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PUBLIC HEALTH RESEARCH

Socio Demographic Profiles Of Rheumatic Heart Disease (RHD) Patients In Sabah

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ABSTRACT

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Introduction Rheumatic Heart Disease (RHD) has been thought as a disease of poor socioeconomic status. It is more prevalent in underdeveloped and developing countries than in developed countries. It is also common among the population with multiple social issues such as overcrowded dwellings, under-nutrition, poor sanitation and suboptimal medical care. This study was done to review the socio demographic profiles of RHD patients in Hospital Queen Elizabeth (HQE) ll, Kota Kinabalu, Sabah.

Methods A secondary data review of all patients registered under the RHD registry in HQE ll for one- year starting from July 2013 to June 2014.

Results 204 RHD patients were included. Nearly three quarter (74.0%) were female. The mean age was 40.43 (14.75) years old. 61.1% has completed secondary education. 42.7% were housewives. The mean monthly income was RM 1363.83 (1297.05) which was categorized under the vulnerable income group. When they were categorized under the poverty level and the vulnerable income group, 42.6% and 76.5% of them fell under those categories respectively. The nearest health facilities to their houses were district hospitals (33.3%) with the mean distance of 9.17 km and health clinics (30.8%) with the mean distance of 4.27 km. Only 11.5% of them lived near the specialist hospitals with the mean distance of 21.32 km.

Conclusions Results from this review suggested that majority of RHD patients were in the low socioeconomic group with less access to health care facilities with specialist care. They are the most vulnerable groups and need to be prioritized in the specialized care program.

Keywords Socio demography - Rheumatic Heart Disease.

INTRODUCTION

Rheumatic heart disease (RHD) is a consequence of the damage to heart valves as a result of delayed autoimmune sequel to group A streptococcal infections. It can progress into a chronic condition leading to congestive heart failure, stroke, endocarditis and even death.[1]

While the incidence and prevalence of Acute Rheumatic Fever (ARF) and Rheumatic Heart Disease (RHD) have been decreasing in developed nations since the early 1900s, they continue to be the major causes of morbidity and mortality among young people in developing nations. It is estimated that there are over 15 million cases of RHD worldwide, with 282,000 new cases and 233,000 deaths annually.[2]

RHD has been thought as a disease of poor socioeconomic status. Few studies reported that RHD is more prevalent among the population with multiple social issues such as low socio-economic status, overcrowded dwellings, under-nutrition, poor sanitation and suboptimal medical care.[3-4]

The Cardiology Unit together with the Clinical Research Centre, HQE ll, Kota Kinabalu, Sabah have made an initiative to develop a small - scale hospital based registry to assess the burden of rheumatic heart disease in Sabah which was initiated in Dec 2010. This analysis was done to review the socio demographic profiles of RHD patients in HQE ll.

METHODS

This was a retrospective secondary data review of all RHD patients who attended the outpatient Cardiology Clinic and registered under RHD registry in HQE ll from July 2013 to June 2014 (a one -year data). HQE ll, Kota Kinabalu, Sabah is a 360 bedded tertiary hospital which received referral from all 24 hospitals all over the state including the nearby Federal Territory of Labuan and Lawas district in Sarawak.

All RHD outpatients who came to the cardiology clinic on their appointment dates were attended either by a cardiologist or a cardiology medical officer. The management solely based on the patients' clinical condition.

The patient's information from the case note would be recorded by the attending medical officer using a RHD registry data collection form designed by a team of cardiologists and medical officers. In addition, a set of interviewer guided structured questionnaire was used to obtain information on the socio demographic profiles of RHD patients. This was to ensure that the detail and valid information was obtained directly from the patients. The case notes for all RHD patients who had been registered were stamped as soon as registered to avoid double registration.

The variables included were the demographic profile of the patients namely age, sex, education, occupation and socio economic profiles. The poverty level was defined as having a family income of less than RM960 per month while the vulnerable level was defined as having a family income of less than RM1500 per month.[5] In addition, the distance from their houses to the health facilities was asked to assess their accessibility to seek medical attention.

