CHAPTER - VI

DISCUSSION
In the preceding chapters, we have presented our findings on the biological and social factors that determine the fertility and child mortality among the Khongsai Kukis of Saikul sub-division and Imphal town in Manipur.

This thesis is an attempt to find out the demographic structure, status of fertility and child mortality, and bio-social determinants responsible for fertility and child mortality among the Khongsai Kuki population of Saikul Sub-division and Imphal town in Manipur. In this chapter, we shall briefly discuss our findings in the context of other neighbouring populations, especially of the Northeast India in order to understand the status of fertility and child mortality of the present population. We shall also compare the selected indicators between the two study areas in a view to understand the rural-urban differences in the present population. Therefore, we had selected Saikul sub-division in Senapati district and Imphal town of Manipur to represent the rural and urban areas respectively.

**Demographic characteristics**

The demographic structure of the Khongsai Kukis in Saikul sub-division and Imphal town of Manipur has been discussed in Chapter-IV. According to Sundbarg's classification of population (Datta, 1972), a population is referred to as *progressive* when the proportions of persons relative to the total population are 40.00%, 50.00% and 10.00% in the age groups 0-14 years, 15-49 years and 50+ years respectively. Following this, both the populations of Saikul sub-division and Imphal town are of *progressive type*. The overall sex ratio, i.e., the number of males per 100 females, of the population is
higher in Imphal town (112.77) as compared to their Saikul counterparts (103.17). However, the same in Saikul sub-division is found to be very near to the ideal sex ratio of 1:1, but the differences in the overall sex ratio are not statistically significant in both the study areas (Saikul: \( \chi^2 = 0.31 \), d.f. = 1, \( p > 0.05 \); Imphal: \( \chi^2 = 1.60 \), d.f. = 1, \( p > 0.05 \)). The overall sex ratio of the scheduled tribe population in rural Manipur (1:0.98) seems to have a close relationship with the present population in Saikul sub-division (Statistical Abstract Manipur, 2008). But, the overall sex ratio of the present study in both areas are higher than those reported among the Christians (96.54) and Niam (97.99) Khasis of Meghalaya by Mukherjee (2002); the rural (98.79) and urban (99.76) Laos of Manipur by Chanu (2007).

In Saikul sub-division, there is no difference in the sex ratio as we move up from the age group 0-14 years to 15-49 years, indicating a similar child mortality rate among males and females till the reproductive age group. However, the sex ratio in the post-reproductive age group (192.15) is significantly higher than the ideal sex ratio of 1:1 (\( \chi^2 = 12.45 \), d.f. = 1, \( p < 0.005 \)) indicating that the average longevity is much more in males than in females. In Imphal town, although the sex ratio in the pre-reproductive age group (116.94) is very much tilted in favour of males, the same in the reproductive age group is exactly according to the ideal sex ratio of 1:1. Like in the case of Saikul sub-division, the sex ratio in the post-reproductive age group (6.46) in Imphal town is higher than the ideal sex ratio of 1:1, where the differences are highly significant (\( \chi^2 = 6.46 \), d.f. = 1, \( p < 0.025 \)) indicating the higher average longevity among males.
Age at marriage has been recognized as one of the prominent determinants influencing fertility. It has a profound impact on childbearing because women who marry at an early age have on average, a longer period of exposure to pregnancy and a greater number of childbirths. The mean age at marriage of the Khongsai Kuki women is greater in Imphal (i.e., 22.24 ± 0.16 years) than in Saikul sub-division (i.e., 20.36 ± 0.09 years). Similarly, the Khongsai Kuki males in Imphal town (26.85 ± 0.31 years) have the greater mean age at marriage than their Saikul counterparts (25.19 ± 0.22 years). Singh (2006) reported that the mean age at marriage among the Meitei, Pangal, Nepali and Kabui women of Manipur is 19.98 ± 0.34 years, 17.54 ± 0.21 years, 17.33 ± 0.22 years and 20.03 ± 0.12 years respectively. Chanu (2007) also reported the mean age at marriage among the Loi women in urban and rural Manipur as 21.87 ± 0.27 years and 20.95 ± 0.23 years respectively. So, the Khongsai Kuki women in both the study areas married later than all the above populations, excepting in the case of urban Loi women who married later than the Khongsai Kuki women in Saikul sub-division. The greater mean age at marriage among the present population in Imphal town may be mainly due to the influence of various social factors such as education and awareness of the family planning that are expected to be higher in urban areas than in rural areas.

