# Violent deaths among women of reproductive age in rural Bangladesh

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#### Abstract

The objectives of this paper are to investigate levels and trends in mortality due to violence in women of reproductive age and the social and demographic factors associated with such mortality. The study took place in Matlab, a rural subdistrict in Bangladesh between 1982 and 1998. The data were furnished by a longitudinal population-based demographic surveillance system located in that area. A case–control design study was used out to identify factors associated with death due to violence, and data from death registration forms were analyzed. The death rate due to violence, defined in terms of suicides and homicides, was higher among women than men. Death rates from violence remained at the same level during the study period while death rates from other causes decreased. Young, not yet married women were a high risk group with respect to death from violence. Oppression, physical and mental abuse by husbands and relatives often preceded suicides and homicides. The disadvantaged position of women in Bangladesh society is the key underlying social cause of the violence that occurred. In order for violence against women to decrease, improvement in the social position of women is essential.

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## Introduction

Increasingly, gender-based violence is being recognized as a major public health concern and an intolerable violation of human rights. The World Bank estimated that rape and domestic violence together account for 5% of the healthy years of life lost to women of reproductive age in developing countries (World Bank, 1993). In nearly 50 population-based surveys around the world, from 10% to over 50% of women report being hit or otherwise physically harmed and at risk for being ill-treated by a male partner at some point of their lives (Population Reports, 1999; Heise, Pitanguy, & Germain, 1993). Most abuse and torture remains

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hidden, undisclosed to neighbors, relatives, clinicians and researchers due to the prevailing values, norms and customs of many societies, as well as individual shame, guilt, fear of recrimination and social taboo associated with victimization.

The ideological foundation for gender-based inequality in many Third World countries is the patriarchal social system in which women are expected to be subordinate to men within and outside the household. This disadvantage is established in childhood and continuous through old age. Today, international forums are speaking out against gender-based inequality and violence. For example, the 1994 International Conference on Population and Development at Cairo and the 1995 Fourth World Conference on Women held in Beijing discussed in great detail issues of violence against women (UN, 1994; WHO, 1997). The Cairo Program of Action recognized that gender-based violence is an obstacle to women's reproductive and sexual

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health and rights, and the Beijing Declaration and Platform for Action devoted an entire section to the issue of violence against women. The issue was recently recognized by the United Nations Population Fund as a public health priority (UNFPA, 1999).

Bangladesh is a society with a patriarchal social system and, therefore, is characterized by much gender inequality and discrimination against women. This has various consequences for girls and women in Bangladesh dealing with spheres of life such as food intake. health care, education, freedom to move outside the home and possibility to earn income outside the home. (See, e.g., Cain, Khanam, & Nahar, 1979; Chen, Huq, & D'Souza, 1981; Abdullah & Zeidenstein, 1982; White, 1992; Blanchet, 1996; Schuler, Hashemi, Riley & Akhter, 1996; Rahman, 1997). In this paper, our aim is to determine if and how gender inequality can in extreme circumstances lead to death in general and to mortality due to violence, whereby violent deaths are defined as suicides and homicides. These two causes of death are part of a group of causes that is called external causes of injuries and poisoning (e.g., WHO, 1977) or intentional injuries (e.g., World Bank, 1993).

Although violence against women is a long existing phenomenon in Bangladesh, few studies have been done. One study was carried out in the Matlab area of Bangladesh during 1976-1986 and revealed that intentional injuries and accidents accounted for about 13% of all deaths among women of reproductive age in this period (Fauveau & Blanchet, 1989). Another study conducted in the same area in the 1990s reported that the risk of injury-related death was nearly three times higher in pregnant teenagers than in older pregnant women (Ronsmans & Khlat, 1999). Two other studies carried out in other areas of Bangladesh than Matlab in the 1970s and 1980s found that the proportion of women of reproductive age who died from violence, particularly suicide, had increased over time (Rahman et al., 1991, 1993).

On the Indian subcontinent, violence is probably responsible for a sizeable but under-estimated proportion of pregnancy-related deaths. Verbal autopsies from a surveillance system of all maternal deaths in over 400 villages and seven hospitals in three districts of Maharastra, India, revealed that 16% of all deaths were due to or influenced by domestic violence (Ganatra, Coyaji, & Rao, 1998). Day concluded, on the basis of analysis of external causes of death data of about 30 countries (mostly developed) in the period 1951–1977, that there was no change in the level of death rates due to these causes, but that there was a decline in mortality in general especially for women. He also found everywhere that mortality due to external causes was higher among men than among women (Day, 1984).

