



## Article

# Non-Parental Investment in Children and Child Outcomes after Parental Death or Divorce in a Patrilocal Society

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**Abstract:** Children rely on support from parental helpers (alloparents), perhaps especially in high-needs contexts. Considerable evidence indicates that closer relatives and maternal relatives are the most likely to provide this care, as inclusive fitness theory suggests, but whether this is equally true across different family types and in culturally patrilocal societies requires investigation. This structured interview study (N = 208 respondents with 323 dependent children) focuses on who helps raise children in rural Bangladesh after the father's or mother's death, or divorce, in comparison to families with both parents present or the father temporarily a migrant laborer. Family types differed in where and with whom children resided, who served as their primary and secondary caregivers, and who provided material support, but mother's kin played a major role, and were the primary providers of material resources from outside the child's household in all family types. Despite the patrilineal ideology, only one-quarter of children of divorce lived with the father or his family, and even after the death of the mother, only 59% remained with father or other paternal kin. Household income varied by family type and was a strong predictor of child height and weight. The children of deceased mothers moved between successive caregivers especially frequently, and were uniquely likely to have no schooling. The typology of Bangladeshi society as patrilocal obscures the extent to which matrilineal family support children's well-being.

**Keywords:** alloparents; grandmother; death of a parent; divorce; Bangladesh; family laterality; childcare; kinship; human behavioral ecology; mother's brother



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## 1. Introduction

While many studies have focused on the effects of losing either a mother or a father on child outcomes, few have compared intact (two-parent and father away for migrant labor), mother-deceased, father-deceased, and divorced families in a single study. Substantial numbers of Bangladeshi children are being raised in each of these five family types, which are judged more or less approvingly or pejoratively by the larger society. By utilizing human behavioral ecology (HBE), the importance of the ecological conditions (post-marital residence patterns and family type) and cultural variation in parenting allows for more refined and focused hypotheses and interpretations of the data. By the inclusion of all five family types, attention is drawn to how family disruption type affects children, and it is anticipated that these may be mediated by differences in the contributions of alloparents (non-parental caregivers).

### 1.1. Theoretical Foundation

Human beings have been called “cooperative breeders” because parents rely heavily on alloparental support in the form of both direct childcare and material investments (Hrdy 2009, p. 30). Alloparents are usually relatives, presumably because only kin gain indirect fitness from costly contributions (Emlen 1995). But which relatives provide alloparental investment, under what circumstances, and with what effects on children? These questions have inspired considerable discussion (Davis and Daly 1997; Emlen 1995; Hrdy

2009). Common hypotheses are that closer relatives and mother's relatives will invest more than distal and paternal kin because of differential indirect fitness payoffs, and hence will promote better outcomes for children (Hrdy 2009; Konner 2010; Perry and Daly 2017). These evolution-minded hypotheses provide broad direction when considering universal patterns of alloparental caregiving, are open to empirical testing, and have garnered support in various societies (Daly and Perry 2017). HBE entails a focus on variation "... within and between populations, as the result of adaptive adjustment of parenting behavior to particular ecological conditions (phenotypic plasticity), as well as cultural variation in parenting behavior (which may or may not be adaptive)" (Sear 2016, p. 98). The purpose of this research is to understand the association between social environment in rural Bangladesh and alloparental caregiving.

### 1.2. Alloparental Caregiving

Alloparental care and investment vary substantially across cultures (Gibson and Mace 2005; Hrdy 2009; Konner 2010). In a review of hunter-gatherer practices, for example, Konner (2005) notes that direct allomaternal care ranges from almost none in the Ache (Hill and Hurtado 1996) to a very high level in the Efe where 18-week-olds spend 60% of their time in physical contact with people other than their mothers (Ivey 2000). Factors that apparently influence alloparental caregiving include demographic variables (Hewlett 1991; Hewlett and Lamb 2005; Turke 1988), changing subsistence patterns (Hewlett and Lamb 2005; Hirasawa 2005; Perry 2017a; Valeggia 2009) and other ecological variables (Hames 1988; Hill and Hurtado 1996; Hurtado et al. 1992; Starkweather 2017).

Alloparental contributions become crucial after parental death or divorce, and who steps forward to provide alloparental care may vary depending on the reasons for the parent's absence. In some situations, extended families reduce or terminate their involvement with the child (Biblarz and Gottainer 2000; Drew and Smith 1999; Westphal et al. 2015), a phenomenon that has been insufficiently studied outside of Western democracies (Lawson et al. 2017; Shenk et al. 2013). Comparing alloparental assistance in normative two-parent families vs. those in which parents are absent for different reasons (mother's or father's death or parental divorce) is important for understanding how and why children's needs are, or are not, being met.

A substantial body of research has focused on alloparental assistance to intact mother-father families residing neolocally (that is, apart from either spouse's family of origin), especially in Western democracies (Coall and Hertwig 2010; Tanskanen and Danielsbacka 2018). In general, the presence of maternal grandmothers is associated with positive child outcomes, which is also true in modernizing societies (Huber and Breedlove 2007; Nenko et al. 2020; Sear and Mace 2008; Strassmann and Garrard 2011), and may be especially important for children in non-intact families. Modernizing in this context means "... to encapsulate any of the various processes by which self-sufficient, subsistence-based, small-scale (i.e., "traditional") societies transition away from low-intensity and relatively localized means of living" (Mattison and Sear 2016, p. 337).

In modernizing societies, post-marital residence is often patrilocal (i.e., the bride moves to her husband's family; Murdock and Wilson 1972; Korotayev 2003), which constrains children's access to matrilineal kin (Munro et al. 2015). Studies of alloparenting in normatively patrilocal societies indicate that although father's kin play a substantial role, which is unsurprising given their proximity and the cultural emphasis on patrilineage that usually accompanies patrilocality, mother's kin also remain heavily involved (Mulder 2007; Gibson and Mace 2005; Huber and Breedlove 2007; Judd 1989; Perry 2017a; Daly and Perry 2017; Scelza 2011; Scelza and Bird 2008). Little of this research has explicitly contrasted intact versus non-intact families. More research in normatively patrilocal societies, in which a very large proportion of the world's children now reside, is needed.

In modernizing societies, the contributions that would customarily have come from a missing mother or father may or may not be provided by others, with important consequences for child development and well-being. Even in the Western democracies, children

of divorce and partial or full orphans suffer deficits in education, and in mental and physical health (Amato and Anthony 2014; Cerel et al. 2000; Gertler et al. 2004; Raley and Sweeney 2020; Wallerstein and Rosenthal 2013), and in low-income nations, they are at risk for poor physical development, health, and educational outcomes, and higher mortality (Lawson et al. 2017; Mwangome et al. 2012; Ronsmans et al. 2010; Sands et al. 2017; Shenk et al. 2013). Does the availability and participation of particular alloparents mitigate these negative outcomes?

### 1.3. Study Context

The Bangladeshi population is approximately 90% Muslim and 8.5% Hindu, with the remaining population being Christian, Buddhist and other small minority groups (Bangladesh Bureau of Statistics 2014). It is estimated that 1.8% of the population is “indigenous”, representing 54 groups with approximately 80% of those identified as indigenous living in the Chittagong Hill Tracts (IWGIA 2021), a significant distance from Matlab. There is a small population of Shodagor that live in the Matlab area (the site of this research), consisting of fewer than 200 people and although they are culturally different from the dominant population, they identify as Muslim, are Bangla speaking, and are not considered indigenous (Starkweather 2017).