Like age at marriage, the mean age at first child birth among the present population is greater in Imphal than in Saikul sub-division. It is 28.21 ± 0.32 years for males and 23.70 ± 0.16 years for females in Imphal town, and 21.60 ± 0.10 years and 26.29 ± 0.23 years respectively for Saikul sub-division. Combining the two study areas of
both males and females, the mean age at first child birth of the Khongsai Kuki is found to be $24.51 \pm 0.15$ years.

Age at menarche is another important parameter in bio-demographic studies. The mean menarcheal age among the Khongsai Kuki women is greater in Saikul (i.e., $14.53 \pm 0.21$ years) than in Imphal (i.e., $13.94 \pm 0.08$ years) area. Pooling data of both the study areas together, the mean age at menarche is $14.37 \pm 0.05$ years. Purngula and Sengupta (2002) reported the mean menarcheal age among the Ao Naga girls of Nagaland is 14.88 years. Prakash et al, (2010) reported the mean menarcheal age among Kapu, Paki, Settibalija and Yerukula of Coastal Andhra Pradesh as 13.19 years, 12.75 years, 12.69 years and 11.99 years respectively. So, it is observed that the mean menarcheal age among the present population, combining both the areas, is slightly lower than of the Ao Naga girls, but greater than the Kapu, Paki, Settibalija and Yerukula. Malnutrition, low socio-economic factors, rural-urban residence, family size etc. may be attributed to the greater mean age at menarche in rural populations (Kalita and Sengupta, 1997; Majumdar, 1996; Biswas and Kapoor, 2003).

1. **Fertility Differentials**

In the present study, we have included two measures of fertility, namely, the mean number of live births (or average number of live births) per married women aged 15-49 years, and the total marital fertility rate (TMFR) which is the sum of the age-specific marital fertility rate (ASMFR). The ASMFR was calculated by dividing the number of
live births in a given age group during the five-year period preceding the survey by the number of ever married women in that age group for the same period.

The mean number of live births per mother among the Khongsai Kuki is higher in Saikul sub-division than (3.74 ± 0.11) in Imphal town (3.19 ± 0.13), although it is not statistically significant (t = 0.93, p > 0.05). The higher fertility rates in rural areas than urban areas were also reported by Ahmed, 1985; UN, 1999; Findley, 2005 and Kullu, 2006. Pooling the data of both the study areas together, the mean number of live births per mother among the Khongsai Kuki population is found to be 3.59 ± 0.09. The mean number of live births per mother among the present population is higher than that of the Lois (2.56) of Imphal Valley (Chanu, 2007), overall Manipur (2.08) (NFHS-3) and overall Northeast (3.07) of India (Dey and Goswami, 2009) but lower than the Meitei (4.01), Kabui (4.12) and Nepali (4.15) of Manipur (Singh, 2006) and Khasis (5.18) of Shillong (Mukherjee, 2002). However, it is more or less similar with the Meiteis in Northeast India (Das and Mithun, 2010). Like the mean number of live births, the TMFR among the Khongsai Kuki is higher in Saikul (4.84) than in Imphal (3.71). Combining data for the two study areas, the TMFR of the present population is found to be 4.27, which is higher than the Lois (3.91) of Imphal Valley (Chanu, 2007) but lower than the Digaru Mishmi (4.45) of Arunachal Pradesh (Gogoi, 2008), Semsa (6.02) of Assam (Limbu, 1996), Hmars (6.10) of Mizoram (Varte, 2006), and the War Khasi of Meghalaya (Khongsdier, 2005c).
The completed fertility size (i.e., mean live births to mothers who are aged 45 and above years, and lived continuously in wedlock till the attainment of 45 years of age) is slightly higher in Saikul sub-division (5.78) compared to their Imphal counterparts (5.28). Pooling the data of both the areas together, the completed fertility size of the Khongsai Kuki is found to be 5.48. The completed fertility size among the Kota is reported to be 3.67 live births per mother (Ghosh, 1976). Khongsdier (1993) reported that, the completed fertility size among the Christian and non-Christian War Khasi is 6.69 and 6.61 live births per mother respectively. The completed fertility size among the Sersoa is found to be 7.52 live births per mother (Limbu, 1996). Gogoi (2008) observed that the completed fertility size among the Idu Mishmi, Digaru Mishmi and Miju Mishmi as 4.86, 6.12 and 6.48 respectively. Comparing with the above populations, the completed fertility size among the Khongsai Kuki is found to be higher than the Kota and Idu Mishmi, but lower than the Digaru Mishmi, Miju Mishmi, Christian War Khasi, non-Christian War Khasi and Sersoa. Therefore, the completed fertility size of the Khongsai Kuki seems to be moderate in comparison to the above populations. The average number of surviving children per mother who are aged 45 and above years and live continuously in wedlock till the attainment of 45 years in the present population is higher in Saikul sub-division (5.28) than in Imphal town (4.60). Pooling the data for both the present study areas, it is found to be 5.07.