An important reason why there are very few studies on death from intentional injuries among women of

reproductive age is that such deaths are rare and a large population is required for an effective analysis. The Matlab Health and Demographic Surveillance System (HDSS) of ICDDR, B provides a unique opportunity for an analysis of violent deaths among women of reproductive age. A first objective of this study is, therefore, to present data on levels and trends in mortality due to violence in Matlab, Bangladesh. A second objective is to identify social and demographic factors that have an impact on death due to violence (suicide and homicide) among women of reproductive age. It is hypothesized that a number of these socioeconomic and demographic factors do indeed have this impact on mortality. A third objective of our study is to investigate the circumstances that contributed to death through detailed analysis of cause of death registration forms that were collected in Matlab. Special attention will be devoted to the topic if gender inequality contributed to these deaths.

## Data and methods

The study used longitudinal data sets collected in Matlab, a rural area of Bangladesh, where HDSS has been in operation for over 30 years. In the surveillance area, locally recruited female Community Health Workers (CHWs) and male Health Assistants (HAs) visit each household every month to record vital events, in particular births, deaths, marriages and migrations.

Details on deaths, including causes of deaths, are recorded on death registration forms (also sometimes called cause of death forms). A new form, containing more items than the old one, was introduced in 1987. The surveillance area is divided into MCH-FP and Comparison areas. The MCH-FP area has received a series of carefully designed health and family planning interventions from ICDDR.B: Center for Health and Population Research since 1977. The Comparison area receives services from the regular government program. Death registration forms served as a valuable source of information for this study, because they are routinely checked by field supervisors and by a medical assistant trained in assignment of causes of death by a physician. Moreover, in order to verify the primary or underlying cause of death, a female health worker or the medical assistant interviewed in a number of cases the relatives and/or neighbors of the deceased. All causes of death were classified with two lists of causes constructed on the basis of the 9th revision of the International Classification of Death (ICD) of the World Health Organization (WHO, 1977). One list contained 32 causes and was used until 1987; the second list has 93 causes and has been used since 1987. Deaths from suicide and homicide had separate codes in both lists. It is possible that some of the reported suicide cases were actually homicides,

because of the inherent tendency of the deceased's family to avoid liability. It is also possible that some deaths that were reported as accidents were actually suicides. In spite of this, we are of the opinion that deaths from suicides and homicides were reported fairly accurately due to involvement of CHWs, HAs, supervisors and the medical assistant in the filling in of the death registration forms. Deaths due to fatal complications of induced abortion are excluded, because they are included under maternal deaths.

Death rates for various causes for women (and men) 15–44 years old were calculated per 10,000 person-years of observation in 1982–1998. There was no need to calculate age-adjusted rates, because the proportions of women in the various age categories between 15 and 45 remained fairly constant between 1982 and 1998.

In order to examine the risk factors of death from violence among women of reproductive age, a casecontrol study was designed. Deaths from violence and all other causes (excluding maternal deaths) were compared with survivors. All deaths from violence (n = 117) and other causes (n = 1181) in 1982–1998 were included as cases. Roughly the same number of surviving women of reproductive age in 1982-1998 were included as controls (n = 1235). Control cases were randomly selected from the group of women 15–44 years old who were alive in the study period. The independent variables used were: women's age, number of surviving children, marital status, women's education, dwelling size, area (MCH-FP vs. Comparison) and religion. Dwelling size was included as a proxy of income. It is used on the basis of a study carried out in Matlab showing that this variable correlated highly with several other socioeconomic indicators. It was recommended for use in situations where information on other socioeconomic indicators is absent which was the case in our study (Islam & Becker, 1981). Information on all the variables mentioned above for both cases and controls was partly available from censuses that were conducted in 1982 and 1996 and partly from the death registration forms. The association between selected factors and the risk of death due to violence and other causes was examined by means of logistic regression analysis. Results are shown in terms of odds ratios before and after controlling for a number of other variables.

