Role of maternal autonomy on child mortality in slums of Karachi, Pakistan.

Rennie M. D'Souza

Introduction

Pakistan is a male-dominated society and women's status relative to men is worse than that in most other countries. Women have primary responsibility for the health of infants and small children and this is considered to be the women's work. Women are usually secluded from men and have to observe purdah (wearing a veil to cover their face from men). They rarely have a choice of whom they marry, how many children they have, and whether they work. This patriarchal structure greatly limits the possibilities for women to be active outside the home. Two indicators of low female status in Pakistan are limited participation of women in economic activities outside the home and a high percentage of illiterate women (Sathar et al., 1988).

Female autonomy is linked to education. Educated women tend to be more emancipated, economically independent, and have more mobility in public. It may enable mothers to divert resources for maintaining a better environment and adopting appropriate personal illness control through their improved status within the household due to their education (Caldwell, 1979). When a woman is largely surrounded by uneducated people, it will be difficult for her to influence them even though she herself may be educated. Female mobility, mother's autonomy in decision-making on behalf of a sick child, and pluralism in health providers, including a ready acceptance of western medicine were identified as possible mechanisms explaining 'good health at low cost' in Sri Lanka (Halstead, Walsh, and Warren, 1985; Caldwell et al, 1989).

There is a growing recognition of how a mother's autonomy in decision-making affects the health of her children and herself by her ability to obtain information and use it (Dyson and Moore, 1983). The care a child receives from its mother is crucial for its survival. The care a child receives during an illness is the principal mediating factor that determines whether a child recovers from a trivial illness or the illness evolves into a serious one and causes death. The speed of onset of an illness and its perceived severity affects the response of the mother or family in their choice of provider and speed of action (Randall, 1991).

The objective of this paper is to examine restricted maternal autonomy and its effect on under-five-year child mortality in relation to decisions related to treatment of the illness before death and, secondly, in decisions regarding the medical treatment of the child, in general.

Methods

This study was carried out in six slums of Karachi where the Community Health Sciences (CHS) department of the Aga Khan University (AKU) has operated Primary Health Care (PHC) programs since 1985. Details of the study methods have been described elsewhere (D'Souza and Bryant, 1999).

A population based case-control study was carried out during the period 1993-1994. The cases were 222 deaths in children under five years of age from diarrhoea and acute respiratory infections (ARI) in six slums of Karachi during the period 1989-1993. There were 419 controls matched on age, disease (diarrhoea and ARI), and slum. The controls were selected randomly from a list of children who had diarrhoea or ARI identified by Community Health Workers on their monthly household visits during 1993. As the number of potential controls generated on these visits was quite large, a variable ratio of controls to cases was used. Increasing the number of controls to cases increases the probability of having discordant pairs in the analysis and therefore increases the power of the study. There was very little additional cost incurred by having extra controls per case.

The data for this paper comes from questions asked of the mother relating to the management of the illness episode preceding death for the cases and the most recent episode of acute respiratory infection or diarrhoea for

the controls. Maternal autonomy and decision-making were assessed through a standard questionnaire which had open and closed-ended questions. For example, who made the decision to seek outside treatment and who took the child for treatment. Other questions about treatment decisions in general were asked to validate responses about decisions regarding the most recent illness episode. Matched analyses of the cases and their controls were performed using conditional logistic regression (Schlesselman, 1982) in the EGRET statistical package (EGRET, 1993). Initial analyses were done between the outcome variable (mortality) and the maternal autonomy variables separately. These variables were then entered into a stepwise conditional logistic selection procedure in an attempt to derive a model that was parsimonious and had the best prediction (change in deviance). The variables that were significant were ranked according to their likelihood ratio statistic and p value. A significant likelihood ratio statistic (LRS) was used as the criterion for a variable's entry or removal to the model. A significant difference in the amount of variance (deviance difference) explained, was used as the criterion for entry when developing the parsimonious model. All variables entering the model were first assessed for evidence of collinearity. The presence or absence of a crude association by way of the odds ratio was examined again after making adjustment for potential confounding variables to see whether the magnitude of the odds ratio increased or diminished by this adjustment.