The child-women ratio among the Khongsai Kuki in Saikul sub-division (75.71) is slightly higher than their Imphal (73.22) counterparts. Pooling the data for both areas, the child-women ratio in the present population is found to be 74.51 which is higher than
that of the Miju Mishmi (27.49), Idu Mishmi (37.43) and Digaru Mishmi (43.07) of Arunachal Pradesh (Gogoi, 2008), Semsa (50.23) of Assam (Limbu, 1996), Kota (62.17) of Nilgiri Hills (Ghosh, 1976) and Christian (61.48) and non-Christian (62.10) War Khasi of Meghalaya (Khongsdier, 1993). But, the same is lower than the Dinka (78.00) as reported by Roberts (1956) and Pnars (86.96) of Jaintia Hills (Khongsdier, 1992). So, it is observed that the child-women ratio among the Khongsai Kuki population is high, especially when compared to other populations in Northeast India. The reason for the higher child-women ratio in the present population is due to lower mortality rate up to the age of 4 years. The average number of surviving children per all married women in this population is found to be slightly higher in Saikul sub-division (3.51) than in Imphal town (3.06).

2. Mortality Differentials

Mortality rate is defined as the number of deaths registered in a given year to the total number of live births in a given year, usually expressed per 1000 live births. But, mortality rate, for the present study has been expressed as the number of deaths per 100 live births. The total mortality rate among the Khongsai Kuki population, based on all live births is 6.10% in Saikul and 3.95% in Imphal indicating that the overall mortality rate of the present study is higher in rural than in urban area as reported by Rambhadran and Swami (1982) and NFHS-3 (IIPS, 2007).

(a) Infant mortality rate: The infant mortality rate among the Khongsai Kuki is significantly higher ($\chi^2 = 4.02$, d.f. = 1, $P < 0.05$) in Saikul sub-division than
that of the Imphal town. It is 2.39% and 0.99% per 100 live births respectively.

Pooling data of both the areas of study, the infant mortality rate among the Khongsai Kuki is found to be 2.05%. NFHS-3 (IIPS, 2007) reported the infant mortality rate of both rural and urban India during 2001-05 as 6.2% and urban 4.2% respectively. It is 6.82% and 8.60% among the Christian and Niam Khasi of Meghalaya (Mukherjee, 2002). Gogoi (2008) reported that the infant mortality rate among the Digaru, Miju, and Idu Mishmi of Arunachal Pradesh is 10.56%, 13.22% and 6.28% respectively. So, the infant mortality rate in the present population is quite low as compared to other populations of India and Northeast India. However, the present findings in both rural and urban areas are closely related with the Lois of rural (2.09%) and urban (1.02%) Manipur respectively (Chanu, 2007).

(b) Child mortality rate: For the child mortality rate in the present study, we have taken into consideration between the ages of 1 to 14 years. So, the child mortality rate among the Khongsai Kuki is found to be higher in Saikul subdivision (3.51%) than in Imphal town (2.72%) though they are statistically not significant ($\chi^2 = 1.41, \text{d.f.} = 1, P > 0.05$). Pooling data for both the present study areas together, the child mortality rate per 100 live births among the Khongsai Kuki is found to be 3.32% which is much lower than those reported among the Christian (10.20%) and Non-Christian War Khasi (12.45%) of Meghalaya (Khongsdier, 1995); the Semsa (31.60%) of Assam (Limbu, 1996); the Digaru Mishmi (21.12%), Miju Mishmi (21.74%) and Idu Mishmi (8.29%)
of Arunachal Pradesh (Gogoi, 2008). But, it is higher than the Lois of rural (0.37%) and urban (0.26%) Manipur (Chanu, 2007). However, it can be concluded that the child mortality rate among the Khongsai Kuki population in Manipur is low as compared to the other populations in Northeast India.

