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Wife's Earnings, Child Nutrition, and Gender-Based Violence in Egypt

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Wife's earnings, child nutrition, and Gender-Based Violence in Egypt

John Simister & Hassan Zaky

Summary

This paper investigates the 'children fare better' view, that children tend to be better fed if their mother has control over household decisions, using three household surveys in Egypt. It suggests an approach which might improve current economic analysis of household spending, by incorporating 'Gender Based Violence': there appears to be a link between undernutrition of household members, and violence against mothers (violent men often misspend a large fraction of household income on themselves). Child welfare improves dramatically if the child's mother earns enough for food. Unfortunately, few mothers in Egypt are employed, putting many children at risk. Agencies such as the Egyptian government could protect children, by paying child benefit to mothers or encouraging female employment.

Key words – Gender-Based Violence, wife's earnings, nutrition, Egypt.

1. Introduction

The ‘children fare better’ hypothesis claims that children tend to do better when mothers have more control of household decisions; empirical evidence from several countries supports this view (Chant, 2007: p. 42; Engle & Menon, 1999: p. 1318; Folbre, 1986: p. 24; Hancock, 2001: p. 22; Kennedy & Haddad, 1994: p. 1081). In Brazil, effects of wife’s earnings are almost 20 times stronger than effects of husband’s earnings in improving child nutrition (Thomas, cited in Lundberg & Pollak, 1996: p. 144). Hoddinott and Haddad (1995) found higher female income reduces alcohol & tobacco spending. Bukh (1980, p. 19) wrote “Men and women also use their cash differently. While men, and particularly younger men, often use their cash to buy goods for themselves – “bachelors consumption goods” – the women’s little money is usually used to cover certain household expenses”. In Durban, “There is a general feeling in Newtown, especially among women, that the main reason for men not revealing their incomes is that they want to retain a percentage for their “own use”. This money is spent mainly on liquor, tobacco and girlfriends” (Gwagwa, 1998: p. 50). Hence, “there is now some empirical regularity in the result that marginal income under women’s control tends to result in increased food consumption of children and better child nutrition” (Haddad, 1999: p. 114). The ‘children fare better’ view encourages women’s paid work, because a mother is more likely to have significant control over her household’s finances if she earns money ‘in her own right’.

Egypt is more successful than other African countries; but a surprisingly high proportion of children in Egypt do not get enough to eat (Galal, 2002: p. 144). El-Zanaty & Way (2006: p. 171) found “considerable chronic malnutrition among Egyptian children”. We would expect child hunger only in poor households; but Casterline, Cooksey & Ismail (1989) found household income had little effect on infant mortality. Many children suffer undernutrition because parents buy non-food items (Haddad & Reardon, 1993). The ‘children fare better’

hypothesis may explain such misspending: perhaps many households make spending decisions that harm children because the wife has little or no control of household spending. If so, why do many women accept their husband's spending decisions? Violence against women may be an important factor.

This paper uses the term 'Gender Based Violence' (GBV), rather than 'Intimate Partner Violence' or 'Domestic violence'. Use of the term GBV implies rejecting the claim that women are as violent as men (a controversy in domestic violence literature: see Johnson & Ferraro, 2000: p. 952). GBV is a major problem in many countries (Martin et al, 2002). Parish et al. (2004: p. 174) examined 28 studies, and found median GBV prevalence was 21%; Egypt has much higher than average prevalence, 34%. Ammar (2006: p. 245) suggest between 11% and 33% of women in Egypt have been abused by their husband; but much GBV is not reported by victims (Ammar, 2006: p. 248; IIPS and ORC Macro, 2000: 78), so actual prevalence may be higher. Alcohol is not a major cause of GBV in Egypt (Ammar, 2006: p. 247), unlike other countries (Kishor & Johnson, 2004) – perhaps because Islam prohibits alcohol. The Koran discourages violence against wives (Ammar, 2006: p. 249). Olmsted (2003: p. 83) and Douki et al. (2003) claim patriarchal values in Egypt are due to Middle Eastern culture, rather than religion. “Many men who abuse women justify such behaviour on a religious basis, and many cultural practices that abuse and violate women are justified in the name of religion. Religious leaders at all levels have a responsibility to ensure that religious interpretations are not used to oppress women” (Kapoor, 2000: p. 16).

Households where GBV occurs tend to have underweight women & children (Ackerson & Subramanian, 2008: p. 1189; Kapoor, 2000: p. 12; Sethuraman, Lansdown & Sullivan, 2006). “While the exact manner in which violence against women affects child survival is

not known, one possible explanation is that [...] women in abusive relationships suffer from lower self esteem, weaker bargaining position, less access to food and resources, and are therefore less able to care for their children” (Kapoor, 2000: p. 12). GBV gives a violent partner control (Johnson & Ferraro, 2000: p. 955; Barnett, 2000: p. 347); an abuser may withhold food from other household members (Ackerson & Subramanian, 2008: p. 1189). “If a man feels that his wife has failed in her role or overstepped her limits – even, for instance, by asking for household money or stressing the needs of the children – then violence may be his response” (WHO, 2002: p. 95). Some rich men use violence to impose his spending choices on his partner, so his partner & her children don’t get enough food; if she leaves her partner, she feeds her children better, despite her much lower household income (Pahl, 1985: pp. 33-4). In several countries, including Egypt, infant & child undernutrition and mortality rates are higher among children if their mother has been abused; a Nicaraguan study found GBV appears to explain about a third of child deaths (Kishor & Johnson, 2004: pp. 90-4).