Matlab, Bangladesh, with a population of approximately 230,000, is an excellent setting for investigating alloparental investment in a patrilocal society. Substantial research has been conducted there for over 50 years, under the auspices of the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b). Predominantly rural and approximately 90% Muslim and 10% Hindu, Matlab continues to be described as normatively patrilocal, with extended families occupying joint family compounds, or *baris*, in which a senior couple resides with their sons, daughters-in-law, and grandchildren. Women are expected to observe *purdah* (their seclusion, with chaperoning in their public appearances) beginning before puberty (Amin 1998; Cain et al. 1979; Feldman and McCarthy 1983; Jahan 1973; Lata et al. 2021; Rao 2012). These accounts suggest that married women have little contact with their families of origin and rely on their in-laws for support, but there are grounds for thinking this an overstatement, most notably because married women often return to their natal homes to give birth and may stay for many months (Edhborgh et al. 2015; Perry 2017b).

According to icddr,b census data, most children reside in families with both parents present or with the father absent as a migrant laborer. However, many other children have lost one or both parents to death or divorce (icddr,b 2015), permitting comparisons across living arrangements with respect to who helps and how children fare in the various forms of parental absence. The present study focuses on who provides primary care and alloparental assistance (their relationship to the child, including family laterality, and whether they provide direct care or material support) in intact and non-intact families, as well as on associated child outcomes (height, weight, and educational attainment). Five family types are distinguished: both parents present, migrant labor families where the father works elsewhere, and those in which the focal children’s mother is deceased, father is deceased, or parents are divorced.

Perry (2017a) has described alloparental caregiving and its consequences in intact Matlab families. Despite obstacles, mothers derived substantial alloparental assistance from their natal families, and made considerable effort to maintain these relationships (Perry 2017b). Most mothers of young children dwelt in their in-laws’ *baris*, but over 40% did not (12% lived matrilocally and 35% neolocally); maternal grandmothers provided more childcare than expected on the basis of *bari* co-residence, and paternal grandmothers provided less; and material investments in children from outside the immediate household came primarily from maternal relatives, especially mothers’ brothers (Perry 2017a), in keeping with a widespread matrilineal bias in alloparental investment (Perry and Daly 2017). Here, I extend the analysis to include non-intact families, and assess whether this matrilineal bias is seen in these higher-needs circumstances as well.

In Bangladesh, the co-residing married couple is normative, but father absence due to migrant labor evokes no negative reaction (Bhuiya et al. 2005; Rahman 2010) and is instead viewed positively due to its association with higher income (Shenk et al. 2013; Schoen 2019). Having a parent absent due to death or divorce, by contrast, is viewed negatively (Alam et al. 2000; Munro et al. 2015; Rahman et al. 2013). Women are commonly blamed for causing divorce (icddr,b 2015; Munro et al. 2015), which is characterized as the most “detestable” of allowable situations (Bangladesh Laws 2016), and widows interviewed for this study reported that they were often blamed even for their husbands’ deaths. Widows and divorcees are seen as burdens on extended family and may be treated with outright hostility (Jahan 1973; Lewis 1993; Munro et al. 2015), leaving them and their children vulnerable.

Divorced or widowed men may also be stigmatized, but to a lesser degree than women (Alam et al. 2000; Amin 1998; Rahman et al. 2013), which reflects both double standards (Amin 1998; Feldman and McCarthy 1983) and men’s ability to maintain their wage earning role and avoid becoming financial burdens, which have not typically been options for rural widows and divorcees (Jahan 1973; Lewis 1993).

#### 1.4. Hypotheses

Negative attitudes toward widows, widowers and divorcees may affect whether alloparental caregivers come forward, and if so who. I hypothesize that, in general, secondary caregivers will vary by family type. This leads to additional hypotheses addressing the ways in which family type will be associated with alloparental support. Children of divorce may be especially disadvantaged in this regard, because of the stigma associated with divorce. Alternatively, children whose mothers have died may be uniquely disadvantaged because maternal death (1) takes away their most important caregiver (Hrdy 2009; Konner 2010; Strassmann 2011), and (2) breaks links with maternal relatives.

When fathers cannot provide for the needs of their children, it is normative that the father’s male kin should provide for his wife and child(ren) (Amin 1998; Feldman and McCarthy 1983; Gardner and Ahmed 2006; Indra and Buchignani 1997; Munro et al. 2015), which would result in mother’s family providing less alloparental aid than father’s family after parental death or divorce. An alternative hypothesis, however, based on the importance of nepotism and mother’s family in evolutionary interpretations of alloparenting (Perry and Daly 2017), is that matrilineal kin, especially maternal grandmothers, will be more involved than father’s kin and will buffer the effects of parental death or divorce. In a patrilocal society, comparing children in intact families to those with a parent absent due to divorce or death can illuminate effects of culture and nepotism on alloparental investment and the subsequent effects on children. This more nuanced understanding of alloparental care has relevance for developing theory about alloparental caregiving and human nepotism, as well as for policy and applied work.

## 2. Methods

### 2.1. Rationale for Interview Methodology

Prior anthropological research on alloparenting has used two methods, each of which has strengths and weaknesses. One entails demographic analyses of large census-based and historical databases (Beise 2005; Sear and Mace 2008, 2009; Volland and Beise 2005) which permit robust estimates of the correlates of child mortality and other outcomes (Clarke and Low 2001), but seldom provide evidence on actual behavior. Thus, an apparent “grandmother effect”, for example, may or may not have anything to do with alloparenting (Nettle 2012; Perry 2017a; Strassmann and Garrard 2011). The second approach entails intensive observation (Crittenden and Marlowe 2008; Meehan 2005; Nettle 2012), which provides direct evidence on the magnitude of alloparenting, but is necessarily constrained by limited sample sizes and statistical power. This study uses an intermediate approach, namely the collection of interview data specifically targeting alloparental contributions,

supplemented by census-based evidence on family histories, plus direct anthropometric measurements of the dependent children.

## 2.2. Sampling Strategy

Matlab was chosen as the field site because of its patrilocal and patrilineal social structure, high-quality census data, and 50-year history of research. The icddr,b has been collecting information on every household in Matlab since 1964, recording each birth, death, in-migration, out-migration, marriage, and divorce, at frequent intervals (every two months at the time of this research). The resultant database permits researchers to draw random samples of various types from across the jurisdiction. For the present study, icddr,b staff initially drew five random samples, each consisting of 100 families, representing the five family types: “two parents present”, “father migrant laborer”, “mother deceased”, “father deceased”, and “divorced”. These situations sometimes resulted in children having non-parental primary caregivers, with the remaining parent not co-residing with the child. These were important scenarios to track, because change in primary caregiver from parent to alloparent was one area of interest in this study. Selection criteria included that there be one or more living children less than 13 years old in order to ensure they were dependent on parental caregiving and resources. It would be extremely unlikely that children of these ages would be married or engage in paid labor. The primary caregiver had to be at least 19.

Twelve open-ended interviews (2 or 3 from each family type) were initially conducted with the help of a local research assistant/translator, eliciting respondents’ experiences, expectations, and conceptions of local norms concerning childcare and alloparental assistance. Insights derived from these interviews informed the development of the structured interview, which provided the data presented here. The open-ended interviews were not analyzed systematically, but along with field notes made during the structured interviews, they provide additional ethnographic detail.