The infant and child mortality rates in the present population are higher in Saikul sub-division than in Imphal town which in corresponding to the previous findings by Sembajawe (1977), RGI (2004), NFHS-3 (IIPS 2007), Andoh et al (2007). These differences are mainly due to the differences in age at marriage, maternal and paternal education, household income, ANC characteristics, etc., between the two study areas.

3. Reproductive Wastages

The frequency of reproductive wastages (abortions and still births) based on the total number of pregnancies among the Khongsai Kuki married women in Saikul is 8.87% (7.05% abortions and 1.82% still births), whereas it is 8.39% (7.95% abortions and 0.45% still births) in Imphal. So, there is similarity in the frequency of reproductive wastages between both Saikul and Imphal, though it is slightly higher in Saikul. Pooling both areas together, the frequency of reproductive wastage among the Khongsai Kuki married women is 8.76% which is lower than the Hajong (15.60%) of Meghalaya (Barua, 1982). It is similar with the Munda (8.83%) of Assam (Gogoi, 2002), Non-Christian War Khasi (8.09%) of Meghalaya (Khongsdier, 1995) and Khasi (8.16%) of Meghalaya (Mukherjee, 2002). But the same is higher than those reported among the Hmars (4.11%) of Mizoram (Varte, 2006), Lois (5.62%) of Manipur (Chanu, 2007), Semsa (5.90%) of
Assam (Limbu, 1996), Nepalese (5.92%) of Manipur (Singh, 2006), Christian War Khasi (7.68%) of Meghalaya (Khongsdier, 1993) and Meitei (7.85%) of Manipur (Singh, 2006). Combining the rates of child mortality and reproductive wastage together, it is found that the potential offspring loss among the Khongsai Kuki in both the study areas is 13.82%.

From the above findings, we can conclude that the frequency of reproductive wastage among the Khongsai Kuki women is high in comparison to the other populations of Northeast India. It is not clear why the reproductive wastages in Imphal town is as high as of that of Saikul sub-division despite having greater score in respect of ANC characteristics than their Saikul counterparts as the present study mainly deals with the fertility and mortality.

**Determinants of fertility and child mortality**

Many previous findings have suggested that biological as well as social factors such as women's age, age at marriage, age at menarche, age at first child birth, age at menopause, type of marriage, education, economic status, religious attitudes, adoption of contraceptive devices and others have an effect on fertility and mortality (RGI, 1971; Caldwell, 1979; Lee, 1979; Elamin and Bhuyan, 1999; Reddy et al, 2006).

**Biological factors**

The highest number of the mothers in both Saikul sub-division (39.10%) and Imphal town (41.73%) belong to the age group 26 – 35 years. Regarding age at marriage, the highest number of mothers in Saikul sub-division married at the age of ≤ 19 years, whereas majority of them in Imphal town married at the age of 20-23 years. ABO blood
group incompatible mating in the present population is slightly higher in Saikul sub-
division (45.50%) than in Imphal town (43.65%). So, ABO blood group incompatible 
mating in the present population of both the areas are higher than those reported among 
the Digaru Mishmi (28.72%), Miju Mishmi (38.05%) and Idu Mishmi (35.99%) by 
Gogoi (2008), but similar with the Gonds of Garriyabant, Chhattisgarh (44.66%) (Soni 
and Mukherjee, 2009).

Of the biological factors included in the present study, higher age group of the 
mothers, earlier age at marriage, lower mean birth intervals were found to be significantly 
related with higher fertility rates in Saikul sub-division. But, in Imphal town, only age 
group of the mothers seems to have a significant role in reducing the fertility rate, i.e., 
mother’s age group is corresponding to the fertility rates. However, the impact of 
mother’s age at marriage in this area is not negligible, as the fertility rate tends to decline 
with the higher age group at marriage. Similar findings on the influence of maternal age 
and age at marriage were reported by Pandey and Talwar (1987), Yadav and Badari 
compatible type of mating seems to have no significant role in influencing the fertility 
rate in the present population.