All the data from the RHD registry forms were entered in Microsoft Office Excel 2007 sheet by the CRC Research Officer and further analysis was done using the IBM SPSS Statistical Software ver. 20.0 (IBM Co., Armonk, NY) to provide descriptive summaries, frequency tabulation and graphs.

RESULTS

A total of 204 RHD patients were included in this analysis. The socio demographic profiles were shown in Table 1. Nearly three quarter (74.0%) were female. The mean age was 40.43 (14.75) years old. 61.1% had completed secondary education while 42.7% of them were housewives.

Table 1 Socio demographic profiles of RHD patients

Variable	Mean (SD)	Frequency (%)
Age (years)	40.43 (14.75)	
Gender		
Male		53 (26.0)
Female		151 (74.0)
Education		
No schooling		20 (9.9)
Primary school		37 (18.2)
Secondary school		124 (61.1)
Tertiary education		22 (10.8)
Occupation		
Student		16 (9.0)
Housewife		76 (42.7)
Not working		2 (1.1)
Self employed		24 (13.5)

Government		32 (18.0)
Private company		19 (10.7)
Pensioner		9 (5.1)
No of family members		
≤ 3		51 (25.0)
4 – 10		145 (71.1)
> 10		8 (3.9)
Monthly family income (RM)	1363.83 (1297.05)	

71.1% of RHD patients have 4 to 10 family members who stayed together. The mean monthly income was RM 1363.83 (1297.05) which was categorized under the vulnerable income group. When they were categorized under the below poverty level and below vulnerable income group, 42.6% and 76.5% of them fell under those categories respectively (Figure 1).

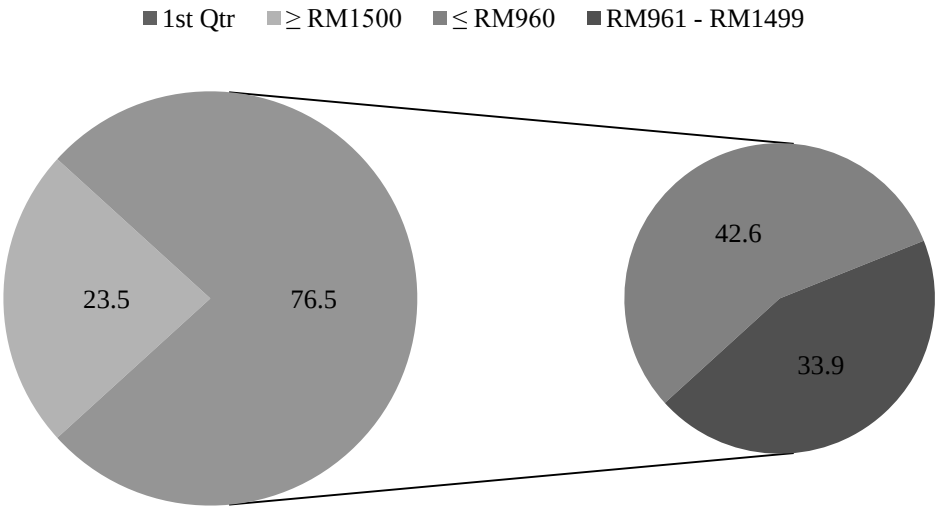

Figure 1 Percentage of RHD patients by income groups

The nearest health facilities to their houses were the district hospitals (33.3%) with the mean distance of 9.17 km and the health clinics (30.8%) with mean distance of 4.27 km. Only 11.5% of them lived near the specialist hospital with the mean distance of 21.32 km. (Figure 2).