We also conducted a content analysis of death registration forms dealing with the cause of death filled in by the CHWs, HAs, their supervisors and/or medical assistant. The purpose of this activity was to gain more insight into the circumstances in which death from violence occurred. With the help of this information it was possible to classify underlying or contributory social causes in broad categories. Data were available for 71 suicides and 10 homicides in 1987–1998, representing nearly all of the deaths that occurred in this period.

Deaths from suicide and homicide are combined in one group in the multivariate analysis.

#### Results

Table 1 shows percentages of death from violence and other causes for the population 15–44 years old between 1982 and 1998 and rates per 10,000 population. The suicide rate of women was considerably higher for women than for men (1.3 vs. 0.8 per 10,000 person-years) while the homicide rate was higher for men than for women (0.5 vs. 0.2). Death rates resulting from accidents were lower for women than for men while rates for other causes were about the same for women and men.

Fig. 1 shows that a decline in death rates from major causes of death and maternal deaths was observed between 1982 and 1998. Rates of death due to violence, however, did not change during the same period.

A comparison of the death rates due to violence in Matlab with those of three European countries is provided in Table 2. European countries were chosen because they are characterized by relatively low levels of gender inequality in comparison with Bangladesh. The male suicide rate was a little lower in Matlab than in the European countries, but the female rate was higher. The male homicide rate was somewhat higher in Matlab than in the European countries, but the female rate was in Matlab at the same level as in the three European countries. Death rates due to accidents were in Matlab of the same order of magnitude as in the European countries for both males and females. The maternal mortality rate was in Matlab much higher than in Europe. Death rates due to other causes were in Matlab much higher than in Europe for both men and women.

Odds ratios of death due to violence and other causes by the categories of selected independent variables are given in Table 3. The first step in the analysis was to

Table 1

Deaths and death rate due to violence and other causes among males and females aged 15–44 years in Matlab, 1982–1998

| Causes of death  | Male |       |                   | Female |       |                   |  |
|------------------|------|-------|-------------------|--------|-------|-------------------|--|
|                  | No.  | %     | Rate <sup>a</sup> | No.    | %     | Rate <sup>a</sup> |  |
| Suicide          | 59   | 4.6   | 0.8               | 101    | 6.2   | 1.3               |  |
| Homicide         | 34   | 2.6   | 0.5               | 16     | 1.0   | 0.2               |  |
| Accidents        | 167  | 12.9  | 2.3               | 67     | 4.1   | 0.9               |  |
| Maternal related |      |       |                   | 326    | 20.1  | 4.3               |  |
| All other causes | 1037 | 80.0  | 14.4              | 1115   | 68.6  | 14.7              |  |
| Total            | 1297 | 100.0 | 18.0              | 1625   | 100.0 | 21.5              |  |

<sup>a</sup>Rate per 10,000 person years (N = 72,0164 for male and N = 75,7159 for female).

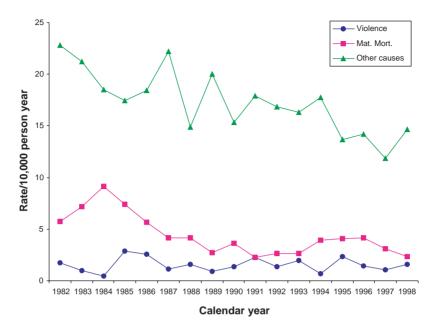


Fig. 1. Death rates of women 15–44 years per 10,000 persons-years, by cause, Matlab, 1982–1998.

| Table 2   |           |
|---|-----------|
| Death rates due to violence and other causes in males and females aged 15-44 years old in Matlab during 1982-1998 a | and three |
| European countries  |           |

| Causes of death | Male   |       |             | Female |        |       |             |        |
|-----------------|--------|-------|-------------|--------|--------|-------|-------------|--------|
|                 | Matlab | Italy | Netherlands | Sweden | Matlab | Italy | Netherlands | Sweden |
| Suicide         | 0.8    | 1.0   | 1.5         | 2.1    | 1.3    | 0.3   | 0.7         | 0.8    |
| Homicide        | 0.5    | 0.4   | 0.2         | 0.2    | 0.2    | 0.1   | 0.1         | 0.1    |
| Accidents       | 2.3    | 4.0   | 2.2         | 1.9    | 0.9    | 0.9   | 0.5         | 0.6    |
| Maternal        | _      |       |             |        | 4.3    | 0.0   | 0.0         | 0.0    |
| All other       | 14.4   | 8.2   | 6.0         | 5.8    | 14.7   | 4.5   | 4.9         | 3.6    |
| Total           | 18.0   | 13.6  | 10.0        | 10.0   | 21.5   | 5.7   | 6.2         | 5.1    |