ABO compatible types of mating is found to reduce the infant mortality rate in 
Saikul sub-division, whereas greater mean birth interval is significantly related with 
lower infant mortality rates in both Saikul sub-division and Imphal town. Although, age 
of the mothers is not found to play a significant role in reducing the infant mortality rates,
it is significantly associated with the child mortality rates in both the study areas. In other words, higher age group of the mothers is significantly associated with higher child mortality rates. It may be mentioned that younger mothers are more likely to attend ANC than the older ones (Table 5.22.3) and that ANC attendance is significantly associated with the child mortality rates in both Saikul sub-division and Imphal town (Table 5.22.2).

Unlike in the case of infant mortality, ABO compatible mating type is equally important in reducing the child mortality rates in both the study areas. The impact of mother’s age at marriage, birth order, and causes of infant and child deaths on infant and child mortality are not found in the present population of both Saikul sub-division and Imphal town.

The regression analysis shows that maternal age at marriage is independently associated with rural-urban setting and maternal education. In other words, mothers who are in Imphal town and mothers who are in higher level of education are likely to marry later than their other counterparts. Higher household income and smaller family size are also significantly associated with greater mean birth interval in the present study.

So, the importance of biological factors in influencing the fertility as well as infant and child mortality rates in the present study is found to be more in Saikul sub-division than their Imphal counterparts.
Socio-economic factors

Nuclear type of family is very common in both Saikul sub-division and Imphal town as there are 71.04% of mothers in Saikul sub-division and 85.04% in Imphal town. The highest frequency of mothers in Saikul sub-division (44.57%) belong to the large size family, whereas it is medium size family in Imphal town (44.88%). The frequency of consanguineous marriage is very less in the present population although it is slightly higher in Saikul sub-division (4.18%) than in Imphal town (3.93%). Rural and urban setting seem to play an important role in the educational level of the parents as there are 14.33% of mothers and 4.27% of fathers in Saikul sub-division who are illiterates against none in Imphal town. Cultivation, being the main occupation in Saikul sub-division, majority of the mothers (8.82%) and fathers (72.56%) in this area belong to this category. On the other hand, majority of the mothers in Imphal town are housewives (37.79%) and service holders (37.79%), whereas service is the main occupation of the fathers (87.70%) in this area. Household income is higher in Imphal town compared to their Saikul counterparts as majority of the mothers in Saikul sub-division belong to LIG (60.00%), although the highest frequency of mothers in Imphal town belong to HIG (40.94%). Majority of the mothers (63.88%) in Saikul sub-division lived in kaccha type of house, whereas majority of them (70.86%) in Imphal town lived in pucca house.

In the present study, it is observed that smaller size of family and higher educational level of the mothers and joint type of family are associated with low fertility rate in both the study areas. Besides, higher educational level of the fathers in Saikul sub-division is related to low fertility rate, whereas mothers who are service holders is
significantly related to high fertility rate in this area. The fact that women's education has a positive impact on fertility reduction has been established by many others (Bulanto et al, 1993; Khakhar and Gulati, 2000; Dwivedi and Rajaram, 2004; NFHS-2 (IIPS, 2007), Dey and Goswami, 2009). Household income is found to play a significant role in reducing the fertility rate in Imphal town. The same is also true in the case of Saikul sub-division despite the absence of statistical differences.

The relationship between the infant mortality and type of family, maternal education, paternal education, paternal occupation and type of house are significant negative in Saikul sub-division. In other words, joint type of family, higher parental education, better paternal occupation and better house type can significantly reduce the infant mortality rate in this area. Interestingly, none of the selected socio-economic factors are found to play a significant role on infant mortality in Imphal town. However, the impact of nuclear type of family, higher paternal education in reducing the infant mortality could not be ruled out in Imphal town. Household income also seems to play an important role in reducing the infant mortality rate in both the study areas, despite the absence of statistical significance.