Women’s earnings affect, and are affected by, her household status (Kishor & Johnson, 2004: p. 53). Some violent men prevent their wife from doing paid work – trapping her in poverty, so she cannot leave the marital home (Barnett, 2000: p. 349; Johnson & Ferraro, 2000: p. 958). Poverty is linked to acceptance of violence: “women in the lowest wealth quintile were more than three times as likely to consider wife beating to be justified for at least one of the reasons as women in the highest wealth quintile (74 percent and 23 percent, respectively)” (El-Zanaty & Way, 2006: p.xxvi). Among low-income women, there is “an extraordinarily high level of interpersonal violence” (Johnson & Ferraro, 2000: p. 958). Lack of her own income keeps many women in abusive relationships (Barnett, 2000: p. 347; Douki et al., 2003: p. 167; Ellsberg & Heise, 2005: p. 26; Krishnan, 2005: p. 772). “Lack of economic resources underpins women’s vulnerability to violence and their difficulty in

extricating themselves from a violent relationship. The link between violence and lack of economic resources and dependence is circular. On the one hand, the threat and fear of violence keeps women from seeking employment, or, at best, compels them to accept low-paid, home-based exploitative labour. And on the other, without economic independence, women have no power to escape from an abusive relationship” (Kapoor, 2000: pp. 7-8).

Several economic models of household spending have been suggested in recent decades. Early economic analysis of household spending assumed each household maximised the utility (happiness) of the household, ignoring differences of opinion between members of the same household, implying that all family members agree on household decisions such as spending (Akram-Lodhi, 1997: p. 37). In his early work, Gary Becker claimed the price of time of each household member determined household behaviour, suggesting priorities of the household member with the highest wage-rate were emphasised in household spending: Becker expected a more highly-paid person to do more paid work, but lower-wage household members to do less paid work and more unpaid work. Gary Becker’s later work, ‘New Home Economics’, saw the head of household is a benevolent dictator, assuming a husband is the main wage-earner, giving him power. The above three ‘unitary’ models were “in ascendancy from the 1950s until the 1980s” (Lundberg & Pollak, 1996: p. 141).

After ‘unitary’ models were rejected by empirical evidence, ‘bargaining models’ became the mainstream economic theories of household decision-making; there are various versions – including co-operative and non-cooperative bargaining models. If one household member earns much more than their spouse, then (by threat of divorce if they don’t get their own way) the richer partner gains power – each spouse’s “threat point” is related to his/her (actual, or potential) income. This creates compromise between husband’s & wife’s interests (Namoro

& Roushdy, 2008). A person financially dependent on their partner has less power (Haddad & Reardon, 1993); a person with no current earnings can still threaten divorce (a credible threat if s/he could cope if divorce occurred).

2. Data and methods

The ‘Demographic & Health Surveys’ (DHS) are a series of large, nationally-representative, household surveys. We use two DHS surveys of Egypt, and call them DHS 1995 and DHS 2005 (fieldwork November 1995 to February 1996; and April to July 2005). Both DHS surveys include all 26 of Egypt’s governorates existing in 2006 (new governorates were created in 2008) (El-Zanaty et al, 1996; El-Zanaty & Way, 2006).

In addition to DHS, this paper uses the ‘Work, Attitudes and Spending’ (WAS) household survey carried out by the Centre for Surveys & Statistical Applications (University of Cairo): fieldwork in December 2005, and March & July 2006 (2,161 and 415 and 2,428 cases respectively). WAS (like DHS) includes urban and rural households, and is a nationally representative sample – but WAS has a much smaller sample-size than DHS, and WAS sampled only 7 out of 26 governorates. Respondents in DHS 1995 and 2005 were women aged 15 to 49, whereas WAS included all adult ages. The WAS sample only includes married respondents; almost all DHS respondents were married at the time of interview. About half of the WAS sample are men, whereas DHS 1995 and DHS 2005 only interviewed women. WAS includes earnings of husband and wife, data fundamental to this paper. We hope future DHS surveys will include earnings of each spouse (DHS 1995 includes wife’s earnings, but neither DHS survey report husband’s earnings).

This paper assesses long-term undernutrition, so stunting (height-for-age) is more appropriate than wasting (weight-for-age). For both DHS surveys, a household is classified 'underfed' if one or more child is stunted, i.e. 2 or more standard deviations below average height of a child of the same age & sex in USA (from NCHS, 2003). For WAS, nutrition is assessed according to the question 'In the last 6 months, how often did you or anyone in your household cut the size of meals or skip meals because there wasn't enough money for food?' A household is classified underfed if the reply was 'almost every month', other replies ('some months but not every month', 'only one or two months', and 'never') are classified as 'not underfed'. This definition understates hunger in Egypt, but distinguishes between long-term hunger and short-term problems (such as temporary unemployment).

O'Leary (cited in Barnett, 2000: p. 344) defines violence as "The presence of at least two acts of physical aggression within a year (or one severe act) and/or physical aggression that leads the partner to be fearful of the other or that results in injury requiring medical attention". This paper investigates which women respondents had been hit or otherwise harmed by their husband. For DHS 2005 and WAS, two types of GBV are used – which we call 'severe' and 'less severe'. Severe violence is interpreted as a woman who said yes to one or more of the following questions: "Does/did your husband ever:" "kick or drag you?" or "try to strangle or burn you?" or "attack you with a knife, gun, or other type of weapon?" or "physically force you to have sexual intercourse with him when you did not want to?" The definition of 'less severe' GBV for this paper refers to women who experienced any other type(s) of physical or emotional violence in DHS 2005 and WAS surveys: "Does/did your husband ever:" "say or do something to humiliate you in front of others?" or "threaten you or someone close to you with harm?" or "push you, shake you, or throw something at you?" or

“slap you or twist your arm?” or “punch you with his fist or with something that could hurt you?” or “threaten you with a knife, gun, or other type of weapon?”

We calculated a measure of how much each spouse earns, which we call ‘earning power’. Each person’s income is converted from Egyptian pounds to US\$ per day at 1993 prices, using Purchasing Power Parity data from UN (2008). This is divided by the ‘household equivalence’ index in DSS (1993): this index gives a childless couple a score of 1, adding 0.07 for each child age zero or 1, up to 0.38 for each person age 16 or older. For Table 1, this is applied to household income; for subsequent tables and charts, we apply it to earnings of husband and of wife. We call this ‘earning power’ per adult; it indicates ability to pay for household needs such as food, using units comparable to a 2-adult household.