*Note:* (1) Rates are shown per 10,000 population. (2) Date from European countries refer to early 1990s. (3) Sources of European data are UN Demographic Yearbook 1996. (4) Maternal mortality rates in European countries are smaller than 0.05 per 10,000.

examine the unadjusted association between predictor and outcome variables. The next step was to study the effects of independent variables on the risk of death due to violence and other causes after controlling for other variables. Several factors were significantly associated with the risk of death from violence and other causes.

The unadjusted and adjusted odds of death were significantly higher for women less than 20 years of age than for women in other age groups. The unadjusted odds ratios of dying from other causes decreased with age while the adjusted odds of dying increased. The change in the relationship of age with mortality for other causes is due to interaction with other factors (e.g. number of living children, marital status). Strong associations (unadjusted and adjusted) were found between number of living children and death from violence and other causes. Nulliparous women had a much higher chance of dying than women with children. Higher unadjusted and adjusted odds ratios of death from violence and other causes were found for nonmarried women compared to married women. A majority of the non-married women were single (30 out of 37).

There was no significant effect of education on the risk of death from violence while there was a negative effect of education on death from other causes (before and after controlling for other variables). Size of dwelling space did not show any significant effect on the risk of death (before and after controls). Odds of death from violence (before and after adjustment) were almost similar in the area served by ICDDR,B health services (the MCH-FP area) as in the area served by Table 3

| Factor                 | Number     |              |                      | Unadjusted odds ratio |              | Adjusted odds ratio |              |
|------------------------|------------|--------------|----------------------|-----------------------|--------------|---------------------|--------------|
|                        | Violence   | Other causes | Controls (surviving) | Violence              | Other causes | Violence            | Other causes |
| Women's age            |            |              |                      |                       |              |                     |              |
| <20 years              | 42         | 165          | 104                  | 1.00                  | 1.00         | 1.00                | 1.00         |
| 20-24                  | 43         | 191          | 184                  | 0.58*                 | 0.65**       | 1.27                | 2.31***      |
| 25+                    | 32         | 762          | 947                  | 0.08***               | 0.51***      | 0.37***             | 2.86***      |
| Number of living child | ren        |              |                      |                       |              |                     |              |
| No                     | 67         | 363          | 70                   | 1.00                  | 1.00         | 1.00                | 1.00         |
| Yes                    | 46         | 683          | 1115                 | 0.05***               | 0.13***      | 0.11***             | 0.12***      |
| Marital status         |            |              |                      |                       |              |                     |              |
| Non-married            | 37         | 370          | 153                  | 1.00                  | 1.00         | 1.00                | 1.00         |
| Married                | 80         | 745          | 1082                 | 0.31***               | 0.29***      | 0.54*               | 0.45***      |
| Women's education      |            |              |                      |                       |              |                     |              |
| No education           | 70         | 809          | 788                  | 1.00                  | 1.00         | 1.00                | 1.00         |
| Some education         | 35         | 256          | 417                  | 0.95                  | 0.60***      | 1.92                | 0.67**       |
| Dwelling space (proxy  | of income) |              |                      |                       |              |                     |              |
| <190 sq. ft.           | 23         | 262          | 411                  | 1.00                  | 1.00         | 1.00                | 1.00         |
| 190-299 sq. ft.        | 30         | 279          | 355                  | 1.51                  | 1.23+        | 1.35                | $1.25^{+}$   |
| 300+ sq. ft.           | 35         | 276          | 407                  | 1.54                  | 1.06         | 1.21                | 1.18         |
| Study area             |            |              |                      |                       |              |                     |              |
| ICDDR,B services       | 67         | 595          | 711                  | 1.00                  | 1.00         | 1.00                | 1.00         |
| Government services    | 50         | 520          | 525                  | 1.01                  | 1.19*        | 0.88                | $1.18^{+}$   |
| Religion               |            |              |                      |                       |              |                     |              |
| Muslim                 | 104        | 962          | 1080                 | 1.00                  | 1.00         | 1.00                | 1.00         |
| Non-Muslim             | 13         | 156          | 155                  | 0.87                  | 1.13         | 1.34                | 1.17         |
| Constant               |            |              |                      |                       |              | 0.88                | 2.75***      |
| -2 log likelihood      |            |              |                      |                       |              | 454.34              | 2311.98      |

Odds ratio of death due to violence (suicide and homicide) and other causes (except maternal mortality) among women of reproductive age by the categories of selected variables in Matlab, 1982–1998

p < 0.05.