The correlation between the child mortality rate and maternal as well as paternal education is highly significantly in Saikul sub-division signifying the decline in the child mortality rate as the parental educational level increases. Hygienic types of toilet as well, can significantly reduce the child mortality rate in this area. Gubhaju et al, (1991) also reported that toilet facility is an important determinant of mortality rate. In Imphal town,
maternal education and paternal education are found to play an important role in
decreasing the child mortality rate, although the relationship between child the mortality
and paternal education is not statistically significant. Although the influence of paternal
occupation, household income, types of house and source of drinking water on the child
mortality rate is not statistically significant in Saikul sub-division, they have a significant
impact on the total mortality rates, i.e., pooling data for infant and child mortality rates.
However, education and hygienic types of toilet seems to be the most important factor in
reducing the child mortality rate in the present population. Further, the determinants of
socio-economic factors on the child mortality rate in the present population are higher in
Saikul sub-division than in Imphal town.

The mean actual and desire number of children are found to be significantly
higher among mothers in Saikul sub-division than their Imphal counterparts. The t-values
between the two areas are 2.22, p < 0.05 for actual and 4.04, p < 0.05 for desired number
of children. Male child is much preferred over female child by mothers of both the study
areas. Son preference is much higher among mothers in Saikul sub-division (81.80%)
than their Imphal counterparts (57.50%). There are also 17.61% of mothers in Saikul sub-
division and 37.79% in Imphal town with no sex preference of the child.

With the lower rate of consanguineous marriage as well as mother's preference on
female child in the present study, their association with fertility and child mortality could
not be perceptible.
Family planning

Mother’s awareness and positive attitude of family planning method is quite high in the present population (Saikul: 82.08%; Imphal: 92.12%), although only 13.43% of couples in Saikul sub-division and 28.35% in Imphal town were found to have adopted family planning. Ramesh et al, (1996) also reported that knowledge of contraception is almost universal among Indian, but only 41% are actually using contraception. Adoption of family planning among the Khongsai Kukis is lower than those reported among the Assamese Hindus (61.30%), Muslims (46.10%) and Christians (45.60%) (NFHS-3) (IIPS, 2007); the Loi of Manipur (41.76%) (Chanu, 2007) and Nauruan (36.00%) (DHS Report, 2007). Lack of reliable source of family planning method is expected to be the main reason for lower rate of adoption in the present study. Comparing the two study areas, awareness ($\chi^2 = 7.22$, d.f. = 1, $p < 0.01$) and adoption ($\chi^2 = 14.17$, d.f. = 1, $p < 0.005$) of family planning method are significantly higher in Imphal town. The main source of family planning method in the present population is media, elder persons of the family and friends which are categorized as ‘others’ as there are 63.88% of mothers in Saikul sub-division and 50.39% in Imphal town in this category. The frequency of mothers having positive attitude is higher in Imphal town (74.02%) than in Saikul sub-division (60.89%), despite the absence of significant differences.

Adoption of family planning is found to reduce the fertility rate in the present population of both Saikul sub-division and Imphal town, although it is not statistically significant. Similarly, the infant and child mortality rates are slightly lower among adopters than non-adopters of family planning in both the study areas, although their
relationships are not significant. As mentioned above, the higher mean desire number of children than their actual number in this population (Table 5.19) may be the reason for a similar fertility rate among adopters and non-adopters of family planning.

**Antenatal and post-natal care**

In the present study, the frequency of ANC attendance during pregnancy is significantly higher ($\chi^2 = 12.38$, d.f. $= 1$, $p < 0.005$) in Imphal town (97.58%) than in Saikul sub-division (86.18%). Similarly, the difference between the two areas in respect of the number of ANC visit is highly significant as majority of the mothers in Saikul sub-division (54.18%) visited for only 2 to 3 times, whereas almost half of the mothers (i.e., 49.23%) in Imphal town visited for more than 5 times. There are 59.44% of mothers in Saikul sub-division and 89.52% in Imphal town who had visited ANC during their 1st trimester of pregnancy. So, the difference between the two area is also highly significant ($\chi^2 = 24.29$, d.f. $= 2$, $p < 0.005$). The frequency of mothers receiving iron and folic acid tablet is significantly higher ($\chi^2 = 60.10$, d.f. $= 1$, $p < 0.005$) in Imphal town (79.03%) compared to their Saikul counterparts (38.10%). Vaccination of tetanus injection is quite high in both the study areas (Saikul: 93.58%; Imphal: 95.97%), although it is slightly higher in Imphal town despite the absence of significant difference ($\chi^2 = 0.99$, d.f. $= 1$, $p > 0.05$). The frequency of mothers not attending ANC is significantly higher ($\chi^2 = 10.50$, d.f. $= 1$, $p < 0.005$) in Saikul sub-division (13.93%) than in Imphal town (2.42%). So, there is a great difference between rural and urban setting in respect of antenatal care in the present study as mothers in Imphal town are far more advanced than their Saikul counterparts.
ANC attendance is found to be significantly related to the decreasing fertility rate in both the study areas. Similarly, ANC attendance can decline the infant and child mortality rates in both the study areas, excepting the infant mortality rate in Saikul sub-division. So, ANC attendance is one of the most important factors in regulating the fertility and mortality rates in the present population. The coefficients of regression (B) shows that mother’s who are in younger age groups and whose husbands are highly educated are more likely to attend ANC in the present study.