As a guide to Egypt’s cost of living, median spending on rent/mortgage, gas, electricity & water in WAS were \$1.23 per household (in this paper, income & spending are per day). CSSA reported to the authors in 2006 that rice in 6 shops in El Menia & Cairo averaged Egyptian £2.75 per Kg; rice contains 1634 calories per pound, & from the PPP exchange rate (UN, 2008), a woman could obtain sufficient calories for \$0.96 per day. If food & rent are the main items of essential spending, this implies an adult could live on about \$2.

3. Two mathematical models

To clarify economic bargaining, consider a mathematical model of a household which assumes gender symmetry. Assume an adult can live on \$2, and children in the household need \$4 in total. Each adult cares equally about children. Anyone can divorce, and will not

stay married if they earn over \$6 and go hungry; so no spouse earning over \$6 is hungry. If a woman earns below \$6, her risk of hunger falls as her husband's earning rises (she threatens divorce unless he buys enough food); some women ignore child welfare, and divorce if they go hungry when they earn over \$2. A husband's risk of hunger is non-zero if he earns below \$6, and his risk of hunger falls as his wife's income rises. The resulting prediction is shown in Chart 1: the vertical axis represents the risk of one or more household members going hungry, and the two "horizontal" axes (perpendicular to each other, in 3-dimensional space) are husband's income & wife's income. On each income axis, 2 indicates income from zero to \$2 (per day); 4 indicates over \$2 and up to \$4; and so on. The poorest households are most likely to go hungry (near the top of the page Chart 1 is printed on). This model oversimplifies bargaining models (for example, it ignores 'extra environmental parameters' used by some writers, which could incorporate effects of gender), but indicates the functional form in a typical contemporary economic approach.

Chart 1 about here

The second model considers the 'children fare better' hypothesis, and GBV as an influence in some households, to improve the bargaining model shown in Chart 1. This model assumes two asymmetries between men & women: firstly that only women care for children, hence child well-being depends on mother's rather than father's control of spending (the 'children fare better' hypothesis) – assume a mother & children need \$6, whereas a man needs \$2. The second asymmetry is that GBV is carried out by some men, but not by women; and assume a mother earning below \$6 cannot bargain if her husband uses GBV (she cannot make a credible threat of divorce). Assume 9.7% of women experience 'severe GBV' (average of

9.6% prevalence in DHS 2005 & 9.8% in WAS), and assuming less severe types of violence have little or no effect. This GBV model is used in Chart 2 (for comparison with Chart 1).

Chart 2 about here

Chart 2 shows the predictions of a mathematical model incorporating the ‘children fare better’ hypothesis and ideas from GBV literature. Chart 2 has a clear ‘step’: if a woman earns below \$6, she & her children risk going hungry – whatever the husband’s income is; whereas if she earns over \$6, she & her children never go hungry – regardless of the husband’s income. The rest of this paper considers evidence on whether the first or second model is supported by empirical evidence.

4. Results

To assess the problem of undernutrition in Egypt, Table 1 considers a measure of adequacy of long-term food intake: height-for age, in DHS. It also assesses GBV prevalence in DHS and WAS, and average household income (converted to household ‘earning power’) in WAS.

Table 1 about here

Regional variation in food access has been observed in Egypt. Galal (2002: 144) reports less hunger in Cairo than in other parts of Egypt. El Zeini & Casterline (2003: pp. 126-7) claim adjacent governorates often have similar nutritional status – perhaps due to culture, or type of crops grown locally. Table 1 suggests the fraction of households showing stunting tends to

rise as we go from North to South. This does not seem to be explained by the measure of income in the ‘earning power’ column of Table 1: there is no clear fall in average household income as we go from the top to the bottom of Table 1. A key point in Table 1 is that the north/south pattern in undernutrition in Egypt is matched by the increasing GBV as we go from north to south. Hence, Table 1 suggests regional variations in children’s hunger in Egypt might be explained – at least partly – by GBV; but there may be other sources of regional variations (factors not included in Table 1). Despite the decline in stunting from DHS 1995 to DHS 2005, hunger remained widespread in 2005.

We now turn to regression analysis, to examine effects of earnings and GBV on ability of households to buy food. Regression analysis on this topic is prone to ‘endogeneity’ bias: many married women are not employed, relying on the husband’s earnings – but her decision to seek paid work is inter-related with other household decisions (a man may insist his wife stays at home – becoming sole earner could increase his control of household spending): a woman’s decision to seek paid work is ‘endogenous’. To deal with this, we use 2-Stage Least Squares, along similar lines to Bloch & Rao (2002) and Namoro & Roushdy (2008). For the 1st stage (the left-hand regression in Table 2), we use a ‘Human Capital Theory’ model, to estimate the wife’s expected (potential) log of earnings – taking account of her education, age, and geographical location, using WAS households where the wife is currently employed. We use this equation to predict how much a currently non-employed woman could earn, if she sought work, in the 2nd-stage regression (right-hand column of Table 2). This implies various assumptions, such as that she could obtain a paid job if she chose; child-care would not be an insurmountable problem; and that her wage would not be reduced by her lack of work experience (we cannot test these assumptions, using datasets used for this paper). For the 2nd-stage regression (the third regression column in Table 2), we use logistic

regression. This is appropriate for a dummy dependent variable, for which conventional techniques such as OLS regression are unsuitable. Our analysis (not reported here) tells us that ‘other earnings’ (i.e. earnings of any household member other than husband or wife) are generally small, compared with the effects of husband’s or wife’s earnings.

Table 2 about here

Regression 2 in Table 2 suggest a wife’s earnings are about twice as effective as a husband’s earnings in reducing hunger (the coefficient is -0.13 for women, compared with -0.06 for men; the negative coefficient indicates that higher earnings is associated with less risk of undernutrition). In regression 3, the effect of a woman’s potential earnings are even stronger: the coefficient is over six times as large as the husband’s earnings coefficient (-0.26 compared with -0.04). Hence, regressions 2 & 3 both support the ‘children fare better’ hypothesis, and this gives the impression that the results are robust to changes in regression specification. But a woman’s potential earnings (regression 3) seem more important than her actual earnings (regression 2). If a woman considers leaving her husband, she may be able to leave if she could earn sufficient to support herself (and her children, if she has any) – even if she is not currently earning.