Available primary caregivers from the five random samples were then approached for interview, with as many structured interviews completed as was possible within the time available, March through May 2014. Interviewees were not forewarned of the researcher’s visit (which would not generally have been possible), but were simply approached at their residence after the researcher had travelled to the locale provided by the icddr,b database.

One hundred and ninety respondents participated in the structured interviews. Because eighteen respondents had children in more than one family type, there were a total of 208 cases (where a “case” refers to a sibling group in the same family circumstance): 65 two-parent families, 53 migrant labor families, 30 mother-deceased families, 32 father-deceased families, and 28 divorce families. Information was obtained on all children under the age of 13 for whom the respondent was responsible, making a total of 323 dependent children in the structured interview database.

## 2.3. Interview Content

The structured interviews consisted of standardized questions and required approximately an hour to complete. Data from the census books in the icddr,b Matlab field office were combined with the structured interview data to supplement information on child residence and primary caregiver changes, and to validate birth dates and other interview data. Questions elicited basic demographic information, family socioeconomic status, co-*bari* and co-household residence, who served as childcare and resource providers, and education level of parents and children. For the analyses presented here, crucial questions included the following:

Whose *bari* is this (i.e., that in which the interviewee and children resided)?

What is your relationship to the children you are raising?

Who is their most common caregiver (other than you)?

Are there people who give your family gifts, payments for school, clothing, payments for medical expenses, etc.?

Follow-up questions detailed the resources provided, who provided them, and the recipients.

Interviewees were asked to estimate their household income in Bangladeshi Taka per month (see Perry 2017a). “Adjusted household income” was then computed by dividing by the square root of the number of household residents, a standard method for adjusting household income because costs do not increase linearly with family size (Johnson et al. 2005). *Bari* residence was categorized as “paternal” if the *bari* belonged to the child’s father’s kin, “maternal” if it belonged to the mother’s kin, and “neolocal” if it belonged to relatives of neither or had been established by the couple themselves.

Finally, data were collected on child outcomes. The height and weight of each dependent child available at the time of interview were measured using a tape measure and scale. Height-for-age and weight-for-height were then converted to age- and sex-specific standard scores, according to World Health Organization norms (WHO 2015), and it is these standardized scores that are analyzed here. Children who are 2 standard deviations below the world mean for weight-for-age or height-for-height are considered wasted (Victora et al. 2008) or stunted, and are at higher risk for many negative physical and developmental outcomes (de Onis et al. 2012a, 2012b). A final outcome measure, applicable only to children 6 years of age or older, was educational attainment: the difference between the actual grade level and the normative grade for a child of that age.

This study’s focus on non-parental caregiving, including children not in the primary care of a parent, raises the questions of adoption, fosterage, custody and guardianship. These terms have significant cultural complexity because of their legal meanings and connection to religious rules in Bangladesh (Khyum Tithila 2020). For instance, under Bangladeshi family law, Muslims cannot legally adopt a child, but they could become a legal guardian or gain custody of a child, with clear restrictions on the child being eligible for inheritance. Hindus can legally adopt a son, but not a daughter, and an adoptive son has equal right to inheritance as a son by birth (Government of the People’s Republic of Bangladesh 2013). Alternatively, Muslim or Hindu adults can obtain custody of a child without adopting or fostering a child (Guardians and Wards Act 1890). All of these terms are typically assumed to focus on children unrelated to primary caregivers. In situations where extended family are the primary caregiver of a child, no respondents reported legal changes in response to changes in the child’s caregiver, and legal services would have been beyond the financial capacity of essentially all families in this study. When families report changes in primary caregiver to a family member, they would not involve legal changes. Legal adoption could have occurred with the children who were reported to be “adopted” out of the area, but none of the families specifically identified this arrangement and it is likely that they were not using the term as a legal term, but as a description of a permanent move of a child to an un-related primary caregiver family.

#### 2.4. Representativeness of the Samples

The initial five 100-family samples were randomly selected, and should have been representative of those five family types. Which families were approached for interview entailed no systematic choice criteria other than attempting to distribute the interviews throughout the study area in order to include families living both close to villages and in more remote areas. Degrees of remoteness are difficult to define in this area because ease of access to residences varies by season, with some *baris* being hard to reach in the dry season being far more accessible by boat in the wet season, whereas other *baris* where they are more accessible in the dry season, because of proximity to roads. The best approximation that the local research assistants could identify was village versus non-village residence. Only two potential respondents turned down the request for interview, so refusals should not have biased the results. Two interviews had to be ended early and a few respondents did not answer all questions, accounting for the occasional “unknown” responses in the data presented.

Interviewees representing the five family types were not always members of the original five random samples for several reasons. First, it was discovered only after interviews began that although the “divorce” sample was intended to capture children of divorced parents, it had been drawn such that many were actually intact two-parent or father migrant laborer families in which the mother had had an earlier, brief, childless marriage. Moreover, whereas mothers in intact families were almost always found at home, primary caregivers in the three non-intact family types were not. Thus, if the researcher travelled to a rural *bari* only to discover that the targeted interviewee was not at home, or had moved, another family in the same *bari* was substituted. This type of substitution is an accepted methodology (e.g., Fraser Schoen 2014) and is unlikely to have introduced bias, because families within *baris* are apt to share family and neighborhood attributes. Finally, the circumstances of some targeted interviewees had changed such that they belonged to a different family type than when the sample was drawn (e.g., if the husband in a “two-parent” family had recently departed to be a migrant laborer). Others met the criteria for two groups (e.g., a woman caring for a stepchild and her own child of the present union, or a grandmother caring for her deceased daughter’s infant and a dependent child of her own); when such women (n = 18) provided answers about both children (or sets of children) under their care, the relevant responses were then recorded separately under the two relevant family types. Whether any of these complications compromised the representativeness of the final five samples cannot be determined.

### 2.5. Analytic Strategy

Descriptive data (frequencies and percentages) are reported in Table 1 and Figures 1 and 2. Two types of analysis are then presented to assess the significance of differences among the five family types: (1) simple univariate between-group comparisons using Fisher Exact tests,  $\chi^2$  tests and ANOVA (with Scheffé post hoc comparisons), as appropriate, and (2) multivariate regressions to assess between-group contrasts in child height, weight, and education, net of the potential confounding effects of between-group differences in child age, child sex, household size, and adjusted household income.

Household income was adjusted for household size because the cost of additional family members does not increase in a linear manner. Household income could be a pathway by which living arrangements influence child well-being, so regressions were completed with adjusted income both included and omitted. The inclusion or exclusion of income did not affect the impacts of other variables in any analyses. Results for the regressions, which include adjusted household income are shown, because they have the higher  $R^2$ .

Because many children had siblings who are also in the dataset, there is a risk that the data within sibling sets will not be independent. There are, however, only 1.7 dependent children per respondent, on average, and with such small group sizes, Clarke (2008) and McNeish (2014) recommend a non-clustered regression to avoid overestimating the group-level variance components. Only non-clustered regression results are therefore presented, but additional analyses, producing nearly identical results, were conducted using a method (STATA’s “vce” command) that clusters children into sibling groups.

### 2.6. Ethics Approvals

This “minimal risk” human participant study was approved in three ethics review processes: the home institution, the hosting NGO and its associated university in Bangladesh. The Institutional Review Board at the University of Missouri approved the ethics application in January 2014 (Project #1208454), the icddr,b’s Research Review Committee approved the ethics application in February 2014 (PR14018), and the Ethics Review Board at the National University of Bangladesh approved the ethics application in March 2014 (PR14018).

