

Opportunity for Natural Selection Among the War Khasi of Meghalaya, India

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ABSTRACT The War Khasi, one of the sub-groups of the Khasi matrilineal tribe, are found in the southern slope of the Khasi and Jaintia hills of Meghalaya. The index of total opportunity for natural selection has been reported for the Christians and non-Christian sections of this tribal population. It is found that the total selection intensity, according to Crow's formula, is 0.360 in the Christians and 0.446 in the non-Christians, and according to the modified method of Johnston and Kensinger, it is 0.486 among the Christians and 0.568 among the non-Christians.

INTRODUCTION

The Khasi are the matrilineal tribe inhabiting the state of Meghalaya (25°47' - 26°10' N and 89°45' - 92°47' E). The tribe consists of five major sub-groups, namely, the War, Khyntiam (upland Khasi), Pnar (Jaintia or Synteng), Bhoi and Lyngngam. The War Khasi are mostly confined to the southern slopes of the Khasi and Jaintia hills of Meghalaya bordering Bangladesh. The people who live in the upland region of Khasi hills are known as the Khyntiam and those living in Jaintia hills are called the Pnar. The Bhoi and Lyngngam are found in the northern and south-western parts of the Khasi hills, respectively. All these sub-groups of the Khasi have been following the matrilineal system of society. They speak the Monkhmer language which belongs to the Austro-Asiatic group. They also share a common pattern of social structure, 'but each group tends to be endogamous and there are shades of differences in respect of dialect, political organisation, economy and in some of the customs and manners between groups' (Das Gupta, 1984).

In the present report, an attempt has been made to show the intensity of natural selection

in the War Khasi population. Spuhler (1963) and Bharati (1981) have suggested the effect of socio-economic factors on the index of opportunity for selection. In this connection, it may be noted that the arrival of Christianity in this area has brought about a tremendous change in the Khasi society especially in the domain of belief system. Das Gupta (1984) has observed that the Christians in the War Khasi society are also "...more advanced and more educated community..." Accordingly, we shall deal with the Christian and Non-Christian War Khasi and compare our findings with those already reported for the other Indian populations with special reference to the populations in the north-eastern region of the country.

MATERIALS AND METHODS

Since the War Khasi are distributed in more than 250 villages, we have made a 2% random sampling of the War Khasi villages (Khongsdier, 1991). As a result, five villages were eventually selected for the present study. The entire demographic data were collected through household schedules and extended genealogies. A complete enumeration was

carried out in all the five selected villages. As far as the present study is concerned, no information has been obtained regarding adoption of family planning method.

For estimation of the index of total selection intensity, we have followed the method suggested by Crow (1958) as well as the modified version proposed by Johnston and Kensinger (1971). We have also considered

Christians, respectively. It is found that the differences between the two religious groups in respect of live-births, premature deaths and embryonic deaths are not statistically significant. The mean number of live-births per mother is 6.2500 ± 0.31 in the Christians and 6.1714 ± 0.29 in the non-Christians ($z = 0.1870$, $P > 0.05$) with the corresponding variances of 7.2136 and 8.5805, respectively. The proportion of

Table 1: Parameters used in calculating selection intensity

Parameters	Christians	Non-Christians
Number of mothers of 40+	76	105
Number of reported pregnancies	516	697
Number of live-births	475	648
Proportion of premature deaths, i.e. deaths before 15 years of age (P_a)	0.1284	0.1528
Proportion of survivors to birth (P_b)	0.9147	0.9225
Proportion of embryonic deaths (P_{ed})	0.0853	0.0775
Mean number of live-births per mother of 40 + ($\bar{X}$)	6.2500 ± 0.31	6.1714 ± 0.29
Variance in number of live-births (V_L)	7.2138	8.5805

the mothers of 40+, while calculating this index. With regard to the present data, it has been observed that the fertility declines drastically when the mothers reached the age of 40. Similar observation was also made by the earlier workers (Mukherjee, 1972; Talukdar, 1977; Das and Ghosh, 1988). It may also be mentioned that many authors (Salzano, 1963; Basu, 1976; Neel and Chagnon, 1968, etc.) have taken into consideration the mothers of 40 years and above for the estimation of total selection intensity.