Another question is whether or not GBV affects food spending: Table 2 suggests it does, because the coefficients for ‘severe GBV’ and ‘less severe GBV’ are both positive and statistically significant in regression 2 (at the 1% level), in regressions 2 and 3. This is consistent with claims (discussed in the literature review) that child undernutrition is more common in households where women suffer violence, presumably because a woman is less able to promote her children’s welfare if she is made powerless by GBV.

The Nagelkerke pseudo- R^2 values suggest only a fairly small fraction of variation in the dependent variable is explained by the regressions 2 and 3. Perhaps future research will increase our understanding of this issue, such as which variables should be added to the regression; we experimented with adding other variables, such as education, which may be relevant to undernutrition – our analysis (not reported here) confirms findings in Table 2.

Several variables are related with each other, such as education and earnings; how can we tell the real cause? For example, there are many influences on (attitudes to) GBV, some of which are discussed by El-Zanaty et al. (1996), and El-Zanaty & Way (2006: p. xxvi). The evidence in this paper can, at best, only ever show associations between variables – if we see an apparent link between variables, we can never be sure which is cause, and which is effect (regression analysis on cross-section data cannot prove the direction of causality). This problem is made worse due to collinearity, when many variables are inter-related (for example, education is related to income and to attitudes), so we cannot be sure which is the real cause. Our diagnostic tests (not reported here) show evidence of collinearity in the regressions in Table 2; but this interdependence among explanatory variables is not large enough to cast doubt on the conclusions to this paper.

There are similarities between GBV literature and bargaining models, in that both emphasize divorce. In economic bargaining, a well-paid wife can threaten to divorce unless she gets at least some control over household decisions. In GBV literature, many women experience violence, and a victim can only leave her partner if her earnings are sufficient. They suggest a different functional form: economic bargaining models imply a smooth function relating wife's earnings (cause) to wife's control (effect), assuming husband's earnings are

unchanged. By contrast, GBV suggests a step – either a woman earns enough to leave her husband (in which case the divorce threat is credible), or she doesn't (in which case she cannot leave her violent partner, and has little control of household spending). Hence, the functional form of the relationship between earnings and nutrition is a key issue. It is possible to add more terms to the regression specification to investigate this, such as adding (husband's income squared) and (wife's income squared), but this increases collinearity. Conventional techniques to deal with collinearity (such as ridge regression) are rarely used with logistic regression in GBV literature. Vágó & Kemény (2006: p. 178) claim that ridge regression has advantages in small samples, but that Maximum Likelihood estimators are more appropriate in large samples; however, we need a large number of cases for this research, because there are many influences on nutrition (such as seasonal work causing seasonal hunger). Perhaps regression is not the most appropriate way to investigate non-linear effects of wife's (or husband's) earnings. We now turn to a graphical approach; this can reveal non-linear relationships, which might cause regression results to be misleading.

Chart 3 about here

Chart 3 indicates a tendency for household welfare to depend on wife's earnings more than on husband's earnings. Where the wife earned over \$6 per day (per couple, or equivalent for a larger household; see 'data and methods' section above), very few households were unable to afford food. However, if the wife earned in the ranges (up to \$2) or (\$2 to \$4) or (\$4 to \$6), a large fraction of households went without sufficient food. Chart 3 suggests that a wife earning over \$6 safeguards household access to food, whereas a husband earning over \$6 does not: even where the husband's earnings were over \$6 per day, some households went

without food if the wife earned little or nothing. Regression results (in Table 2 above) confirm that wife's earnings are vital for reducing the risk of hunger.

We can compare the shape of Chart 3 with the theoretical predictions of an economic bargaining model (Chart 1) or a GBV-based model (Chart 2). Although not entirely clear (presumably due to random noise), Chart 3 looks more like Chart 2 than like Chart 1, which suggests support for claims in the GBV literature. The most obvious difference is that Chart 1 assumes symmetry about the vertical axis, whereas Chart 2 does not; Chart 3 is not symmetrical.

Chart 4 about here

Chart 4 presents a clear link between a wife's earnings and her experience of severe GBV. Among women with no earnings, a fairly large fraction (around 10%) experienced GBV such as being kicked by her husband; but this fraction generally falls as her income rises – if she earns over \$6 per day 'earning power' (i.e. \$6 per couple, or equivalent), she has much less risk of severe GBV. This is consistent with the claims of previous researchers (e.g. Kapoor, 2000: pp. 7-8) discussed in the literature review, that women with low earnings are vulnerable to GBV because they cannot afford to leave their husband. Such vulnerability is likely to affect a woman's power within the household. Any income for women above \$2 per day appears to reduce her risk of GBV. This may indicate a causal relationship, in which high-earning women can leave a violent husband, but low-earning women have no choice but to suffer GBV; an alternative explanation is that victims of GBV are prevented by their husband from taking paid work. More research is needed; qualitative methods, such as focus groups or in-depth interviews, may shed light on this.

Among 2,259 female WAS respondents who answered the question “To what extent does [your husband’s spending on his clothes, mobile phone, café, car, etc] affect the children needs and the living standard of the family?”, many women reported that their husband’s spending on these luxuries is harmful to their family’s welfare. Only 35% of women said their husband’s spending on this list of luxuries had no effect on family welfare; 27% of respondents reported a ‘low effect’; 22% reported a ‘harmful effect’; and 16% reported a ‘very harmful effect’. Hence, many women are aware that their husband is spending money inappropriately; it is not simply a case of husbands concealing their income & spending from their wife. Why, then, would so many women accept their husband’s spending patterns? Perhaps some men use GBV to force their wife to accept his priorities.