### 3. Results

#### 3.1. Attributes of the Five Family Types

Children of non-intact families lived in poorer homes, on average, than children of intact marriages. The mean adjusted household income of migrant labor families was 85K BTK, significantly higher than that of every other family type (ANOVA and Scheffé pairwise tests). For two-parent families, the mean was 58K BTK, for mother-deceased 46K BTK, divorced 34K BTK, and widowed 33K BTK. Because of substantial within-group variability, however, there were no significant pairwise differences among these latter four family types.

Child's age differed significantly across the family types ( $F_{4,308} = 12.16, p < 0.0001$ ). Of note is the fact that children of divorce were younger (mean 6.7 years) than those of widows (9.4 years) or deceased mothers (8.5 years), partly because children were younger at the time of parental divorce or estrangement (mean 2.8 years) than at the time of a parent's death (mean age 4.2 years in both father-deceased and mother-deceased groups). A child of divorce was also much more likely to be an only child: 19 of 31 for whom the information was available (61%) had no full siblings, compared to just 5% of the children of widows and 19% of those with deceased mothers ( $p < 0.0001$  by  $\chi^2$  test).

There were no statistically significant differences in child sex ratio across family types, although intact families had a slight preponderance of boys (57% male), and non-intact families a slight preponderance of girls (47% male). Children of widows had 2.6 full siblings on average (range 0–7), those of deceased mothers had 1.4 (range 0–5), and children of divorce 0.8 (range 0–5). Sibling sets are relatively infrequent in the data for disrupted families, however, for three reasons: siblings of focal children were often older than the inclusion criterion, were often dispersed across households, and were sometimes deceased. Thus, the 41 children of widows represent 32 sibling sets, the 44 children of deceased mothers represent 30, and the 32 children of divorce represent 28. Sixteen children had one or more deceased siblings, with no significant differences across family types, but two widows stood out by having had three and four children die, respectively, after their husbands' deaths.

#### 3.2. Primary Caregivers

Table 1 presents, in part, the total number of children and their gender. In part A, *bari* types are summarized. The numbers of children in each family type and their primary caregivers' relationships to them are provided in part B. Children of intact marriages were almost invariably cared for by their mothers, as were 85% of the children of widows.

Among children of divorce, 50% were in the care of their mothers, and another 25% had been left with maternal grandmothers when their mothers remarried or moved to the city as wage laborers. The remaining 25% dwelt with father's family. There was no evident tendency for custody after divorce to differ according to children's sex or age at the time of divorce: the 24 in maternal family care consisted of 14 girls and 10 boys, with a mean age at divorce of 2.6 years, whereas the 8 in paternal family care were 5 girls and 3 boys with a mean age at divorce of 2.8 years. Fifty percent of the children of divorce and 15% of the children of widows were being cared for by someone other than their mothers, compared to 3% of children in intact families. Both non-intact family types differ significantly from intact families in this regard ( $p < 0.01$ , Fisher Exact Tests).

Children of deceased mothers were cared for by the widest array of relatives, with stepmothers the most common primary caregiver category (Table 1). In addition to the 15 children of deceased mothers and the 2 children of divorce who were in the care of stepmothers at the time of interview, several others had dwelt with stepmothers temporarily and had moved to grandmaternal care after the stepmother produced a child of the new marriage.

Table 1. Descriptive statistics of the sample by the five family types.

	Two Parents Present		Father Migrant Laborer		Father Deceased		Mother Deceased		Parents Divorced	
Total n of children	105		100		41		44		32	
	N	%	N	%	N	%	N	%	N	%
Male children	60	57	56	56	22	54	19	43	13	41
A. Bari residence of child										
Patrilocal	51	48	47	47	20	49	23	52	8	25
Matrilocal	9	9	23	23	2	5	8	18	18	56
Neolocal	44	42	27	27	14	34	7	16	6	19
Madrasa <sup>1</sup>	1	1	2	2	5	12	0	0	0	0
Adopted out	0	0	0	0	0	0	5	11	0	0
Unknown	0	0	1	1	0	0	1	2	0	0
B. Frequencies at which different relatives served as primary caregivers										
Mother	103	98	96	96	35	85	0	0	16	50
Father	0	0	2	2	0	0	1	2	0	0
Older sister	0	0	0	0	0	0	3	7	0	0
Maternal grandmother	1	1	0	0	1	2	8	18	8	25
Mother's sister	0	0	0	0	0	0	1	2	0	0
Paternal grandmother	0	0	0	0	0	0	7	16	4	13
Father's sister	0	0	0	0	0	0	1	2	1	3
Father's brother's wife	0	0	0	0	0	0	2	5	1	3
Stepmother	0	0	0	0	0	0	15	34	2	6
Madrasa <sup>1</sup>	1	1	2	2	5	12	1	2	0	0
Adopted out	0	0	0	0	0	0	5	11	0	0
C. Frequencies of nomination as child's secondary caregiver, by laterality and family type										
Paternal relative <sup>2</sup>	50	48	45	45	14	34	20	45	9	28
Maternal relative <sup>3</sup>	12	11	27	27	3	7	8	18	19	59
Sibling or sibling's wife	25	24	20	20	17	42	4	9	2	6
Non-relative	13	12	5	5	3	7	6	14	0	0
No-one	3	3	0	0	0	0	0	0	0	0
Not known	2	2	3	3	4	10	6	14	2	6
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Child age (years) <sup>4</sup>	5.99	0.34	5.91	0.38	9.41	0.32	8.47	0.41	6.58	0.63
Adjusted household income (1000s of taka) <sup>5</sup>	58.24	5.39	85.37	7.23	34.94	5.06	47.34	5.28	35.84	4.68

<sup>1</sup> *Madrassas* are residential religious schools. The two *madrassa*-dwelling children in the father migrant laborer group were siblings whose father taught at the *madrassa* that they attended, outside the Matlab area; this family considered the paternal *bari* to be their home and the *madrassa* a temporary residence for schooling only. <sup>2</sup> Paternal cases include 11 in which the father was the secondary caregiver: 7 in the two-parents group and 4 in the mother-deceased group. <sup>3</sup> Maternal cases include two in which the mother was the secondary caregiver: one in the two-parents group and one in the divorce group. <sup>4</sup> Child age differs significantly across the five groups:  $F_{4,316} = 12.39, p < 0.0001$ . <sup>5</sup> Adjusted household income differs significantly across the five groups:  $F_{4,293} = 9.14, p < 0.0001$ . According to Scheffé post hoc pairwise comparisons, migrant labor families had higher incomes ( $p < 0.02$ ) than each of the other four groups, and there were no other significant differences.