There are two opposing hypotheses underlying maternal autonomy in decision-making: the first that the mothers of cases and controls are similar and the differences in autonomy will be due to confounding because the illness are more severe in the cases. Secondly, the opposing hypothesis is that the mothers of cases had more limited autonomy in decision-making which probably delays treatment and is a risk factor for under five-year child mortality. This paper quantifies the effect of restricted maternal autonomy on under five-year child mortality. Recall bias is likely to be an issue as there was a median interval of fifteen months for interviews with mothers of cases compared to two months for controls. Mothers of cases could have forgotten actions or events or there could have been a change in their behavior and attitude since the death of the child. A limitation of this study is that it was not possible to control for severity of illness in the analysis between the cases and controls. As the cases had more serious illnesses than controls, this may require joint decision-making in the family.

To address the issues of confounding due to severity of illness and recall, two strategies were used: first, examining other aspects of decision-making, especially the role of the mother regarding treatment and choice of healers more generally and not only for the last illness episode. Secondly, selecting another variable in which women considered 'joint decision-making to be important in decision-making'. This variable is not confounded by severity of illness, and can be used as an alternative variable for maternal autonomy.

Results

The extent of a mother's autonomy in decision-making was reflected in the higher proportion of mothers among the controls who were the main decision-makers for seeking outside treatment. There were more joint decisions among the families of cases where the husband (father) or mother-in-law (grandmother) or other family members were also involved. Among the mothers in the control group, 48% decided to do something about the child's illness, compared with 30% in the case group. Similarly, 68% of mothers in the control group compared to 38% in the case group, agreed to take the child for treatment. Mothers in the control group also had more mobility as 68% of them took the child for treatment on their own compared to 44% in the case group (Table 1).

There were two to three times higher risks of child mortality in households where husbands or other family members were involved in the decision-making compared to households where the child's mother was the main decision-maker (Table 1).

The husband was the main decision-maker about the affordability of treatment. A slightly higher proportion of mothers among the controls were autonomous in deciding about the cost. On the other hand, a slightly higher proportion of other members of the family decided about the cost among the cases. Where there was joint decision-making, children had a three to four times higher risk of mortality (Table 1).

When the respondents were asked questions about treatment in general, rather than ones specific to the illness before death, it was evident that the mothers of controls had more autonomy in suggesting treatment and healers (Table 2). Restricted maternal autonomy, (not the first to suggest treatment or healers) was a risk factor for child mortality with twice the risk of mortality. The husband and mother-in-law were the two main decision-makers if the mother was not the first one to suggest treatment or healer.

More mothers among the cases felt that joint decision-making was important whereas more control mothers did not think that their husband was more important in deciding about treatment (Table 2). The mothers who thought that joint decision-making was important had almost three times the risk of their child dying. The reasons given for decision sharing were that the husbands were the bread-winners, or in Islam a woman has to listen to her husband, or that it was their tradition to obey their husbands (data not shown).

In Pakistani society mothers-in-law have a very powerful position in the family. Some women blamed their mothers-in-law for not allowing them to take their child to hospital. Mothers-in-law were living with 33% of the cases and 38% of the controls. Mothers of controls more often than cases felt that their mothers-in-law were more important than themselves in deciding about treatment, but this difference for mothers in the control group was not statistically significant. The main reasons why the mother-in-law was important were that she had more experience and they respected her as an elder of the family (data not shown).

As the condition of the cases was more serious, 55% (n=118) of cases were taken to hospital compared with seven percent (n=26) of controls. The child's mother and paternal grand-mother were the two main people suggesting going to the hospital (Table 3). The respondent (mother of the child) and the father had a major role in deciding jointly among the cases, while in the controls higher proportions of mothers or fathers alone decided to take the child to the hospital. Overall, a combination of mother and father took the child to the hospital but a higher proportion of mothers among the controls actually took the child to the hospital (Table 3). Husbands were the main decision-makers about hospital costs and this proportion was higher for cases compared to higher proportions of mothers among controls who made decisions about hospital costs themselves (Table 3).