RESULTS AND DISCUSSION

Table 1 shows that there are 76 and 105 mothers of 40+ in the Christians and non-

premature deaths, i.e. mortality before 15 years of age, is 0.1284 among the Christians and 0.1528 among the non-Christians ($d = 1.1619$, $P > 0.05$), whereas the proportions of embryonic death (abortion and still-birth) are 0.0853 and 0.0775, respectively ($d = 0.4841$, $P > 0.05$).

Table 2 shows that the index of total selection intensity (I), calculated according to Crow's formula, is lower in the Christians (0.3592) than that in the non-Christian (0.4463). It also indicates that the differential fertility contributes more towards the total opportunity for selection in both the religious groups of the War Khasi. Similarly, the I value computed according to the modified version is lower among the Christians (0.4860) than that among the non-Christian (0.5679). It is,

Table 2: Indices of selection potential in the Christian and non-Christian War Khasi

Segment of population	According to Crow (1958)			According to Johnston and Kensinger (1971)			
	I_m	I_f	I	I_{me}	I_{mc}	I_f	I
Christians	0.1473	0.1847	0.3592	0.0933	0.1473	0.1847	0.4860
Non-Christians	0.1804	0.2253	0.4463	0.0840	0.1804	0.2253	0.5679

however, seen that, according to the modified method of Johnston and Kensinger, the mortality contributes more towards the total selection intensity. It is also found that the I values according to the modified version are higher than those calculated according to Crow's original formula in both the religious groups of the population. This may be due to the fact that the embryonic deaths were taken into consideration in the modified method suggested by Johnston and Kensinger. So, it shows that the fertility contributes more to the total selection intensity in case of Crow's formula, but it is just reverse in case of the modified method in which mortality shows its higher contribution. It holds good for both Christian and non-Christian War Khasi.

Reddy and Chopra (1990) have compiled all the results of the index of total selection intensity computed according to Crow's formula on 96 Indian populations. It has been seen that the I value varies from 0.258 in the subgroup of Yanadi tribe to 2.250 in the Kota. The component due mortality (I_m) ranges from 0.053 among the Yanadi tribe to 1.062 among the Mala, and the index of selection due to fertility (I_f) varies between 0.018 among the Sao Tili and 0.815 among the Kota. The present findings indicate that the I value is more towards the lower half of the range, i.e. in both the Christian and non-Christian War Khasi.

The indices of selection intensity, i.e. the I , I_f and I_m in the Jaintia or Pnar calculated according to Crow's method are 0.638, 0.125 and 0.456, respectively (Deka, 1989), and 0.401, 0.133 and 0.236, respectively (Khongsdier, 1990). Barua (1983) has reported the same indices among the Hajong of Meghalaya, which are 0.631, 0.131 and 0.443, respectively. Among the Bengali speaking Muslim of Cachar, these indices are 0.86, 0.31 and 0.43, respectively (Chakraborty, 1976). It reveals that the I values in the Christian and non-Christian War Khasi are much lower than those found among the Jaintia and the Hajong of Meghalaya and the Muslim of Cachar in

Assam. It is, however, similar to that among the Pnar as reported by Khongsdier (1990).

In connection with the modified method, it is found that the I value in the non-Christians is also similar to that found in the Pnar (Khongsdier, 1990) and the Hajong (Barua, 1983). But it is much lower than that reported by Deka (1989) among the Jaintia. It is also found that the indices of selection due to embryonic deaths (I_{me}) among the Christian and non-Christian War Khasi are much higher than that among the Hajong, but lower than that among the Jaintia. The indices of selection due to child mortality or premature death (I_{mc}), on the other hand, are lower among the Christian and non-Christian War Khasi than those among the Hajong and the Jaintia.

In fine, it indicates that selection pressure in both the religious groups of the War Khasi is quite moderate. As far as religion is concerned, it is found that the I values in the Christians, who are more advanced and educated, are lower than those in the non-Christians, though the differences between them in respect of live-births, premature deaths and embryonic deaths are not statistically significant.

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