\*\**p*<0.01.

\*\*\**p*<0.001.

government health services (the Comparison area). There was a tendency towards somewhat higher adjusted odds for other causes in the area served by government services, but the strength of the relationship was not large enough to reach significance at the 0.05 level. Non-Muslims had higher adjusted odds ratios of dying from violence and other causes, but the relationships were not significant.

The information available from death registration forms introduced in 1987 was used to explore the circumstances in which deaths from violence occurred. Table 4 shows a number of these circumstances leading to suicide and homicide and classified by marital status. From the death registration forms it can be deduced that ill treatment by and frequent quarrels with the husband and other family members, contributed or led to suicides in a substantial number of cases. This ill treatment can be emotional or verbal or psychological abuse, but it can also be physical. In nearly half of the suicide deaths (45.7%) quarrels and serious tensions with husbands or other relatives contributed to suicide. Active participation by the husband and/or other relatives by means of beatings or torture could be identified in a further 9.9% of the homicide deaths. Altogether, tensions in the household, ill treatment, quarrels and torture contributed or led to violent deaths in more than half of the cases (55.6%). In addition, several other circumstances were mentioned that were indirectly related to the

 $<sup>^{+}</sup>p < 0.10.$ 

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Table 4

| Туре   | Non-married <sup>a</sup> | Married    | All        |  |
|--|--------------------------|------------|------------|--|
|  | (N = 21) %               | (N = 60) % | (N = 81) % |  |
| Suicide  |                          |            |            |  |
| Ill-treatment by husband and/or in-law(s)            |                          | 41.7       | 30.9       |  |
| Ill-treatment by parents, siblings, and/or relatives | 26.3                     | 11.7       | 14.8       |  |
| Poverty-related                                      | 26.3                     | 3.3        | 8.6        |  |
| Unacceptable partner                                 | 28.6                     | 8.3        | 13.6       |  |
| Childlessness  |                          | 8.3        | 6.2        |  |
| Other reasons/unknown                                | 14.3                     | 10.0       | 11.1       |  |
| Subtotal   | 90.5                     | 83.3       | 85.2       |  |
| Homicide   |                          |            |            |  |
| Beatings, torture by husband and/or in-law(s)        |                          | 8.3        | 6.2        |  |
| Beatings, torture by parents, siblings, relatives    | 9.5                      | 1.7        | 3.7        |  |
| Killed by robbers                                    |                          | 1.7        | 1.2        |  |
| Other reasons  |                          | 5.0        | 3.7        |  |
| Subtotal   | 9.5                      | 16.7       | 14.8       |  |
| Total  | 100.0                    | 100.0      | 100.0      |  |

Social factors contributing or causing violent deaths (expressed as percentages) among women of reproductive age, according to marital status in Matlab, 1987–1998

<sup>a</sup>No. of never married: 18 and no. of widowed/divorced: 3.

disadvantaged position of women in rural Bangladesh. This was the case when financial hardship in the family (poverty), childlessness and rejection of marriage offer or unacceptable partner were mentioned, as for 19.4% of the suicides.

More information on the underlying or contributory causes of violent deaths were derived from the case histories recorded on the HDSS death forms since 1987. We saw already that ill treatment and oppression by the husband contributed to about 46% of the suicides. Such deaths can be illustrated with the case of a young uneducated Hindu woman whose death was reported on the cause of death form as follows: "The woman was adult and married. She had a two-year old child and was amenorrheic till one month before her death. There were frequent quarrels with her husband in the last 3 days before her death. It is reported that her husband wanted to sell the golden jewelry those she brought as gift from her father's house. As a result, there was an extreme quarrel between them. In one stage of the quarrel with her husband, she drank a liquid medicine used to kill insects of paddy field. Her husband took care of her instantly, but treatment was given only by the people of the house: no doctor was called for that. The woman vomited two times one hour before of her death".