Table 4 presents a multivariate model that identifies the significant maternal autonomy variables associated with under five-year child mortality. The factors significant in the multivariate model are shown in Table 4. If the husband (father) or other family members were the decision-makers in seeking outside treatment, the child had a three times higher risk of mortality (OR=2.49, 95% CI=1.48 - 4.17). Similarly, the risk of under five-year child mortality was twice as high in families where the respondent did not take the child for treatment (OR=1.78, 95% CI=1.10 - 2.88). If the respondent considered joint decision-making important because she considered her husband more important than herself in decision-making, the child had twice the risk of dying (OR=1.98, 95% CI=1.07 - 3.67). The latter variable is not confounded by severity of illness. All the odds ratios were lower in the adjusted model as compared to the unadjusted odds ratios. Even after controlling for education, the maternal autonomy variables were significantly associated with under five-year child mortality in the model and their estimates did not change significantly. Confounders such as income, ethnicity, religion, age of the mother, family type, and working status of the mother were added to the model but none were significant and therefore not added to the final model.

Discussion

Despite the recognized limitations of the case-control method, this study has provided new insights and support for the view that maternal autonomy factors act independently of the more conventional 'socio-demographic factors' in contributing to under five-year mortality. This is the first quantitative evidence of the effect of restricted maternal autonomy on mortality of children under five years of age in these slums. The analysis suggests that restricted maternal autonomy is a risk factor for child mortality mediated through delay in seeking appropriate health care for the child.

The key issue emerging from the analysis of this paper is that mothers who make decisions for themselves and

their children appear to provide an environment for survival for their children even in this impoverished society. Such children clearly have a better chance of surviving if appropriate action is taken early. decision-making in these communities is complex, but if the mother does not have the autonomy to decide about when and from whom to seek care, the child is at an additional disadvantage.

Restricted maternal autonomy affecting child mortality has been explored from two different perspectives in this study: in decisions related to treatment of the illness before death and secondly in decisions regarding child treatment generally. The latter questions were not related to any illness episode and therefore should be minimally affected by error in recall, confounding due to severity of illness, and change in behaviour over time.

Mothers of cases had restricted autonomy in choice of healers, suggesting treatment, taking the child to a hospital, or decisions regarding cost. Delayed decision-making due to consultation with other family members will postpone life-saving treatment and a mild illness can progress to a serious one leading to death of the child. However, the severity of illness in a case may require more consultation with other family members if the child has to be taken to a hospital or health provider outside the slum area. Therefore, there is a shift in the decision-making from the mother to her husband and other members of the family. The most convincing evidence of restricted autonomy and mobility comes from the role of the mother in decision-making regarding hospitalization. Although the numbers were small, given that severity should be relatively similar if a control was taken to a hospital, mothers had greater autonomy in decisions regarding hospital care among controls. When illnesses are serious, they require decisive action, and high motivation for overcoming barriers to obtain appropriate care which will in turn determine whether a child dies or survives. Women with greater autonomy have been found in other studies to make decisions regarding themselves and their children; to identify children who are sick earlier, and to be more likely to seek help outside the home (Caldwell, Reddy, and Caldwell, 1983).
There are few decisions women can make on their own, and seeking medical care outside the home, especially hospitalization, is not one of them. This is because when they go to the hospital, their housework and other children have to be taken care of, and they have to make arrangements for them. Secondly, it would involve decisions about money. Going to the hospital means getting permission from members of the family like the mother-in-law, and if the respondent lives in a nuclear family, she has to get permission from her husband (Kundi et al., 1993).

In Pakistani society, care of a child is considered a woman's domain and men do not take a great interest in this. They do not interfere in treatment given in the home to the children, but they become involved when decisions have to be taken regarding consulting healers outside the slum or hospitalization or significant expenditures. These facets of maternal autonomy in decision-making have been illustrated in this study. Married women, especially in the lower socio-economic class, as in these slums, are normally confined to purdah. Overall, 70% of the women said that their husbands were more important than themselves in making decisions regarding treatment and therefore they considered joint decision-making important. Men are reluctant to allow their wives to make long, unescorted journeys for treatment, particularly if the illness is perceived to be non-threatening and amenable to traditional treatment. Restrictions on women's travel therefore have a bearing on the health care the mother can seek for her children.

