of age of the attendance, gender, education, duration of disease of patients was done to observe an effect on outcome variables.

RESULTS

A total of 150 of patients with rheumatic heart disease / rheumatic fever were included in this study. Most of the patients were between 21 to 30 years of age t. average duration of disease was 8.94 ± 6.99 years (95%CI: 7.77 to 10.10) as shown in table 1. Out of 150 patients, 96(64%) were male and 54(36%) were female as shown in figure 2. Duration of disease of 68(45%) patients was 2 to 5 years, 44(29%) patients tolerated disease 6 to 10 years, 25(17%) were 11 to 20 years and duration of disease of 13(9%) patients were above 20 years as shown in figure 3. Education status of the attendants is presented in table 2. Most of the patient's educations were metric and intermediate while there were 28%, patient's who were below metric as well as some are illiterate and graduate. Median score of pre and post education about rheumatic heart disease / rheumatic fever were 1.0(IQR=7) and 18(IQR=3) respectively this imply that knowledge about RHD / RF of attendants was significantly improved after education ($p = 0.0005$; Wilcoxon Signed Ranks Test). Box and wicker plots are showing median difference in figure 4. Median score was significantly high after education as compare to pre education in all age groups ($p < 0.01$) as presented in table 3. Similarly in table 4 median score was higher after education than before education in male and female. Effect of intervention was similar for all status of education of attendance and duration of diseases of patients as presented in table 5 and 6 respectively.

DISCUSSION

This study showed that there is greater impact of education of patients regarding prevention of disease, How did rheumatic fever become rare in wealthy countries? Medical science can take some of the credit, thanks largely to the use of penicillin for primary prevention, but most of the reduction

TABLE 1: DESCRIPTIVE STATISTICS OF CHARACTERISTICS OF PATIENTS

Variables	Mean ± SD	95%CI	Median (IQR)	Max - Min
Age of the patients (Years)	28.91±13.41	26.74 to 31.07	25(16)	78 - 9
Age of the attendant (Years)	38.19±11.84	36.28 to 40.10	40(17)	70 - 15
Duration of disease	8.94±6.99	7.77 to 10.10	7(9)	35 - 2

FIGURE 1: GENDER DISTRIBUTION OF PATIENTS ATTENDANT n=150

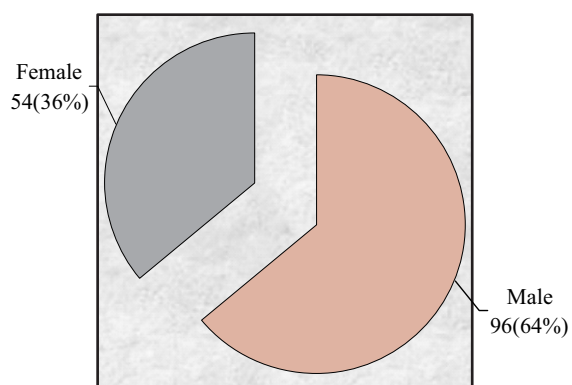


FIGURE 2: DURATION OF THE DISEASE OF THE PATIENTS n=150

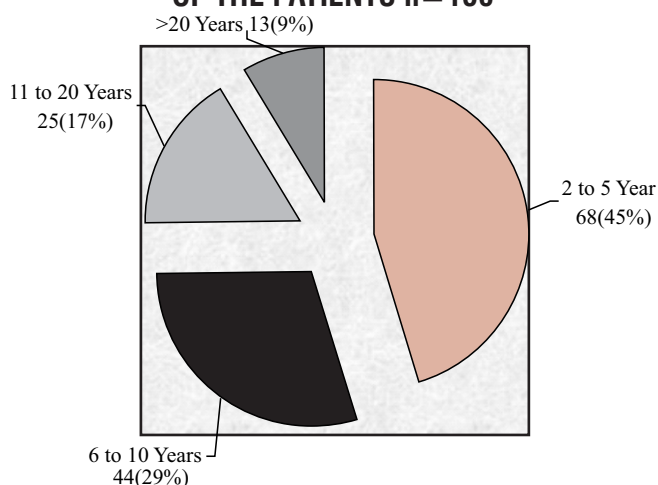


TABLE 2: EDUCATION STATUS OF THE PATIENT'S ATTENDANT n=150

Education Status	Frequency	Percentage
Illiterate	10	6.7%
Below Metric	42	28%
Metric	40	26.7%
Intermediate	48	32%
Graduate	10	6.7%