Table 3 about here

Table 3 is limited to households with female respondents, in which there are at most two earners – husband & wife; if any other household member is in paid employment, their household is removed from Table 3, giving an effective sample of about 427 cases. Table 3 focuses on a few spending categories; it does not explore all types of luxuries bought by men and women (future researchers might devise a systematic approach, to include all types of luxury spending). Table 3 indicates two key lessons for this paper. First, for the three types of luxury spending on the right-hand-side of Table 3, husbands tend to spend much more than wives. A second lesson from Table 3 is that the three types of food spending on the left of Table 3 tend to decline as we go down, at the same time as husband’s luxury spending (on the right of Table 3) tends to increase – this illustrates how something as apparently harmless as a man going to a café may cause problems in household food spending.

To assess if GBV is relevant to household spending, we calculated the average spending by husbands in cafés in WAS (an important spending category, according to Table 3). We found an average husband spent \$0.88 per day in households not reporting ‘severe GBV’, compared with an average of \$1.59 per day where the wife reported severe GBV (e.g. wife kicked by her husband). The effect of GBV on husband’s spending in cafés is statistically significant at the 1% level, based on an independent samples t-test. This link between GBV and husband’s spending is consistent with the hypothesis that some men use violence to force their wife to accept him buying luxuries for himself. Perhaps Egyptian men’s spending in cafés can be compared to alcohol spending by men in other countries, as analyzed by Gwagwa (1998) in South Africa.

Table 4 about here

Evidence in this paper indicate that women’s earnings reduce child undernutrition; but how many mothers can protect their children? Table 4 indicates that most women in Egypt are not employed (about 84 to 86%, compared with about 8.6% of men). And if an Egyptian woman is employed, she is most likely to have a low wage – often below the earning power of \$2 per day for a couple. Hence, the evidence that women’s earnings can protect children from undernutrition (in Chart 3) seems to be of limited help: few children have an employed mother earning enough to ensure they get sufficient food. More employment for women seems essential for Egypt’s children to avoid nutrition problems, as shown in Table 1 and Chart 3, unless mothers receive state benefits.

5. Conclusion

This paper focuses on Egypt, but we cannot assume these findings apply to other countries. Analyzing DHS data, Kishor & Johnson (2004: p. 32) report: “In Colombia, the Dominican Republic, Haiti, India, Nicaragua, and Peru, women who report that they are currently working and earning cash also report significantly higher levels of ever-experience of violence than do women who are not currently working. For example, in Peru, 46 percent of working women earning cash report having ever experienced domestic violence, while 36 percent of nonworking women report the same. Only in Egypt are women in paid employment significantly less likely to have ever experienced violence than those who do not work: 36 percent of women not working report having ever experienced violence, compared with 21 percent of those who do work for cash” (note, however, that Kishor & Johnson do not distinguish between high-earning women and low-earning women: most DHS surveys do not include wife’s earnings). How can we explain such differences between countries? One possible explanation is that in Islamic countries, including Egypt, most men drink little alcohol – GBV associated with alcoholism and drunkenness in other countries may obscure the link between income and GBV (see Gwagwa, 1998).

Predictions of the bargaining model used here, shown in Chart 1, are completely unlike the empirical evidence in Chart 3: Chart 1 is symmetrical about the vertical axis, but Chart 3 is not. Some writers using bargaining models do incorporate gender, but their mathematical analyses suggest this is an afterthought – for example, McElroy (1990: p. 576) wrote “This assumption does not imply that the metautilities of men and women differ, but only that the constraints on their behaviours differ systematically. For example, due to past specialization and investments in household production and child care vis-à-vis her former spouse a woman

is likely to have less market capital, more home-production capital, larger marriage-specific home-production capital losses, and poorer prospects in the remarriage market”.

This paper argues that economic bargaining models of household spending could be improved, by incorporating the ‘children fare better’ hypothesis and the possibility of GBV influencing decisions; such an approach is the basis for Chart 2, which has similarities to Chart 3. But is it appropriate to improve bargaining models? Perhaps it would be better for a reader of this paper to start afresh, and create a new theoretical framework to explain the empirical findings of the ‘children fare better’ approach and GBV. Charts 3 and 4 suggest little merit in household bargaining models, because gender asymmetries are ignored or added as an afterthought. The ‘children fare better’ evidence warns us that if we neglect women’s rights, we put children at more risk of starvation.

This paper confirms three previous hypotheses (in the literature review): the ‘children fare better’ view, which claims undernutrition risk increases if a mother has insufficient or no income of her own (Chart 3); a tendency for low-earning women to be at more risk of GBV (Chart 4); and an association between GBV and undernutrition (Tables 1 and 2). This paper adds to previous work, by reporting evidence that the link between mother’s income and child well-being applies to Egypt (as it does to other countries): if a woman earns her own income, her children are more likely to get sufficient food. Evidence in this paper suggests that GBV prevents many women from ensuring there is sufficient food for her family.

A key lesson from this research is that it is possible to reduce Egypt’s problem with child hunger. From the ‘children fare better’ evidence, we should try to ensure every woman has sufficient income, because that is an effective way to reduce GBV and hence improve

nutrition of women & children. If the Egyptian government can raise women's earnings, they will achieve two goals: reducing GBV, and reducing undernutrition. Another way to raise women's income is for the government to pay an allowance to poor mothers; empirical evidence shows this is an efficient way to help children (Lundberg & Pollak, 1996: p. 155). Lundberg & Pollak (1996: 154-5) wrote "The belief that "kids do better" when their mothers control a larger fraction of family resources, which was presumably part of the rationale for changing the U.K. child benefit program in the late 1970s, has now attained the status of conventional wisdom among development agencies". Some writers blame the government of Egypt for such problems: "The state has not provided women with an institutional alternative to the male provider" (Bibars, cited in Chant, 2007: p. 43).