### 3.3. Secondary Caregivers

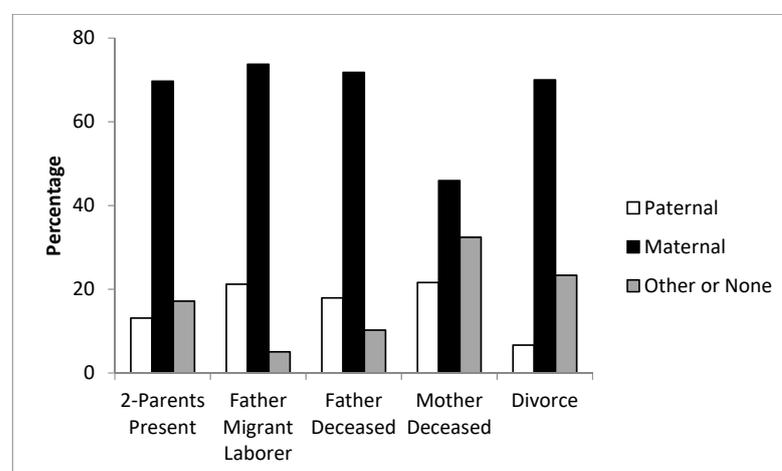
Interviewees were asked to identify each child's "most common caregiver" other than the primary caregiver (hereafter referred to as the secondary caregiver). Section C of Table 1 summarizes their responses. The paternal grandmother was named as secondary caregiver 71 times and the maternal grandmother 45, but these frequencies were notably different across the family types. For 93 of the 205 children of intact marriages (45%), a grandmother was the secondary caregiver (60 paternal, 33 maternal), but this was true for only 23 of the 118 children of disrupted marriages (19%; 11 paternal, 12 maternal);  $\chi^2_{1\text{ df}} = 20.7, p < 0.001$ .

Surprisingly, none of the 35 children in the primary care of their widowed mothers had the maternal grandmother as secondary caregiver. This reflects the fact that widows, unlike divorcées, rarely returned to the natal *bari* (Table 1, Section A). If we compare children of widows to those of divorcées with respect to *bari* residence (paternal, maternal, or neolocal), the difference is highly significant ( $\chi^2_{2\text{ df}} = 21.0, p < 0.0001$ ).

Why did widows and their children often remain in the *bari* of the deceased husband/father? A partial answer is that the widows were significantly older (mean age 41.2 years) than the divorcées (35.1 years;  $p = 0.002$  by t-test) and relatively unlikely to have mothers to whom they *could* return; 41% of widows reportedly had deceased mothers, versus 7% of divorcées (although it must be noted that for children of divorce, interviewed caregivers from the father's family did not always know whether the child's maternal grandmother was alive). Perhaps more important, interviewees maintained that remaining in the patrilocal *bari* was necessary to protect their children's entitlements to inheritance from paternal kin, despite the disadvantage of scant support from their late husband's relatives.

### 3.4. Material Assistance

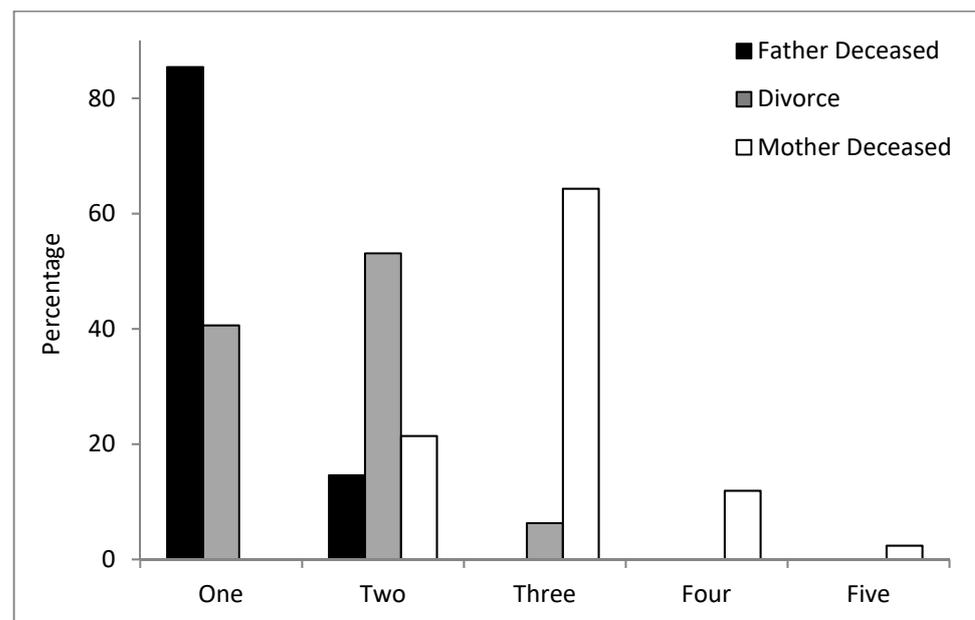
In addition to the child's secondary caregiver, interviewees were also asked who, other than members of the immediate household, provided material support such as food, clothing, and school fees or other financial assistance. Immediate household refers to the individual house within a *bari* in which the child resided. These were reportedly the property of the father residing in the household or his male heirs if he was deceased. Access to and control of the house within a *bari* is discussed further in the discussion. Strikingly, within every family type, mother's relatives were the most frequently named contributors (Figure 1) and the majority of those helpful maternal relatives were mothers' brothers. The prevalence of assistance from mother's family cannot be attributed to proximity; in fact, children more often dwelt in close proximity to father's kin than to mother's in all family types except for divorce families (Table 1, Section A), and the ratio of mother's kin to father's kin as resource providers (Figure 1) exceeds the ratio of maternal over paternal *bari* residence (Table 1, Section A) within each family type.



**Figure 1.** Percentage of paternal kin, maternal kin, and others who were nominated as a child's primary material resource provider (other than household members), by family type.

### 3.5. Attributes and Experiences of Children in Non-Intact Families

An important consequence of parental death or divorce is that children often change primary caregivers, sometimes repeatedly. Figure 2 portrays the numbers of primary caregivers that the children of non-intact marriages had experienced by the time of interview. (The number of moves between caregivers or households was often greater, as motherless children in particular moved back and forth between two caregivers.) Most children of widows experienced continuity of maternal care, and of residence as well. The experiences of children in the other two disrupted family situations were very different. Children of divorce either ceased to be cared for by their mothers (Table 1, Section B) or moved with their mothers to a different *bari* and a new social milieu. Children of deceased mothers experienced the most disruption, with primary care by a grandmother or stepmother often serving only as a stop gap. Each of these three groups differs significantly from the other two in the numbers of caregivers ( $p < 0.001$  by Scheffé tests). Placing children with anyone other than extended family was rare, but five infants were adopted out at the death of their mothers, and a further five children whose mothers were poor widows were living in *madrasas* (see Table 1, Section A); with one exception, these children were not available to be measured. In the two-parent and migrant labor families, 98% and 96% respectively had only the mother as a primary caregiver, and no child had more than two.



**Figure 2.** Percentage distribution of the number of primary caregivers that a child had experienced, by non-intact family type.

### 3.6. Maintenance of Contact with the Child's Maternal and Paternal Relatives

When marriages are disrupted by death or divorce, children may lose contact with kin. In the present study, the maintenance of contact with grandparents, aunts and uncles was assessed by asking primary caregivers how often they visited each such relative who dwelt elsewhere than in the same *bari*. For purposes of analysis, contact with maternal or paternal relatives other than the primary caregiver was considered to be ongoing if such a relative co-resided with the child in the same household or *bari*, had been visited by the interviewed primary caregiver within the past year, or was named as either the secondary caregiver or the primary provider of material resources. Figure 3 presents the percentages of children who maintained contact with maternal and paternal family.