FIGURE 3: MEDIAN SCORE OF PRE AND POST INTERVENTION EFFECT OF PATIENT'S ATTENDANT

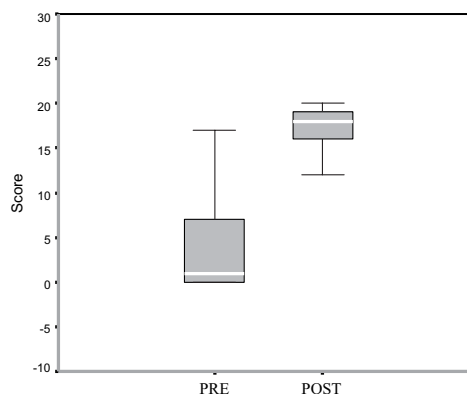


TABLE 3: COMPARISON OF PER AND POST MEDIAN SCORE WITH RESPECT TO AGE OF THE PATIENTS

Age of Attendant	n	Patients' Response Score		P-Value
		Pre Education Median (IQR)	Post Education Median (IQR)	
< 21 Years	8	1(1)	18(3.753)	0.012*
21 to 30 Years	41	2(8.5)	18(3)	0.005*
31 to 40 Years	43	3(7)	17(3)	0.005*
41 to 50 Years	36	1.5(5.5)	17.5(4)	0.005*
>50 Years	22	1(9)	17.5(3)	0.005*

Wilcoxon Signed Ranks Test was applied. (* significant)

TABLE 4: COMPARISON OF PER AND POST MEDIAN SCORE WITH RESPECT TO EDUCATION OF PATIENTS

Education of Attendant	n	Patients' Response Score		P-Value
		Pre Median (IQR)	Post Median (IQR)	
Illiterate	10	1(1)	15.5(2.75)	0.005
Below Metric	42	2(7.25)	18(2)	0.005
Metric	40	4(7.75)	19(4.75)	0.005
Intermediate	48	1(4)	17(2)	0.005
Graduate	10	8.5(9.75)	20(1.75)	0.005

Wilcoxon Signed Ranks Test was applied. (* significant)

TABLE 5: COMPARISON OF PER AND POST MEDIAN SCORE WITH RESPECT TO DURATION OF PATIENTS DISEASE

Duration of Disease	n	Patients' Response Score		P-Value
		Pre Education Median (IQR)	Post Education Median (IQR)	
2 to 5 Years	68	2(6.75)	18(3)	0.005*
6 to 10 Years	44	1(7.75)	17.5(4)	0.005*
11 to 20 Years	25	1(6)	17(3.5)	0.005*
>20 Years	13	3(4.5)	19(3)	0.001*

Wilcoxon Signed Ranks Test was applied. (* significant)

is attributable to improved living conditions, which have resulted in less overcrowding and better hygiene, with consequent reductions in transmission of group A streptococci. In other words, rheumatic fever is a disease of poverty⁹. That it is in many ways the epitome of diseases of poverty and social injustice is exemplified by the situations in Australia and New Zealand. In these countries, which boast

living standards that are among the best in the world, there are indigenous populations, many of whose members live in poverty, with documented rates of rheumatic fever and rheumatic heart disease that are among the highest in the world¹⁰. Among aboriginal people of northern Australia, for example, acute rheumatic fever develops in 0.2 to 0.5% of school-age children each year, and more than 2% of people

of all ages have rheumatic heart disease¹¹. Yet most developing countries still do not have effective secondary-prophylaxis programs. Other key issues revolve around the need to develop new approaches to primary prevention¹². So patient education is necessary about the prevention of disease. Prevention of the severe consequences of RF/RHD is achievable and cost-effective. Indeed, of all serious chronic conditions, rheumatic heart disease is one of the most readily preventable, as in our study Median score of pre and post education about rheumatic heart disease / rheumatic fever were 1.0(IQR=7) and 18(IQR=3) respectively this imply that knowledge about RHD / RF of attendants was significantly improved after education ($p=0.0005$). In addition to the shortage of resources in developing countries, there are a group of internal barriers that interfere in taking action for the prevention and control of RF/RHD, mainly a limited recognition of the magnitude of the problem and of its possible cost-effective solution, education of health professionals is basically curative and primary care professionals are not appropriately trained to deal with the RF/RHD and streptococcal infection problem.

CONCLUSION

Significant impact of intervention on patients about Rheumatic fever / Rheumatic heart disease prevention was observed. Impact of intervention was high in younger age than older age groups. Positive impact of intervention was slightly high in female than male.

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