Dizziness and/or vomiting is found to be the most common type of obstetric morbidity during pregnancy in both Saikul sub-division (43.65%) and Imphal town (45.97%). Comparing the two study areas, the overall percentage of mothers having health obstetric morbidity is found to be higher in Imphal town (89.52%) than in Saikul sub-division (78.33%). Mother’s obstetric morbidity during pregnancy in the present population is positively and significantly correlated with rural-urban setting, maternal education and ANC attendance. However, ANC attendance is the most important among the three factors. It is not clear why mother’s obstetric morbidity is higher among those attending ANC. Earlier studies have also doubted the relationship between ANC attendance and maternal health as well as morbidity (McDonagh, 1996). It is also reported that mothers who attended ANC services have higher rate of obstetric morbidity due to the fact that such women are more aware of their health problems in consultation with health personnel. Therefore, the present finding is corresponding to the findings among the Lao people’s democratic republic (WHO, 2000) and other related studies in India (Bhatia and Cleland, 1995; Chandhiok et al, 2006).
Regarding mother’s health problem after delivery, majority of the mothers in Saikul sub-division (62.42%) and Imphal town (60.10%) are reported to have abdominal and/or pelvic pain. Comparing the two areas, the overall percentage of mothers having health problem after delivery is slightly higher in Imphal town (83.74%) than in Saikul sub-division (80.57%). Mother’s health problem after delivery is positively associated with rural-urban setting, whereas it is negatively associated with maternal occupation and place of delivery. In other words, mothers are more likely to have health problem after delivery if their delivery takes place at home where there is no medical facilities.

Delivery in a medical institution promotes child survival and reduces the risk of maternal mortality (Pardesi et al, 2011). In the present population, only 10.54% of mothers in Saikul sub-division against 58.53% in Imphal town delivered at a hospital/clinic indicating that place of delivery is very much influenced by rural-urban setting in the present population. The frequency of mothers who delivered at hospital in Saikul sub-division is much lower than those reported in Nanded district (69.00%) of Maharashtra (Pardesi et al, 2011), rural India (31.00%) (NFHS-3) (IIPS 2007), and the Lois of rural (27.16%) and urban (54.86%) Manipur (Chanu, 2007). But, this in Imphal town is slightly lower than the Nanded district of Maharashtra, although it is higher than the rural India and the Lois of both rural and urban Manipur. Regarding delivery assisted by health personnel, the frequency is very high in Imphal town (81.30%) as compared to their Saikul counterparts (14.37%). The frequency in Saikul sub-division is much lower than those reported in Nanded (69.00%) of Maharashtra (Pardesi et al, 2011); rural India (40.00%) (NFHS-3) (IIPS, 2007), Uttar Pradesh (71.00%) (Bloom et al, 1999) and the
Lois of rural (46.91%) and urban (71.60%) Manipur (Chanu, 2007). But, the present findings in Imphal town have greater score than the above findings with respect to the deliveries conducted by health personnel. Pathak (2007) reported that there is an enormous difference in utilization of delivery care among rural and urban population. The non-usage of medical facilities and health personnel by most of the mothers during their deliveries in Saikul sub-division may be associated with the non-availability of health care facilities in that particular area.