Some women committed suicide due to povertyrelated reasons; it happened in about 9% of the suicides and occurred especially among divorced or abandoned women. An example is a Muslim woman whose suicide is described as follows: "The woman was from a poor family. After divorce, she lived in her father's house, and they were also poor. Due to lack of peaceful conditions and financial hardship of the father's family, she committed suicide by taking poisonous pesticide. A doctor was brought who declared her dead".

Forced and unacceptable marriages and pre-marital affairs were another reason for suicides. They played a role in about 14% of the cases on which we had information, with a larger percentage among nonmarried women (about 29%). If, for instance, a love affair is not accepted by the parents, it could in extreme cases lead to suicide of the daughter. Sometimes, a marriage was arranged against the will of the person concerned. An example is the verbal autopsy of a 19year-old Muslim girl with some formal education who committed suicide: "The girl is just married. The people of the house reported that, in the evening she went to an outside toilet, and there she became senseless due to poisoning. A doctor was brought who gave some medicine but there was no sign of recovery; she died after some time. But it is ultimately proved from other people that she loved another boy before her marriage and wanted to marry him. Her parents gave her in marriage against her will which led her to suicide by poisoning".

Another reason for suicide is childlessness; about 6 % of women in our sample committed suicide for this reason. Virtually all women in Bangladesh want to have a child soon after marriage. When this does not happen or not fast enough, the husband or members of the

husband's family humiliate her or resort to violence. A childless woman is often called '*opoa*' (a woman with bad luck). An illustration is the case of a 27-year-old illiterate Muslim woman who committed suicide: "The woman is married for six years, but she could not give birth to a child. The woman never became pregnant. The people of the house informed that there was a frequent quarrel between the woman and her in-law(s), including husband about this. One day after her husband had gone for work, the woman climbed up a tree near the house, hanged and died. She was not taken to any doctor".

Nearly 10% of women in our sample were killed by their husbands or in-law(s). An example is a 29-year-old illiterate Muslim woman with children who died after being beaten by her husband. Her cause of death is described as follows: "The husband was unemployed. Her mother-in-law, along with her husband and husband's brother, often misbehaved with her. So, the woman stayed at her father's house for most of the time. Her mother-in-law was influencing the husband to divorce her. Her husband used to beat her when she was in her husband's house. At the day of her death, she was beaten so severely that one of her hands was broken, and she became seriously ill and then died. It was declared that she committed suicide by taking pesticide. The villagers and other relatives said that she was killed by her husband and then they dropped pesticide into her mouth after death. Her husband, and in-laws have hidden what actually happened".

#### Discussion and conclusions

In this article, we were particularly interested in finding out what can be learned about the role of physical and mental violence in death due to suicides and homicides in women 15–44 years old in Matlab in Bangladesh. We were able to conduct a study on this topic, because we had access to good quality data from a demographic surveillance system (HDSS).

We found an average annual death rate due to suicide among women 15–44 years old of 1.3 per 10,000 personyears of observation in 1982–1998 and a homicide rate 0.2 per 10,000 indicating that we are dealing with rare events. The question is how these figures compare with other societies. For this purpose, a comparison was made with three European countries characterized by less gender discrimination than in Bangladesh. We found that in Matlab the female suicide rate was higher than in the European countries while the opposite was found for male suicides. Also, from other sources it is known that higher suicide rates among females compared to males are extremely rare. This can be seen, for instance, by comparing suicide rates by gender in Matlab with those of more developed countries in general. Cause of death statistics from the so-called "Established Market Economies" (or "the more developed countries") showed suicide rates of 0.6 per 10,000 for women 15–44 years old and 2.1 for men in 1990. (These figures were calculated on the basis of data provided in Murray & Lopez, (1996).) This is, once more, the opposite of what was found in Matlab and an indication of the particular vulnerability of women in Bangladesh society.

Another finding was that death rates due to violence remained at the same level between 1982 and 1998 while death rates of other causes declined in this period. This could indicate that there was no improvement of illtreatment of women in rural Bangladesh in the past two decades in spite of the fact that quite a number of social and economic changes had taken place.