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Table 1: regional variation in income, undernutrition, and GBV

Region	household earning power (\$/day)	Stunting		Severe GBV	
	WAS	DHS 1995	DHS 2005	DHS 2005	WAS
Egypt N: Dakahlia, Damietta, Ismailia, Port Said, N.Sinai	6	21	16	6	3
North East Egypt: Sharkia, S. Sinai	6	35	16	7	1
NW: Matroh, Alexandria, Behera, Kafr el-Sheikh, Gharbia	7	26	19	15	4
Cairo	10	26	20	9	6
mid Egypt: Beni Suef, Fayoum, Giza, Menoufia, Kalyubia	4	48	30	9	5
mid Upper Egypt: New Valley, Menya, Assuit, Suez	5	47	30	8	28
Upper Egypt: Red Sea, Souhag, Qena, Aswan	5	40	34	10	21

Source: DHS and WAS

Table 2: regression results

	regression 1	regression 2	regression 3
Wife's predicted earning power (\$ per day)			-0.26 **
Wife's earning power (\$ per day)		-0.13 *	
Husband's earning power (\$ per day)		-0.06 **	-0.04 **
Wife experienced 'severe GBV'		0.01 **	0.01 **
Wife experienced 'less severe GBV'		0.004 **	0.004 **
wife's age	0.03 **		
wife's age squared	0.00 **		
wife's education: primary (over 4 years)	0.06 **		
wife's education: secondary	0.11		
wife's education: matriculation	0.31		
wife's education: college	0.35 **		
wife's education: graduate	0.42 **		
wife's education: postgraduate	0.69 **		
Region (Cairo is the reference category):			
Egypt N: Dakahlia/Damietta/Ismailia/Port Said/N Sinai	-0.24 **	0.01	-0.13
North East Egypt: Sharkia, S. Sinai	-0.15 **	-0.42 *	-0.55 **
Mid Egypt: Beni Suef/Fayoum/Giza/Menoufia/Kalyubia	-0.18 **	-1.71 **	-1.87 **
NW: Matroh/Alexandria/Behera/Kafr el-Sheikh/Gharbia	-0.24 **	-1.15 **	-0.96 **
Mid Upper Egypt: New Valley, Menya, Assuit, Suez	-0.05 **	-0.36	-0.62 *
Upper Egypt: Red Sea, Souhag, Qena, Aswan	-0.11	0.00	-0.11
Damietta	0.17 *	0.73 **	0.96 *
Sharkia	0.05 *	0.16	0.28
Gharbia	0.03	0.01	0.12
Beni Suef	0.03	-1.37	-1.32
Menya	-0.02	-0.34	-0.32
Qena	0.05	-0.47	-0.37
Constant	1.30 **	-0.84 **	-0.33
R^2 (Nagelkerke R^2 for logistic regressions 2 and 3)	39%	17%	18%
Sample size	705	2271	2271

Source: WAS; * indicates statistically significant at the 5% level; ** significant at 1%.

Table 3:
Spending on selected categories, by effect of husband's spending on household welfare

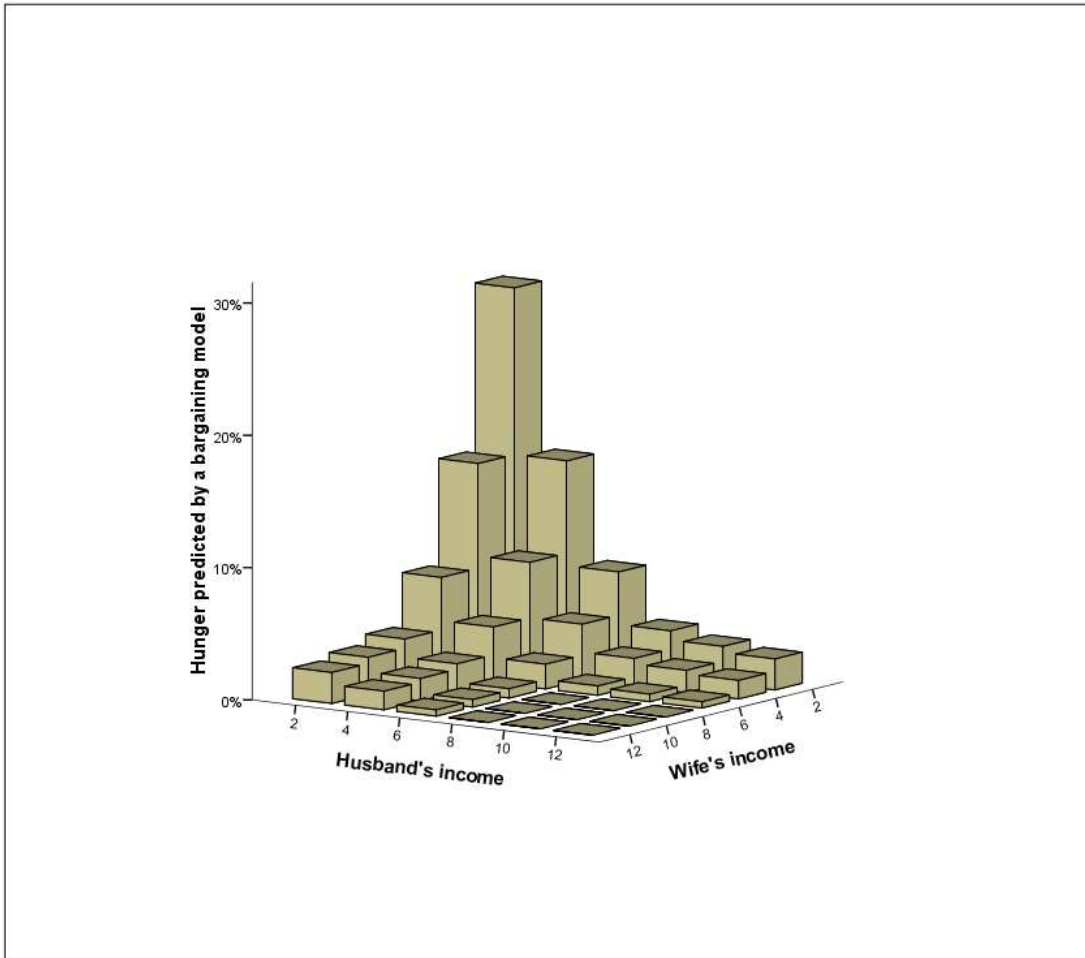
	household food spending			spending on mobile phones		spent on cars /other transport equipment		spending in cafes	
	Meat /fish	cereals	vegetables	husband	wife	husband	wife	husband	wife
no effect	2.63	1.57	1.40	.29	.09	.63	.20	.85	.03
low effect	2.05	1.30	1.33	.18	.01	.56	.17	.77	.00
harmful	2.05	.98	1.15	.25	.05	.84	.16	.98	.01
very harmful	1.97	.99	1.30	.14	.03	.81	.07	1.11	.00
Total	2.23	1.26	1.31	.22	.05	.69	.16	.91	.01