Since widows tended to remain in their marital homes, often in the paternal *bari*, while deriving material assistance from natal kin, especially their brothers, it is unsurprising that children of widows usually maintained contact with kin of both parents; even those living

neolocally usually maintained contact with both maternal and paternal family. By contrast, almost two-thirds of the children of divorce and of deceased mothers had lost contact with one side. Eight of 32 children of divorce dwelt in the paternal *bari* and thus maintained contact with paternal relatives; 4 of those 8 were no longer in contact with maternal kin. Paternal family contact had ceased for 12 of 18 children of divorce living in the maternal *bari* and for 5 of 6 living neolocally. In sum, 17 of 24 (71%) children of divorce not residing patrilocally had lost contact with paternal relatives, whereas just 4 of 14 (29%) not residing matrilocally had lost contact with maternal relatives (2-tailed  $p = 0.02$ , by Fisher Exact Test). Results for children of deceased mothers were similar, except that neolocal residence predicted ongoing contact with both sides.

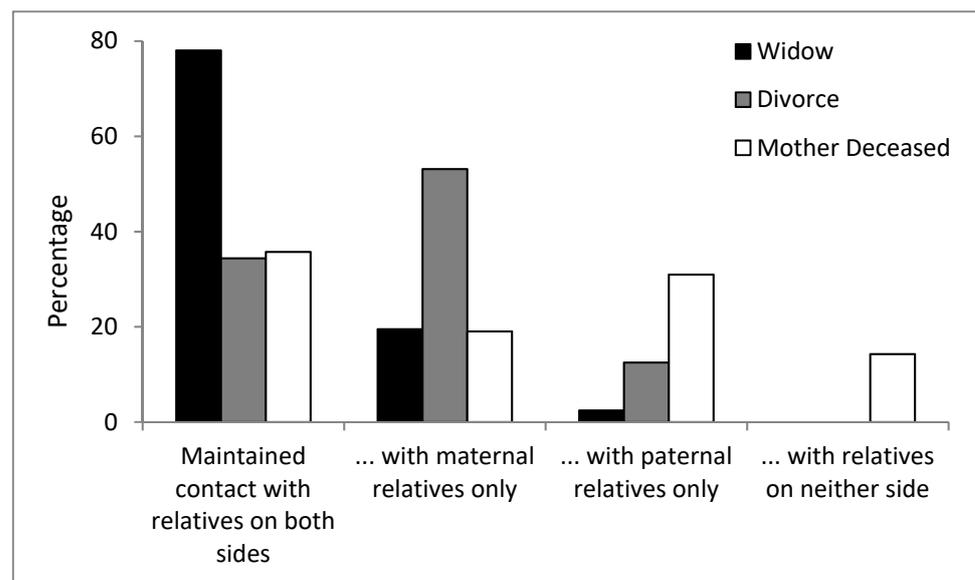


Figure 3. Maintenance of contact with maternal and paternal relatives in non-intact families.

### 3.7. Child Well-Being

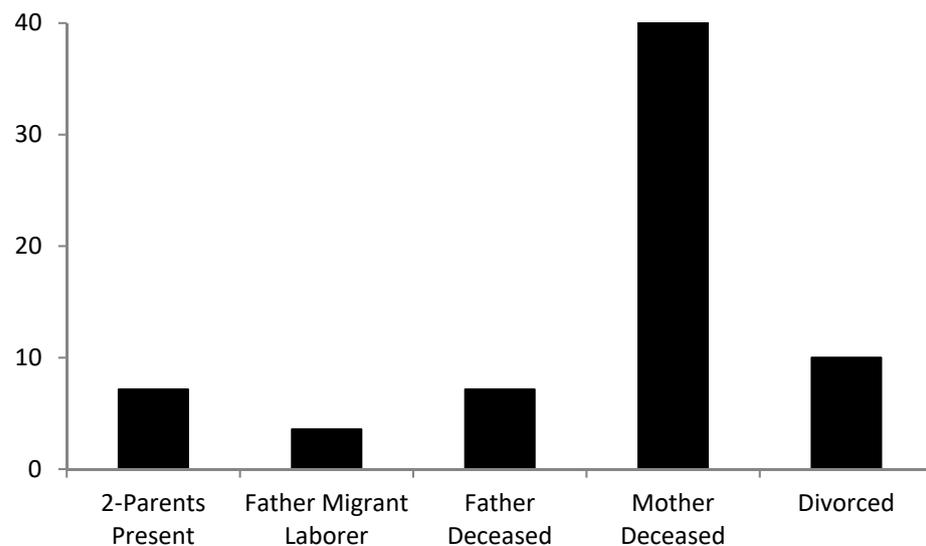
Matlab’s children are short and underweight (icddr,b 2015; Perry 2017a). Table 2 presents the WHO-normed standard mean heights-for-age and weights-for-height of children in the five family types. (WHO norms are available for height up to 120 cm tall and weight only up to the age of 10 years.) In regards to height-for-age, with the exception of the mother-deceased group, children in non-intact families did not appear to fare worse than those in intact families. For weight-for-height, children in non-intact families appeared to fare marginally worse than intact families, although this was not significant. In terms of the net effects of household income, there were no statistically significant pairwise differences among family types in residual heights and weights (Scheffé tests of pairwise comparisons from ANOVA; all  $p > 0.3$ ). There were no significant differences between the sexes.

Table 2. Mean child height-for-age and weight-for-height, expressed as WHO-normed standard scores (see text), by family type.

	Two Parents Present	Father Migrant Laborer	Father Deceased	Mother Deceased	Divorced
Height-for-age	−1.3 (0.1, 72)	−1.3 (0.2, 59)	−1.2 (0.2, 29)	−1.7 (0.3, 18)	−1.3 (0.2, 20)
Weight-for-height	−0.7 (0.2, 51)	−0.7 (0.2, 37)	−1.3 (0.3, 7)	−1.1 (0.4, 9)	−0.9 (0.2, 13)

Standard error of the mean and number of measured children in each group are in parentheses.

A further outcome measure is child education: the difference between years of completed education and expected education for age. Children of intact marriages were on average 1.3 years behind in school, children of divorce 1.6, children of widows 1.9, and children of deceased mothers 2.8. Of course, the older a child, the farther behind one can be, so in order to compare between family types, child age must be controlled. Net of the effect of age, children of deceased mothers were significantly farther behind than all other family types except for children of divorce (ANOVA and Scheffé pairwise tests, conducted on age-controlled residuals), mainly because they were exceptionally likely to be kept out of school altogether: 42% of children over 7 years of age with deceased mothers had no education at all (Figure 4).



**Figure 4.** Percentage of school age children with no schooling, by family type.

In addition to family type, other variables that might affect child outcomes include the child's age and sex, the total number of household residents, and household income. Table 3 presents the results of multiple regressions conducted to assess the simultaneous impacts of these variables in conjunction with family type. As noted in the Methods, these analyses were conducted using both a non-clustered regression and one that clusters the children into sibling groups, with minimal differences in results. Only the non-clustered results are presented, following the recommendations of Clarke (2008) and McNeish (2014). The clustered and non-clustered methods yield identical coefficients and r-squared values, but different standard errors. The only difference in the identification of significant predictors was that a negative effect of having a deceased father on child height was significant ( $p = 0.05$ ) in the clustered analysis, but not in the non-clustered analysis ( $p = 0.07$ ).

