



*Risk factors of rheumatic
heart disease in Bangladesh:
A case control study*

Dr Shahjada Selim



Investigators



Dr Baizid Khorshid Riaz

Dr Shahjada Selim



Dr Kamrun Nahar Chowdhury

Dr Md Nazmul Karim and

Prof Dr Md Ridwanur Rahman





Background

In the least developed countries rheumatic fever still remain as the leading cause of heart disease among children and young adults. It was estimated recently that worldwide 15.6 million people have rheumatic heart disease (RHD) and that there are 470 000 new cases of RF and 233 000 deaths attributable to RF or RHD each year.





Objectives



General objective:



- ★ To explore the risk factors among the patients of rheumatic heart disease presenting to a specialized cardiac hospital of Bangladesh.





Specific objectives:



★ To assess the behavioral factors related to rheumatic heart disease



★ To assess previous morbidity related factors of rheumatic heart disease



★ To assess socio-demographic factors related to rheumatic heart disease.



Methodology



Study Design

Hospital Based Unmatched case control Study.



Study Period

January 2010 – June 2010





Eligibility criteria for case

Inclusion criteria

1. Patients with Rheumatic heart disease of any type reporting to the hospital
2. Diagnosis Confirmed by Echocardiography





Eligibility criteria for case



Exclusion criteria



1. Patient's not willing to participate
2. Patients with acute emergency condition
3. Patient with psychological disorder





Eligibility criteria for control



Inclusion criteria



1. Patients admitted in the ShSMC hospital without rheumatic heart disease



2. Patients with RF without RHD



Eligibility criteria for control



Exclusion criteria



1. Patient's not willing to participate
2. Patients with acute emergency condition
2. Patient with psychological disorder





Setting

A total of 103 RHD cases and 309 controls were recruited. Of the controls 103 were the patients of RF and the rest of 206 were the patients reported for other diseases. Cases of the study were recruited from the rheumatic heart disease patients reported in the OPD of the National Centre for Control of Rheumatic Fever and Heart Disease (NCCRFHD), Dhaka.



Setting

The controls were taken from the patients of ShSMCH hospital admitted for non cardiac ailment including RF. Of the controls, 103 RF patients were recruited from NCCRFHD, Dhaka.





Main Risk Variables



Social and economic circumstances
Self reported symptoms and diseases
dietary habits



anthropometric measurement and
blood pressure measurement





Results



Two third of RF pts were below 20 year,
38% in RHD pts and among controls
16.4 % were in the age range.



Proportion of subjects with ≥ 5 members
in the family is more in both RF and RHD
pts then the referent population.





Results



Proportion of subjects with ≥ 2 siblings and overcrowding (>3 person sharing a living room) (OR 1.7) have been reported among RHD patients.



Results

- ★ Mothers with low or no education and working mothers were more in RF and RHD patient in comparison to referent group.





Results

Table 1: Socio-demographic factor of patient

	NRF	RF	RHD
Age			
< 19 years	34(16.4)	67(65.0)	39(37.9)
≥20 years	85(41.1)	01(1.0)	21(20.4)
χ^2 (P Value)	Referent	74.0 (P 0.001)*	17.5(P 0.001)*
Sex			
Male	113(54.6)	33(32.0)	40(38.8)
Female	94(45.4)	70(68.0)	63(61.2)
OR (95% CI)	Referent	2.5 (1.5, 4.2)*	1.9 (1.2, 3.1)*
Religion			
Muslim	197(95.2)	101(98.1)	102(99.0)
Hindu	09(04.3)	02(01.9)	01(01.0)
OR (95% CI)	Referent	0.43 (0.9, 2.0)	0.22 (0.0, 1.7)
Family size			
< 5	45(21.7)	40(38.8)	35(34.0)
5 - 7	118(57.0)	52(50.5)	56(54.4)
≥ 8	44(21.3)	11(10.7)	12(11.7)
χ^2 (P Value)	Referent	12.2 (P 0.002)*	7.6 (P 0.02)*
Number of Sibling			
< 2	103(49.8)	48(46.6)	33(32.0)
3 - 5	64(30.9)	39(37.9)	34(33.0)
≥ 6	40(19.3)	16(15.5)	36(35.0)
χ^2 (P Value)	Referent	1.7 (P 0.43)	11.9 (P 0.003)*
Person per room			
< 3 persons	99(47.8)	57(55.3)	36(35.0)
≥ 3 persons	108(52.2)	46(44.7)	67(65.0)
OR (95% CI)	Referent	0.74(0.5, 1.2)	1.71 (1.1, 2.7)*
Monthly family income			
≤10000 taka/month	145(70.0)	62(60.2)	66(64.1)
> 10000 taka/month	62(30.0)	41(39.8)	37(35.9)
χ^2 (P Value)	Referent	3.1 (P 0.083)	1.1 (P 0.23)
Patient's education			
Primary	57(27.5)	27(26.2)	31(30.1)
Secondary & above	150(72.5)	76(73.8)	72(69.9)
χ^2 (P Value)	Referent	9.91 (P 0.07)	5.8 (P 0.06)



Results

- ★ Significant increased risk of RHD was evident in women (OR 2.2, 1.2-4.2)
- ★ Urban resident (2.0, 1.2-7.0)
- ★ living in brick built house (OR 2.8, 1.3-5.3)
having sibling > 2 (OR 4.4, 2.2-8.7)
- ★ child of working mother (OR 6.2, 2.1-18.4)
and
- ★ overcrowding (OR, 1.0-3.4).





Results

Table 2: Parents factor

	NRF	RF	RHD
Mother education			
Secondary & above	64(30.9)	49 (47.6)	21(20.4)
Primary or less	143(69.1)	52(52.4)	82(79.6)
OR (95%CI)	Referent	2.0(1.3, 3.3)*	0.57 (0.3, 1.01)
Mother occupation			
House wife	197(95.2)	91(88.3)	87(84.5)
Working mother	10(4.8)	12(11.7)	16(15.5)
OR (95% CI)	Referent	2.6(1.1, 6.2)*	3.6 (1.6, 8.3)*
Father education			
Secondary & above	113(54.6)	60(58.3)	46(44.7)
Primary or less	94(45.4)	43(41.7)	57(55.3)
OR (95%CI)	Referent	1.2 (0.7, 1.9)	0.7 (0.4, 1.1)
Father' occupation			
Labor intensive job	108(52.2)	29(28.2)	46(44.7)
Moderate activity Job	43(20.8)	31(30.1)	27(26.2)
Sedentary activity job	56(27.1)	43(41.7)	30(29.1)
χ^2 (P Value)	Referent	1.6 (P 0.06)	1.8 (P 0.41)



Results

★ Age over 19 years (OR 0.1, 0.1-0.3)
and large family size (OR 0.5, 0.2 - 0.9)
appeared as protective factor for RHD.





Conclusion

Risk of rheumatic heart disease (RHD) increases with increasing age and RHD is more among the children of working mothers.





Thank You All