Source: WAS female respondents only; converted to \$/day, not adjusted for household size

Table 4: Wife's & husband's 'earning power' (percent of sample)

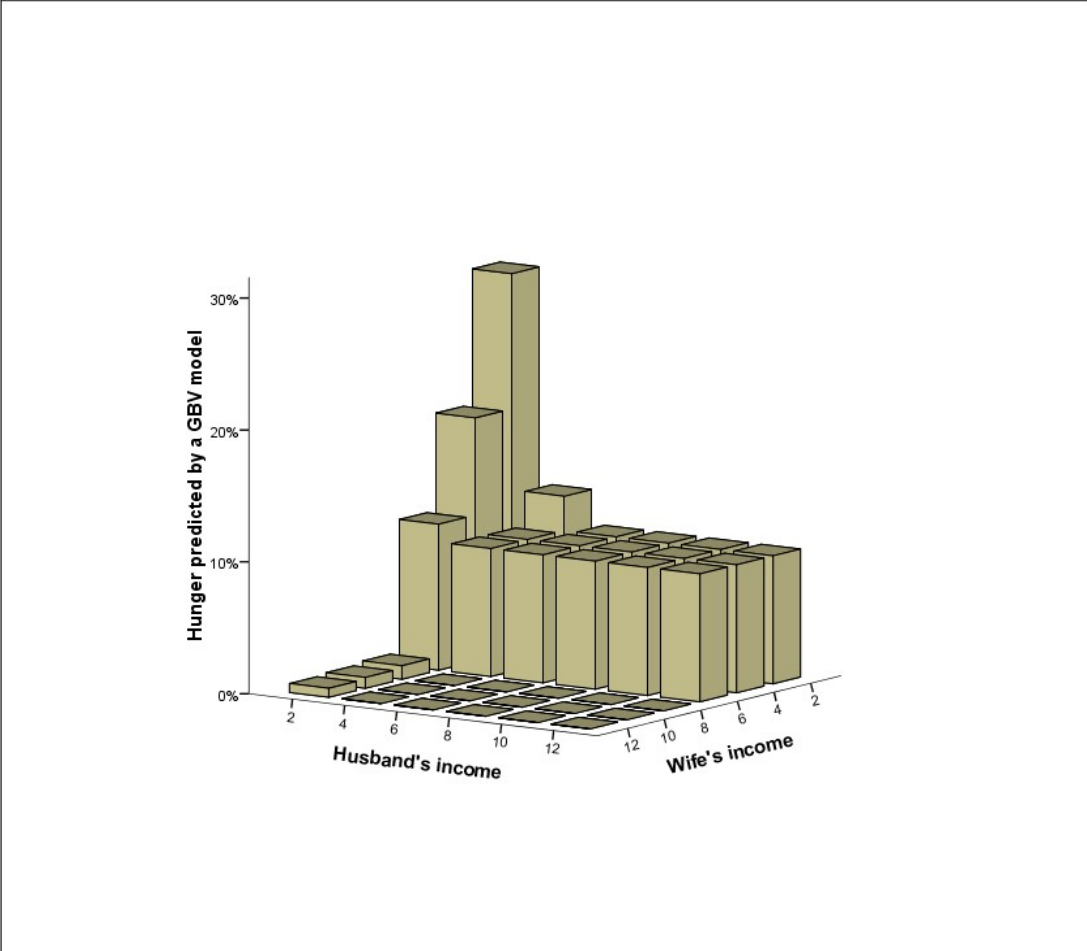
	Wife's earning power		Husband's earning power
	1995 DHS	WAS	WAS
zero	84.2	86.1	8.6
up to \$2	13.9	7.8	37.7
\$2 to 4	1.5	3.9	30.1
\$4 to 6	0.2	1.4	13.2
\$6 to 8	0.1	0.1	3.1
\$8 or more	0.1	0.7	7.0