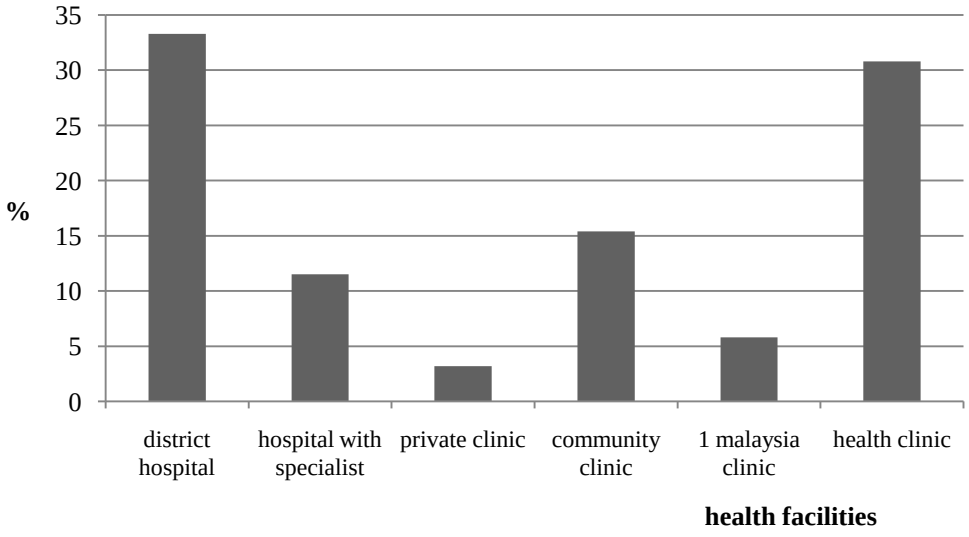

Figure 2 The nearest health facility to RHD patient's house

DISCUSSION

Our findings show that RHD is still prevalent in Sabah. We were able to register 204 patients in one year. However we did not calculate the prevalence rate due to limited available data. Previous data from Malaysia which was based on paediatric age group reported a prevalence rate of RHD among primary school children of 0.11 per 1000 population.[6] A review of a 10 - year paediatric admission data in University Hospital Kuala 'Lumpur (1981-1990) showed that 21.2/100,000 paediatric admissions per year were due to ARF[7] and they were the high risk group of patients that would progress to RHD.

There were more female patients registered in the RHD registry. Most of them were housewives. Studies have reported inconsistent association between sex and RHD. The conventional epidemiological data showed that there was an equal prevalence of RHD among males and females.[8] However, studies done in Pakistan[9] and India[10] revealed similar findings like ours. No specific explanation was identified from these findings. We could only assume that majority of the females who were housewives spent most of their times at home with improper living conditions. This might increase their risks of infection with group A streptococcal and subsequently develop RHD if not properly treated.

Furthermore, most of our patients lived in crowded living conditions with 4 to10 family members staying together. They also came from the low socioeconomic group. Various studies also reported that RHD were more prevalent in low socioeconomic group[9, 11] which were in line with our findings in Sabah. Overcrowding, poverty and poor housing conditions have been linked to the rapid spread of group A streptococcal infection[12] with higher rates of recurrent attacks which can lead to RHD.

Most patients captured in this registry lived in rural areas where the nearest health facilities were a district hospital or a health clinic. They were also less accessible to specialist care which is normally provided in the tertiary hospital located in the town area. The geography factor of most areas in Sabah which are hilly, mountainous and forestial has in one way hampered road connectivity around the state. As a result, the poor connectivity has affected the accessibility of the people to get health care because they could not travel easily from their houses to the health clinics or hospitals to seek proper and early treatments.

ARF which was not treated accordingly with proper antibiotic for treatment of group A streptococcal pharyngeal infection will progress into RHD. Early detection is very important to prevent complication. It is also important for them to be prescribed secondary prophylaxis. Secondary prophylaxis with regular Benzathine Penicillin G (BPG) is one of the RHD control strategy shown to be simple, cheap and cost effective in preventing the recurrence of ARF, its development into RHD, reducing the severity of RHD and reducing the risk of death from severe RHD.[13] Poor socioeconomic status combined with less accessibility to health care have worsen their treatment seeking behavior since they had to deal with longer commute times and higher cost of transportation. This would result in delayed treatment and problems to comply with regular BPG injections as secondary prophylaxis.

Limitation: Although it is known that hospital morbidity data often give biased information about the magnitude of diseases, they are the only available data that we could easily capture for the time being. We are also expected to miss the milder form of RHD since some of them have not come to seek treatment while having mild disease due to socioeconomic constraint.

CONCLUSION

Results from this review suggested that majority of RHD patients were in the low socioeconomic group with less access to health care facilities with specialist care. They are the most vulnerable groups and need to be prioritized in the specialized care program.

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