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Gender, Age and Mortality in a Changing Society
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Introduction

The subject of mortality, and particularly infant mortality, in the past has generated innumerable studies, the issue of sex differences in mortality has, however, received somewhat less interest. While already William Farr observed that the aggregate mortality levels generally obscured the fact that women and girls in 19th century England and Wales died at higher levels than men and boys, the differences have in several instances been ascribed to unavoidable biological or other causes. Today enough data are available to reveal that excess female mortality at any age group seems to be a result of the environment or human agency rather than biology and such excess mortality can be used to measure female deprivation caused by discriminatory practices (Guntupalli and Baten 2009; Das Gupta 1987). Family reconstitution data for the pre census period in England have revealed a considerable gender in-balance with excess female mortality, however, these data also seem to indicate that the early industrialisation period brought deterioration rather than improvement to some groups in society (Wrigley et al. 1997; Klasen et. al 2005; Horrell et al). While excess female mortality has been identified in a number of regions of Europe in the 19th century it was not a universal phenomenon. With the exception of a slight elevation among girls aged 10-15 from about 1890 to the end of WW1, male mortality was systematically higher in all age groups in 19th century northernmost Europe (Klasen 1998 p.433-34; Sundin and Willner 2007; Pitkanen). The arguments arising from this complex have been found in studies aiming to find the causes and mechanisms linked to female deprivation (Johansson 1991; Nicolas and Oxley 1993; Horrell and Humphries), or on the other hand studies trying to re-introduce biological explanation models or modify of EFM (Hinde 2011) or studies minimising the groups affected or questioning the validity of generalisations (Harris 1998, 2009).

The aim of this paper is to analyse geography and economy to identify factors affecting higher female mortality. The two primary areas of comparison will be England and Scotland using data provided by the registrar general, census data and information gathered by the Royal Commission on Labour. The focus will be on gender and age, different geographic localities, economic structure and dietary patterns.

MORTALITY

A comparison between the overall mortality figures in England and Scotland during the second part of the 19th century shows higher rates of male than female mortality, it also reveals a slightly higher mortality in England. An analysis of urban and rural mortality demonstrates, as expected, that mortality in large towns exceeded that in the countryside, the large towns showing the largest problems both in England and Scotland (Tables 1 and 2). There are also indications that male mortality was higher in urban areas than female mortality. The comparisons suffer, however, from the problem that while the Scottish data was divided into clear urban and rural categories,

the Registrar General in England, did not always make such distinctions even though the data is otherwise geographically comprehensive (Higgs).

Table 1. Male and Female Mortality in England and Scotland

Scotland			England		
	Males	Females		Males	Females
1892	19.1	18.1	1891	21.5	19.0
1870	23.1	21.3	1870	24.2	21.6
1855-62	21.8	20.6	1862	23.4	20.5

Sources: Annual reports of the Registrar General

Table 2. Male and Female Mortality in Different Localities

Scotland			England		
	Males	Females		Males	Females
1892			1891		
Principal towns	21.89	19.72	London	22.9	19.5
Large towns	18.45	17.86	Cornwall	22.0	19.9
Rural	16.18	16.01	Cambs	18.7	17.2
Rural insular	16.76	15.61	Kent	17.3	15.2

Sources: Annual Reports of the Registrar General

In a paper in *Annales de Demographie Historique* in 1993 Jerry Kearns highlighted the fact that although mortality was higher in 19th century urban England and Wales than in rural areas, the countryside was less favourable to females than males. In the mid 19th century rural female mortality was higher than that of males in practically all age groups. Kearns created a data set with a clear urban-rural divide and we have taken the liberty of using Kearns's figures in making comparisons with data from Scotland to gauge the similarities or differences between urban and rural areas in the mid 19th century (Table 3a, 3b). As Kearns used a 10 year period and we only use information from one year of the decennium one could argue that the comparison lacks the exactness necessary for demographic comparison. Our view is, however, that as in both cases the comparison is primarily focused on studying males and female within the same dataset, this should not pose a problem. The division of age categories is also not identical but this cannot be seen as a major problem.

One of the first issues that catch the eye is the considerable variation in infant mortality between town and countryside. These differences are so great that one would be tempted to see the urban rural discrepancy as a purely infant mortality matter. A scrutiny of the other age categories reveals that in urban England only the age group 5-9 years shows excess female mortality. A look at the rural figures however tells a different story. In the rural English localities of the 1850s every single age group from 5 to 50 suffered from excess female mortality. The Scottish situation of the early 1860s was very different. Not only was the survival of girls and

women better than that of boys and men in town districts but even in the countryside was the female mortality rate as good (or bad) as that of the male (Table 3a and 3b).

Table 3a. Mortality by age and sex in mid 19th century Scotland and England, urban

Scotland 1862	Town districts		England 1851-60	Towns	
	Male	Female		Male	Female
0-1	19.445	16.995	0-1	20.950	19.450
0-5 years	9.332	8.698	1-4 years	5.610	5.530
5-10	1.249	1.240	5-9	1.100	1.080
10-15	0.644	0.633	10-14	0.580	0.540
15-20	0.934	0.699	15-19	0.810	0.760
20-30	1.096	0.984	20-24	0.980	0.860
30-40	1.350	1.319	25-34	1.110	1.100
40-50	1.990	1.601	35-44	1.570	1.440

Table 3b. Mortality by age and sex in mid 19th century Scotland and England, rural

Scotland 1862	Rural districts		England 1851-60	Rural	
	Male	Female		Male	Female
0-1	11.829	9.570	0-1	14.440	11.620
0-5 years	4.445	4.023	1-4 years	2.120	2.050
5-10	0.751	0.705	5-9	0.690	0.710
10-15	0.503	0.443	10-14	0.430	0.550
15-20	0.677	0.553	15-19	0.540	0.840
20-30	0.959	0.767	20-24	0.820	1.010
30-40	0.968	0.914	25-34	0.790	1.010
40-50	1.014	1.023	35-44	0.870	1.080

Sources: Annual Reports of the Registrar General; Kearns 1993

Discussions and explanations

The weaker sex?