Chart 1: risk of undernutrition, predicted by an economic bargaining model



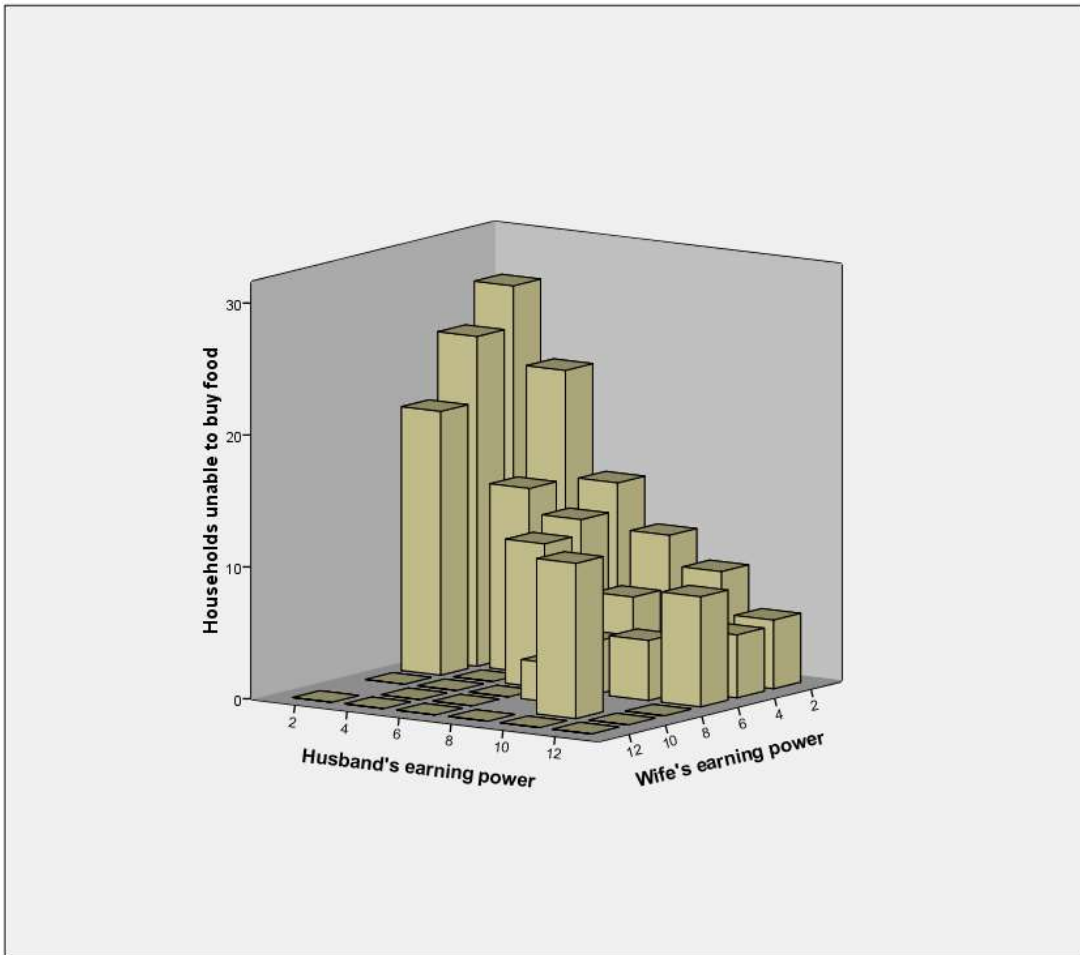
Source: data created artificially

Chart 2: risk of undernutrition, predicted by a GBV model



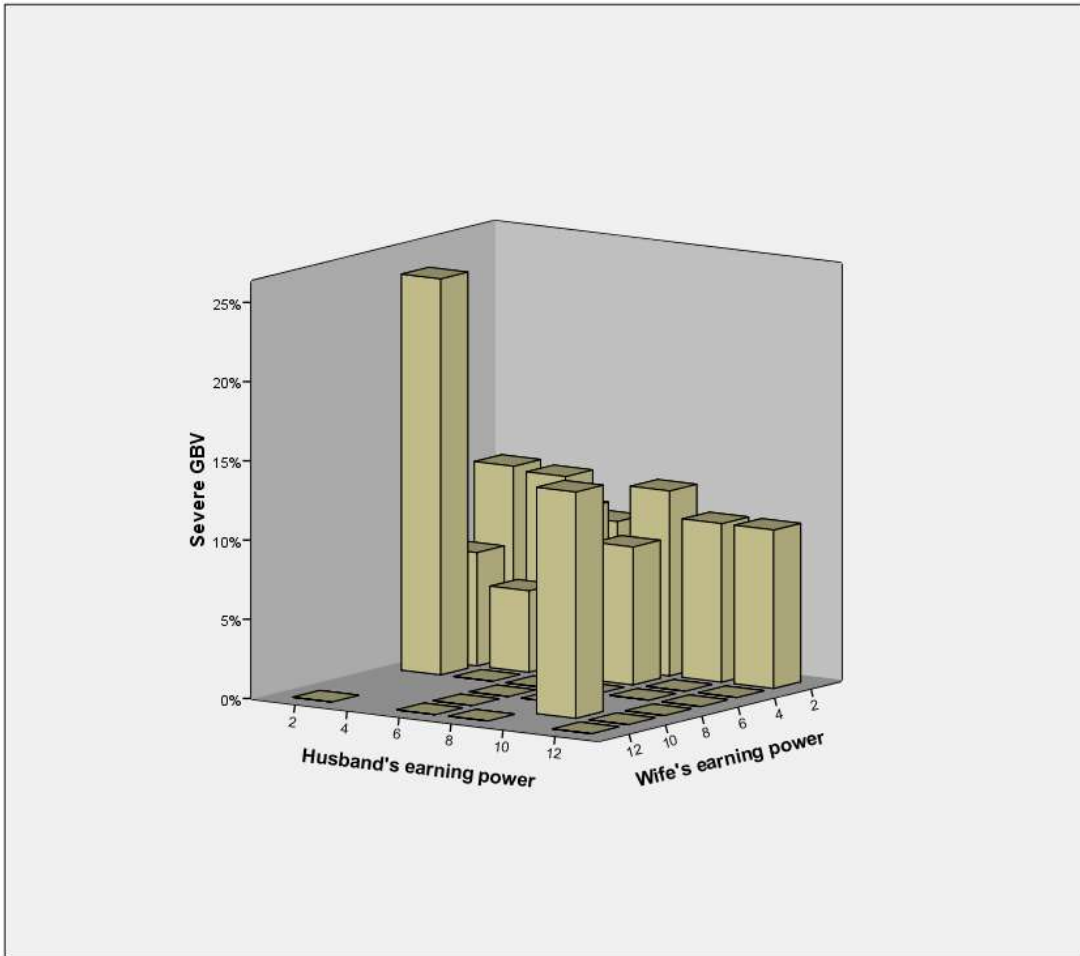
Source: data created artificially

Chart 3: household ability to afford food, by earnings of husband & wife



Source: WAS (4,737 cases).

Chart 4: Severe GBV, by earnings of husband and wife



Source: WAS (female respondents only: 2,518 cases)