The influence of persons conducting delivery on infant and child mortality rates is more important than place of delivery although these rates are higher among mothers who delivered at home than in hospital/clinic in both the study areas. However, pooling data for the infant and child mortality, their relationship with place of delivery is statistically significant in Imphal town. The infant mortality rate in Imphal town is significantly higher among mothers who were assisted by elderly ladies than health personnel at the time of delivery, although it has no significant impact in Saikul sub-division. But, the child mortality rates in both the study areas are significantly higher among mothers whose deliveries were conducted by elderly persons. So, place of delivery and persons assisting delivery are more important in Imphal town than in Saikul sub-division in respect of the mortality rate.

The overall percentage of mothers taking additional diet during pregnancy in the present study is found to be higher in Imphal town (57.25%) compared to their Saikul counterparts (12.07%). Fruit is found to be the most common type of additional diet
during pregnancy in both the study areas. Mothers in both the study areas are more keen to take special diet after delivery than during pregnancy. There are 59.92% of mothers in Saikul sub-division and 86.18% in Imphal town who reported to take special diet after delivery. Majority of the mothers in both the study areas (Saikul: 57.01%; Imphal: 69.92%) took chicken and/or its soup.

**Immunization and child care**

Feeding of colostrums is found to be more common in Imphal town (86.57%) than in Saikul sub-division (64.78%). Feeding of colostrums is not found to have a significant impact on the mortality rate in the present population, although the infant mortality rate in Saikul sub-division and the child mortality rates in both the study areas are found to be higher among mothers who did not fed colostrums than to those who fed.

Majority of the Khongsai Kuki mothers in Saikul sub-division and Imphal town consulted doctor for treatment of diarrhoea and Pneumonia. Besides, medicine men were also consulted by some of the mothers. However, the proportion for consultation of doctor is higher in Imphal town in the case of both diarrhoea (Saikul: 73.04%; Imphal: 83.58%) and Pneumonia (Saikul: 76.52; Imphal: 82.08%). The infant and child mortality rates are higher among mothers who consulted medicine man than doctor in both the study areas. However, their relationships are not statistically significant. But, consulting doctor for treatment of diarrhoea can significantly decrease the mortality rate in Saikul sub-division when data for the infant and child mortality rates are pooled together. Persons consulted for treatment of Pneumonia is more important in determining the infant
mortality rate than the child mortality rate in both the study areas as the infant mortality rate tends to decline when doctor is consulted.

The Expanded Programme on Immunization (EPI) was initiated by the Government of India in 1978 for six diseases, namely, tuberculosis (BCG), diphtheria (whooping cough), pertussis, tetanus, poliomyelitis and measles (MOHFW, 1991). After more than 3 decades, National Rural Health Mission (NRHM) was launched in Northeast India by the Ministry of Health and Family Welfare, India to make full immunization coverage to all the hill areas resulting to the full immunization rate of more than 90% in Manipur (MOHFW, 2011). This has led to a more or less similar rate of immunization in the present population of both areas. The overall immunization rate of polio, B.C.G., whooping cough and measles among children between the ages 1-5 years is slightly higher in Imphal town than in Saikul sub-division among both males and females. Polio is found to be the most common type of vaccination in both the study areas which is higher than the overall immunization rate. In the present study, immunization includes only those children who were reported to receive at least two of the four vaccinations. The overall immunization rate among males is 90.01% in Saikul sub-division and 95.92% in Imphal town, whereas among females, it is 92.03% and 96% respectively. Comparing males and females, it is slightly higher among females in both the areas. Immunization is further associated with maternal education and household income in the present study. So, the higher the maternal education and household income, the higher is the rate of immunization in the present study which is corresponding to the finding in North India (Dey and Bhattacharya, 2002).
Reported child morbidity

The most common type of health problem among children is cold and/or respiratory disorders among both males and females. There are 29.28% of males in Saikul sub-division and 27.34% in Imphal town who were reported to suffer from cold and/or respiratory disorders, whereas these among females are 31.86% and 31.58% respectively. The overall prevalence of child morbidity is slightly higher in Saikul sub-division than in Imphal town among both males and females. There are altogether 34.76% of males and 38.37% of females in Saikul sub-division, whereas there are 33.81% of males and 36.84% of females in Imphal town who were reported ill within the last 28 days from survey. Further, females are more vulnerable to illness or sickness than their male counterparts in both the study areas. The coefficient of regression (B) shows that child morbidity is significantly influenced by age of the children and their maternal education. In other words, morbidity is less prevalent to children of higher age group and to those whose mothers are highly educated.