Household income had a strong positive effect on height-for-age and weight-for-height, but not on educational attainment. In addition, children's weight-for-height was negatively affected by the total number of persons in the home. Children in divorced and father-deceased families suffered no substantial negative effects with income controlled. Children of deceased mothers, by contrast, had significantly less education than those in intact families. (Shortfalls in educational attainment were strongly affected by age, but this "effect" is trivial since the maximum possible shortfall increases with age.) It is noteworthy that there were no significant sex differences in any of the outcome measures, nor any sex by income effects in additional regressions (not shown).

At the suggestion of a reviewer, regressions were also run with adjusted household income removed, with no change to what results were and were not significant. There was a substantial increase in  $R^2$  with the inclusion of adjusted household income, so this is the regression presented. Adjusted Household Income is the key factor in height-for-age and weight-for-height for the three non-intact family types.

**Table 3.** Multiple regression models predicting child height-for-age, weight-for-height and education on the basis of age, sex, family type, and household attributes.

	Height (SDs from WHO Norm for Child Age and Sex)				Weight (SDs from WHO Norm for Child Height and Sex)				Education (Departure, in Years, from Norm for Age)			
N children	193				116				125			
R <sup>2</sup> (Nagelkerke)	0.139				0.155				0.396			
F (model)	4.07				2.71				10.46			
<i>p</i>	<0.001				0.013				<0.001			
Predictor	$\beta$	95% CI	t	<i>p</i>	$\beta$	95% CI	t	<i>p</i>	$\beta$	95% CI	t	<i>p</i>
Child age (years)	−0.022	−0.078, 0.033	−0.80	0.424	<b>−0.115</b>	<b>−0.220, −0.010</b>	<b>−2.17</b>	<b>0.032</b>	<b>−0.387</b>	<b>−0.504, −0.271</b>	<b>−6.58</b>	<b>0.000</b>
Female child (ref: male)	−0.186	−0.514, 0.143	−1.12	0.266	0.059	−0.505, 0.388	0.26	0.794	0.155	−0.265, 0.575	0.73	0.467
N persons in household	−0.003	−0.101, 0.095	−0.05	0.956	<b>−0.174</b>	<b>−0.316, −0.033</b>	<b>−2.45</b>	<b>0.016</b>	−0.006	−0.133, 0.121	−0.09	0.925
Adjusted household income	<b>0.074</b>	<b>0.043, 0.106</b>	<b>4.70</b>	<b>0.000</b>	<b>0.057</b>	<b>0.016, 0.100</b>	<b>2.71</b>	<b>0.008</b>	0.034	−0.013, 0.814	1.45	0.150
Mother deceased <sup>1</sup>	−0.254	−0.829, 0.322	−0.87	0.386	−0.122	−0.973, 0.729	−0.28	0.777	<b>−1.18</b>	<b>−1.75, −0.610</b>	<b>−4.10</b>	<b>0.000</b>
Father deceased (widow) <sup>1</sup>	0.462	−0.040, 0.965	1.82	0.071	0.043	−0.1.02, 0.932	0.09	0.930	−0.256	−0.804, 0.292	−0.92	0.358
Parents divorced <sup>1</sup>	0.447	−0.116, 1.01	1.57	0.119	0.100	−0.626, 0.827	0.27	0.785	−0.203	−0.945, 0.539	−0.54	0.589

Bolded data indicate the results are statistically significant. <sup>1</sup> Reference group is all intact (two-parent and migrant labor) families. The comparison group for the three non-intact family dummies is all intact families (two parents present and father migrant laborer).

Additional regressions were run with the addition of a “Father Absent” dummy. This was not a significant predictor of any outcome variable, the coefficients were small, and including this additional dummy had no notable impact on magnitude (and none on sign or significance) of any other predictor variable.

#### 4. Discussion

Maternal family are important alloparental investors in normatively patrilocal rural Bangladesh (Perry 2017a). The present report shows that their role becomes even larger after parental death or divorce. Maternal kin appear to be more committed to the maintenance of contact with and investment in children after marital disruption than their paternal counterparts (Figures 1 and 4).

There is a history in anthropology of typologizing entire cultures (Murdock and Wilson 1972), but there is also a parallel history of efforts to describe and understand the variation within cultures (Fortes 1969). According to this study, the typological description of Bangladesh as a patrilocal society is a half-truth: a little over half of two-parent, migrant labor, father-deceased, and mother-deceased families resided patrilocally. This is fewer than summary statements about Bengali culture imply, nor could one infer from the literature that most children of divorce reside matrilocally or neolocally.

The overarching hypothesis that alloparental support will vary by family type was supported in regards to both direct care and resource provisioning. This initial hypothesis led to two sets of alternative hypotheses. One concerns the laterality of alloparents; would patrilateral relatives help more, in keeping with cultural expectations, or would the matrilateral bias found in most societies predominate? The latter hypothesis gains more support from the data, especially with respect to material investments that are relatively unconstrained by proximity. The second set of alternatives concerned whether children of divorce or maternal death would have the greater negative impact on child well-being. The data indicate that maternal death imposes greater costs on children, perhaps because maternal relatives are able to buffer the negative effects of divorce.

In historical studies based on parish records and similar sources, whether a grandmother co-resides or is even alive has often been treated, implicitly or explicitly, as a proxy for alloparental caregiving (e.g., Clarke and Low 2001; Lahdenperä et al. 2004; Volland and Beise 2005). In the study reported here, however, patrilocal residence was no guarantee of assistance from paternal relatives, especially for widowed mothers who often remained socially isolated in the family compounds of their late husbands. Despite having the highest proportion of patrilocal residence of any family type, widows had to rely more than any other group on nuclear family (their older children and their sons’ wives). In open-ended interviews, widows explained that they remained in the patrilocal *bari* to have somewhere to live and to protect their sons’ patrimony. One widow, for example, reported that she stayed for the sake of her son even though her in-laws gave her nothing but a little rice in exchange for cleaning their houses. The only secondary childcare she received occurred each weekend when she visited her mother and brother, who also provided her with clothing, household supplies, and food. Her own mother had taken over caring for her eldest daughter, and her brother paid for her son’s schooling. The data (Table 1) suggest that this case was not exceptional. It is striking that widows and their children received so little help from the children’s patrilateral relatives, despite cultural expectations that hold the patrilineage responsible (Jahan 1973; Cain et al. 1979; Hossain 2003).

The children of widows exhibited no conspicuous deficits in this study; indeed, their height-for-age was above average (Table 2). Direct childcare needs were being met within the household by older siblings and sisters-in-law, and material needs were being provided by matrilateral family. These supports apparently offset the lack of support from paternal family, protecting children of widows from negative growth effects. In this study, as in others (Case and Ardington 2006; Foster and Williamson 2000; Sear and Mace 2008), the death of a mother is more clearly detrimental to children than the death of a father or parental divorce,

notwithstanding the greater emphasis on father absence in much of the policy literature (Amato and Gilbreth 1999; Foster and Williamson 2000; Sarkadi et al. 2008).

Material support does not require proximity, and is therefore relatively unconstrained by *bari* residence. In all five family types, material support was provided mainly by mother's relatives, particularly mother's brothers, despite a purported cultural norm that the husband's family is primarily responsible (Cain et al. 1979; Feldman and McCarthy 1983; Hossain 2003; Jahan 1973). It has been noted previously that there are especially close emotional relationships between women and their brothers, and between maternal uncles and their nieces and nephews (Kenner et al. 2008), but there may be an additional reason why a woman's natal family is willing to help her. Women are legally entitled to a half share of what their brothers would inherit from their fathers, but most women leave the property with their brothers, hoping that they will provide help when needed (Scalise 2009). This is reminiscent of avuncular relationships in patrilineal African societies in which men provide their sisters' sons with food and land based on need, not inheritance (Goody 1959).

