

Index of Opportunity for Natural Selection Among The Sayed Muslim of Assam

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ABSTRACT Selection potential based on differential fertility and mortality computed for Sayed Muslims of Assam is reported. The relative contribution of fertility component to the index of total selection is higher than the corresponding mortality component. The present data have been compared with available previous study on various Muslim populations of India. The index in Sayeds is of lower intensity than most of the Indian Muslim populations. In the latter, mortality component also exceeds fertility component.

INTRODUCTION

Natural selection is one of the major evolutionary forces that acts on population causing gradual modification by bringing about changes in the genetic makeup. Crow (1958) devised an index which was later on improvised by Johnston and Kensinger (1971) to measure the maximum potential rate of change through selection, assuming that variations in mortality and fertility are genetically determined and fitness is completely heritable. Livingstone and Spuhler (1965) suggests that, if the computed value of the index comes to zero, there would be no change in the genetic makeup of a population through selection.

A large number of studies all over the world have already been carried out to demonstrate the role of natural selection imposing characteristic fertility and mortality in various populations at different levels of technological advancements. Unfortunately, many populations of North East India has not yet been studied as far as natural selection potential is concerned. In view of these, in the present study, an attempt has been made to deal at a micro-level with the

intensity of natural selection in Sayed Muslim of upper Assam.

The Assamese Muslim are identifiable in three distinct groups, viz., the Sayed, the Sheikh or Garia and the Maria. The Sayed of Assam believe that they are the direct descendants of Holy Prophet and thus occupy the highest position in the Assamese Muslim society. They claim to be the descendants of Arab immigrants, who came to Assam as preacher and engaged in missionary work to spread the Islamic faith. Among Sayed consanguineous marriages are quite frequent.

MATERIAL AND METHOD

In the present study, the index of total selection computed following the method of Crow (1958) and Johnston and Kensinger (1971). For computation of index ('I'), the fertility and mortality data from unrelated married Sayed women aged 40 years and above, whose husbands are alive and have atleast one child are only considered. Data has been collected from Kakojaan and Kenduguri area of Jorhat district, Assam.

In few cases age of the informants were estimated with reference to some important events. Information given by the mothers were cross-checked and verified from their husbands and other elderly women of the family to minimise chances of recall lapses.

RESULTS AND DISCUSSION

Data used in the present study were collected from 62 unrelated Sayed mothers who are aged 40 years and above. They had altogether 292 pregnancies, out of which 265 resulted into

Table 1 : Indices of Selection Intensity in some selected Muslim population groups of India

Population	Crow's (1958) method			Johnston & Kensing's (1971) method				Reference
	I_m	I_f	I	I_{mz}	I_{mf}	I_f	I	
Assam								
Sayed	0.1522	0.2304	0.4177	0.1317	0.1522	0.2304	0.6043	Present Study
Garia	0.0267	0.4401	0.4785	0.0373	0.0267	0.4401	0.5337	Buzarbarua & Rizvi, 1996
Muslims (Cachar)	0.4300	0.3100	0.8700	-	-	-	-	Chakravarty, 1976
West Bengal								
Shia Muslim	0.3589	0.1841	0.6091	0.1162	0.3589	0.1841	0.7960	Das & Ghosh, 1988
Sunni Muslim	0.3624	0.1465	0.5620	0.0683	0.3624	0.1465	0.6686	Das & Ghosh, 1988
Muslim	0.2900	0.1890	0.5340	-	-	-	-	Roy & Bharati, 1982
Muslim (Inbred)	0.4340	0.3380	0.9190	-	-	-	1.0130	Barua, 1976
Muslim (Outbred)	0.3070	0.3290	0.7370	-	-	-	0.8180	Barua, 1976
Bihar								
Muslims (Inbred)	0.5365	0.2746	0.9584	-	-	-	-	Ansari & Sinha 1983
Muslims (Outbred)	0.5583	0.1715	0.8255	-	-	-	-	Ansari & Sinha 1983
Rural Ansari	0.5926	0.2060	0.5959	-	-	-	-	Afzal, 1984
Muslim (Inbred)	-	-	-	-	-	-	-	-
Rural Ansari	0.3955	0.1391	0.3974	-	-	-	-	Afzal, 1984
Muslim (Outbred)	-	-	-	-	-	-	-	-
Suburban Ansari (Inbred)	0.5542	0.1720	0.5569	-	-	-	-	Afzal, 1984
Suburban Ansari (Outbred)	0.3663	0.1418	0.3682	-	-	-	-	Afzal, 1984

live-births and the number of prenatal loss is 34. In the present sample, incidence of premature offspring mortality (before 15 years of age) is 35. The average number of live birth (x) per women is 4.27 with a variance (V_x) 4.20.

The index of total selection intensity acting with a very moderate intensity in the Sayed. The index according to Johnston and Kensing's method shows considerable higher value than that of the value calculated according to Crow's formula. It is also noteworthy that among them, opportunity for selection operates mainly through differential fertility and contribution of post-natal mortality is much higher than pre-natal mortality.

A comparison of the present data with that of the other Muslim populations reported so far from eastern India is also attempted. No test of significance of the difference between the population with respect to 'I' was possible, however.

The present Sayed sample are very different from the results that obtained on the Muslim samples reported from various parts of India

(Chakravarty, 1976; Barua, 1976; Roy and Bharati, 1982; Ansari and Sinha, 1983; Afzal, 1984; Das and Ghosh, 1988). In all these samples, greater contribution of mortality component than the fertility component is observed which is in contrast to the Muslim samples reported from Brahmaputra valley, Assam. The Bengali speaking Muslims of Cachar (Assam) reported by Chakravarty (1976) shows affinity with the rest of India in this regard. It is noteworthy that the index of selection due to mortality is much higher in the inbred Muslim samples (although theoretical consideration for such calculation is hard to understand), which is more than double compared to that of the present Sayed sample. It may be recalled here that consanguinity is also practised by the Sayeds. The index of total opportunity for selection is relatively higher among the inbreds, while contrast observation has been made, applicable to the Sayed under investigation. Comparatively low values of mortality without an appreciable decline in average live-births have resulted in low values of selection potential in

Sayeds. This also indicates a comparatively weak pressure of selection among them.

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