Restricted maternal autonomy is a function of the social structure. The low degree of autonomy of the young mother in an extended family discourages her from taking initiatives and may in some cases leave the young mother powerless to take initiatives on behalf of her children. The antagonism between mother-in-law and daughter-in-law and the presence of other relatives may undermine the confidence of the young woman.

This study in urban slums also demonstrates the negative effect on the child's health when the mother has little control over decisions regarding treatment for the child. The mother-in-law has control over the daughter-in-law and asserts it to ensure that the young woman does not replace her in her son's affections. This often means that the older woman has authority over decisions regarding her grandchildren (Doan and Bisharat, 1990).

There is an evolution of power that a woman acquires with time. As a young wife she does not have very much autonomy. As she produces children, especially sons, her power and autonomy in the eyes of the family (husband and mother-in-law) increase as she has fulfilled her duty to her husband and his family. As she gets older and now

herself becomes a mother-in-law, often a vicious cycle of domination and subordination starts again.

Education is one of the factors likely to influence maternal autonomy. In this study, lack of maternal autonomy and illiteracy were identified as independent risk factors for mortality in children under five years of age. The effect of maternal autonomy variables was reduced when controlled for by education. Factors such as religion, mother's age and working status were not significant in the model. The effect of these factors is probably manifested in the maternal autonomy variables. Other factors that may affect maternal autonomy are the age of the woman, number of sons she has produced, her own inherent personality, her upbringing, the environment in her household that encourages independence and society at large. In India, the main factor determining the shift in decision-making from the parents-in-law to the young mothers was education (Caldwell, Reddy, and Caldwell, 1983). It was the educated women who were more autonomous in decision-making, took their children earlier to health centres when they were ill, did not use traditional treatments, and persisted with treatment prescribed by the doctors. A woman's autonomy in decision-making on behalf of her child was also noted in Kerala to be one of many determinants of that Indian state's exceptional health record despite low economic performance (Sushama, 1990).

Dealing with the restriction of maternal autonomy constitutes a major behavioral and cultural challenge for mothers. The policy implications of this study relate to the question of how women can be empowered in decision-making at the household level. This is a deep rooted cultural issue and attempts to address it threaten to undermine the male dominance in Pakistani society. The low status of women in Pakistan results from a combination of cultural and religious factors. At times, religious interpretations of the Koran are manipulated to promote women's subordination by Islamic fundamentalists in the country. This prevents women leaving the house and acquiring formal education.

Mothers in these slums need to use support systems developed within the community that they can rely on. Community health workers (CHWs) who have access to every household and can be trained to identify high risk households, is a possible solution. CHWs have been found to be the center of the functioning of primary health care (PHC) programs and the cornerstone of the PHC approach (Frankel, 1984). CHWs and PHC staff need to develop rapport with these mothers and establish themselves as the first point of contact in emergencies. In return the CHWs can help mothers make decisions about treatment for a sick child. In Burkina Faso, the two factors that influenced the use of CHWs were severity of illness and perceived effectiveness of treatment (Sauerborn, Nougtara, and Diesfeld, 1989).

If indicators of autonomy are identified, then we could try to document prospectively restricted autonomy in households in a cohort study. Households identified as high-risk, because of low maternal autonomy in these communities, could be followed prospectively to identify health care behaviour patterns that might emerge. This could be built into the monitoring system of the CHWs and in the PHC program. Along with this, qualitative and anthropological studies are needed in which the dynamics in a household could be observed for decision-making in everyday matters and in times of crisis. In addition, mothers-in-law and husbands could be interviewed about what they considered to be the role of the mother in decisions regarding treatment for their children and other household decisions. In future studies, some measure of severity of illness should be introduced in order to control for confounding, so that it can be proved conclusively that mothers with more autonomy have lower risks of child mortality.

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