The situation for divorced women and their children was quite different. Children of divorce had the highest proportion of matrilocal residence, because their mothers frequently returned to the natal *bari*. Even children who remained with their fathers often lived neolocally, making patrilocal residence less frequent after divorce than in any other family type. Mothers who took the children when marriages ended were at the mercy of natal family to take them in (Bangladesh Laws 2016; Hossain 2003). Divorce is not only shameful, but also excludes women (and often their children) from any inheritance or support from the husband's patriline (Hossain 2003). Children of divorce had little access to patrilateral family or their support, because they were least likely to co-reside in the paternal *bari* (Table 1, Section A and Figure 1). The few divorced men who retained their children relied on new wives (stepmothers), unrelated friends, or patrilateral relatives for childcare. Divorce was not, in general, a fate of older women; rather, interviewees reported that divorce typically followed an estrangement while the wife was in her teens or twenties, had produced a single child or none, and had dwelt only briefly, if at all, in the marital home.

A young divorcée might return with her child, or more rarely, her children, to her natal *bari*, whereupon she was expected to remarry and leave any children with the maternal grandmother. If she could not remarry or the family could not afford to care for her and her child, she might leave to work in Dhaka or Chittagong and send remittances to help support her child. This was a shameful option, which women tried to avoid (Feldman and McCarthy 1983; Rao 2012). In every case in which a child of divorce dwelt matrilocally but was not in the mother's care, the mother had either remarried or moved to the city for work.

In this study, children of divorce, like those of widows, fared surprisingly well (Table 2), but this may reflect a selection bias. Divorced women who emigrate with their children typically end up in urban slums, where they suffer deficits in nutrition, health, and growth (Hassan and Ahmad 1991; Kamruzzaman and Hakim 2016). Divorced and deserted women constitute a higher proportion of the mothers in urban slums than in the Matlab population (Afsar 2003; Rabby 2015), suggesting that those who remain may be a minority with better-than-average social support, while more desperate divorcées emigrate to seek work. Moreover, even in Matlab, there is evidence that children of divorce have incurred excess mortality, at least until recently (Alam et al. 2001).

Children of deceased mothers had the most varied experience with respect to residence, caregivers, and resource providers. Infants whose mothers died were apt to be adopted out; these were the only adoptions in this dataset (although census records for families that were not interviewed included rare cases in which a poor widow or divorcée gave up a child for adoption). Approximately one-third of the children of deceased mothers were in the care of stepmothers at the time of interview (Table 1, Section B), but there was evidence that these step-relationships were often temporary. After divorce, a father might keep his child and quickly remarry, with the stepmother becoming the primary caregiver, but once

the stepmother had her own child, it was common for the stepchild to out-migrate or move to the primary care of a grandmother. One-third of children with deceased mothers were in the care of grandmothers, some paternal, some maternal, and even when maternal kin were not providing direct care, they were still the leading providers of material support, implying that despite the mother's death, a committed relationship with her children was often maintained.

Child outcome data from the present study are too few to establish clear effects of marital disruption or the various remedies that families adopt to deal with it, but further study is clearly warranted. It was notable that there were no significant differences in WHO standardized height and weight scores by gender, because Bangladesh is a place where girls could be more behind due to greater discrimination against girls than other places sampled by the WHO normative sample. Household income was a strong predictor of children's growth, and those of deceased mothers stood out as especially short and underweight (in comparison to children of widows and divorcées), as well as being educationally deprived. This may not be entirely due to low income (Table 3). These children were often cared for by stepmothers (Table 1, Section B), who constitute a risk factor for child neglect and maltreatment in many societies (Daly and Wilson 2008) and are certainly seen as such in Matlab, where interviewees alleged that stepparents discriminate against and abuse stepchildren. Two stepmothers had been expelled from mother-deceased homes for stepchild maltreatment, and a widower who was his daughter's primary caregiver declared that he would not remarry because he would not expose his daughter to a stepmother.

In traditional societies, children typically survive best in the care of their birth mothers (Hrdy 2009; Konner 2010; Strassmann 2011). This is largely due to deprivation of breastfeeding (Roy 2000; Ronsmans et al. 2010; Mwangome et al. 2012), but elevated mortality and morbidity after the mother's death are sometimes found even among weaned children, including in Bangladesh (Ronsmans et al. 2010). What the present data suggest is that children of deceased mothers may suffer from reduced care more generally, as their situations are precarious and unstable (Table 2). Repeated changes of primary caregiver may be analogous to placement instability in foster placements in industrialized and post-industrial countries, where such instability is associated with (but not necessarily causal to) negative outcomes including poor mental and physical health, homelessness, involvement in the criminal justice system, poor relationships in adulthood, poor educational attainment, and high unemployment (Ryan and Testa 2005; Rubin et al. 2007; Perry et al. 2014; Raley and Sweeney 2020 for review).

Research on effects of family structure in modernizing societies tends to show that children with a parent absent due to death or divorce fare relatively poorly, although effect sizes are typically small and the problems exhibited by children of divorce were often present prior to the divorce and related to the degree of family problems before the break-up (Amato and Anthony 2014; Amato and Keith 1991; Kelly 2000). Those children who manifest fewer negative effects from divorce or parental death are those who were exposed to better family functioning prior to the event and had more social and material supports available to them after it (Amato and Anthony 2014; Hope and Hodge 2016; Raley and Sweeney 2020).

Widows and divorcées are stigmatized in Bangladesh, and so to a lesser degree are widowers. As anticipated, caregivers in these non-intact family types lack the alloparental support available to intact families. It is striking that mother-deceased or divorced families had lower incomes than intact families, but were nevertheless more likely to report that "no-one" outside the family provided material assistance.

Whether the particular primary and secondary caregivers and material investors in non-intact families affect child outcomes requires further investigation. Do the children in non-intact families suffer deficits when cared for by stepmothers, for example? Numbers of children in each non-intact family type in the present study are too few to resolve such questions (Pedhazur 1997). It may be that the involvement of matrilineal kin in non-intact

families is buffering against negative effects, particularly when they are not competing for resources (Sheppard and Sear 2016).

In view of the prevailing negative attitudes toward divorced and widowed women, it remains surprising that their children were not obviously faring worse than those in intact families. As noted earlier, a selection bias as a result of differential emigration may be largely responsible, but insofar as children of disrupted marriages really fare no worse than others, this could be a result of several developments and associated cultural changes in Bangladesh over the past 40 years. Opportunities for poor and landless families have increased due to greater access to wage and migrant labor, even for some women (Rabby 2015), as well as to less restrictive interpretations of purdah, increased education for girls, reduced child and maternal mortality, increased life spans, and lower completed fertility (Blunch and Das 2014; icddr,b 2015). These changes may have resulted in extended family being able to provide more alloparental care and material investment than in the past, improving child outcomes in non-intact families. Further research may elucidate the power of these potential practices to buffer children from negative outcomes.

In any event, it seems clear that the typological characterization of Bangladeshi society as patrilineal and patrilocal has obscured the extent to which matrilineal family connections support children's survival and well-being, especially in high-needs circumstances.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data may be made available upon written request to the author.

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