Combination of data from the vital registration system of HDSS and censuses made it possible to study the impact of a number of factors on death due to violence and other causes. Multivariate analysis showed that suicide and homicide occurred more often among unmarried, divorced and widowed women than among married women. For not yet married women, the explanation for the high rate is in many cases rejection by the marriage partner or out of wedlock pregnancies while for divorced and widowed women social and economic hardship and abandonment are often the reason. Married women without children were another group among whom suicide and homicide was more common than among women with children. Women who do not bear any children or those whose children do not survive childhood are at greater risk of marital strife, leading in extreme cases to homicide and suicide. A low level of education was not associated with an elevated risk of dying from suicide or homicide. Several of the relationships between the variables and death due to violence are different from the relationships with other causes. The results of the multivariate analyses that we presented are not fully satisfactory, because we could not adequately solve the problem of multi-collinearity existing between some of the independent variables (e.g., age and number of living children). This was not possible due to the small number of cases used in the analysis of determinants of violent deaths.

More evidence of ill-treatment of women leading to death came from the death registration forms. In 56% of the violent deaths in 1987–1998 beatings, torture and other forms of physical abuse by husbands or other family members were described on the cause of death forms. This figure of 56% actually underestimates the disadvantaged position of women in Bangladeshi society. Analysis of the forms showed also that in about 20% of the cases a desperate economic situation childlessness and imposition of unacceptable partners were important reasons for suicides. It is again an indication that women can under certain circumstances find themselves in situations for which they see suicide as they only way out.

A considerable amount of evidence has been presented in our paper, both quantitative and qualitative, showing that physical and mental abuse were perpetrated against women by husbands and/or other family members. This shows the existence of one of the serious problems confronting Bangladesh, namely gender inequality; that is, an inferior position of women compared to men. The design of our study did not allow provision of conclusive evidence on the impact of discrimination against women. In order to produce such evidence, a similar study to this one should have been carried out in a setting characterized by considerable less gender inequality. We are of the opinion, however, that the evidence presented here makes a plausible argument that the disadvantaged position of women in that area contributed to the relatively high numbers of violent deaths that were observed.

The cause-of-death forms as used by the staff of HDSS have a number of limitations in terms of validity and completeness. One reason for this is that these forms are not structured; that is, that they do not contain a series of questions on causes. For this and other reasons it is likely that in a number of cases they did not tell the full story. This could especially be the case with respect to illegitimate pregnancies leading to suicides as well as dowry-related deaths. There is a strong taboo in Bangladesh, especially in rural areas, against pregnancies out of wedlock as has been pointed out by, for instance, Aziz and Maloney (1985) and Fauveau and Blanchet (1989). Their unacceptability can also be derived from HDSS data showing that in each year the number of illegitimate births is extremely low (0.05%)of all live births). It could well be that in some cases unacceptability of an out of wedlock pregnancy was the real reason behind a suicide. Another under-reported cause of suicides and homicides probably was nonpayment of the agreed upon dowry by the bride's family. It is well known that this is a source of much friction between the families of the bride and bridegroom. In certain situations, this can and does lead to physical and mental abuse of the wife by the husband and/or in-laws that a suicide or homicide follows. We did not find evidence in the cause of death forms of non-payment of the dowry as a cause of violent deaths, but this does not mean that it did not play a role. In view of the fact that it is a well-known phenomenon in Bangladesh, it could have been a factor in a number of deaths.

Evidence was presented that violence against women was implicated in a number of suicides and homicides. We focused only on the most extreme form of violence against women leading to death. Violence against women manifests itself in a various other ways and also has an impact on various types of morbidity and on physical and mental well-being in general. Its impact is

pervasive and wide-ranging and not limited to mortality. The implication of this is that many changes in the social position of women in Bangladesh society are necessary, which would involve initiatives in many spheres of life. Various legislative measures should be fully implemented and new measures should be designed and adopted. In rural areas, community leaders, law enforcement agencies and women's groups can play an important role. Education of women will be valuable, because it strengthens the position of women in the households to which they belong. Various types of mass media programs aimed at creation of awareness about violence against women should be fully implemented. Implementation of reproductive health services will be important in various ways including provision of counseling and treatment of childless couples. More data are needed on existence of various forms of violence in Bangladesh society and their impact on mortality, morbidity, physical and mental well-being. Further studies should also be undertaken on the mechanisms and processes operating at various levels of Bangladesh society conducive to violence against women.

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