The higher mortality rates of females in certain age groups have been seen as problematic. Viewing advanced societies in 19th century Western Europe as on par with those of the past practising female infanticide, or contemporary regions in the third world with highly discriminatory structures, is not comfortable. While one line has been to re-define contemporary male death rates as excessive because of life style choices (Retherford 1975,p.12, 15; Preston 1976p.123,148) and therefore not 'normal' other explanations have been linked to hygiene and technology. The hazards of childbirth and related issues, a specific feminine problem, have been advanced as explanatory models. The fact that only women over a certain age would suffer from such problems is of course slightly awkward when discussing the problem of mortality among young girls. Equally the life style of modern men would hardly impact on death rates of children under the age of ten (Wall 1981, 126-128,132). The tendency of young girls to suffer from tuberculosis and certain childhood diseases has gone on and will undoubtedly be continuing for a long time. The issue of a different

male and female everyday environment might be of certain relevance. The fact that it has been possible to find societies in western Europe with few examples of excess female mortality, societies with old and reliable registration is however more of a problem (Klasen p.433-436; Sundin; Pitkanen). If it was possible for some societies to avoid excess female mortality there must be some reasons why it was present elsewhere. The Scots cannot have had a different biology than the English, therefore what needs to be examined is the structure of society, economy and everyday life.

Female work and economic dependency

While some scholars have made efforts to question the ‘normality‘ of excess male mortality and contributed modern western levels to lifestyle choices others have tried to explore reasons for models with negative consequences for females in the past. One of the explanations has been the weak position of family members who did not or were not likely to make an economic contribution. Already in the 1860s Smith draw attention to the fact that families did not apply an equal distribution system of food resources, particularly not in times of shortage. The male breadwinner had a different diet and a major share in everything. Johansen and Klasen have demonstrated links between the economic position of women and of access to the labour market on female welfare, health and mortality. Jane Humphries and Sara Horrell (1999) have analysed the effect of industrialisation on working class women and demonstrated their marginalisation and increasing dependency. Humphries has particularly highlighted the decreasing abilities of women to generate auxiliary income in the 19th century English countryside. Keeping a cow had had a positive effect on the economy of the labourer, on the diet of his family, particularly that of his children. The income and benefits of a cow could represent half a labourers’ wage but after the enclosure this addition to the family budget was no longer present. With increasing large cereal growing holdings important for farmers in the southeast, the labourers lost their rights to the common and become dependant on day labour and wives and children were treated as reserve labour, called upon when needed. (Humphries 1990 p.24-27, 31). The findings of the Royal Commission on Labour in the 1890s revealed an increasing number of rural areas in southern and east central England where little work was available for women .

In Scotland on the other hand the situation was different. The nature of the agrarian economy promoted a considerable demand for female workers. Unlike in England, milking was women’s work. In some cases only men with a wife or daughter willing to work on the farm were hired. Widows with adult daughters could establish themselves in cottages and find work on the farms. The remuneration of farm workers often included a free cottage, grazing land for one or two cows and areas for cultivating potatoes. In 1871 when the share of women of agricultural workers was less than 10 percent in England it was more than 25 percent in Scotland. During the last two decades of the 19th century the number of females in agricultural work decreased in Scotland and England bringing the female proportion down to 5 percent in England and 18 percent in Scotland by 1891. The decrease in full time employment, however, does not reflect an identical situation. Young women left the Scottish countryside to work in towns and industrial areas creating some demand on input from married women. In England, however the agrarian sector employed women for harvest and haymaking only, concentrating on using men and boys for more permanent work (Memoranda C.6894 xxxvii).

Consumption and distribution

We didn't get the meat. My father had the meat. Mother used to make these boiled puddings. Supposed to be meat pudding but there was just a little piece of meat for my father. There were onions in it and she made gravy somehow... We used to love it. Father had the meat and we had the onions and gravy... And if we had jam we didn't have butter on, just bread and jam or bread and butter, never the two together, and cheese. I said once: "You've given him a bigger piece of cheese than me. Mother said: "He's a bigger boy than you. You can eat your bread and smell your cheese." And if she bought a kipper we used to make that do for the three of us or a bloater for three of us. They always used to give me the tail piece because I was the smallest... But you see my father only earned ten shillings a week so we had to make do like that. (Chamberlain, Mary, Fenwomen, A Portrait of Women in an English Village, History Workshop Series, Oxford 1975 p.35-36)

Traditionally studies of standards of living have assumed that all family members have equal access to family resources. Therefore wage levels and GDP have been viewed as satisfactory sources to the life of families in the past. However, already in the 19th century social reformers were aware of the fact that wives and children could suffer deprivation when efforts were made to satisfy the needs of the household head. In working class households where the earning potential of women was bad and chances to care for her children without a husband problematic many working class wives went to great lengths to keep the family together. The gender in-balances have been demonstrated by Humphries (1999) and McNay et al (2005), studies by Horrell, Meredith and Oxley (2000, 2009) have revealed that the self sacrifice of women in poor working class household could result in conditions of starvation. In a recent study Jane Humphries (2010) has demonstrated that it was far from extraordinary that household heads allowed themselves considerable "top shaving" at the expense of their families. While it would seem that boys and girls were treated equally (Harris 1998, 2009) there are also indications to the contrary. Roberts highlighted the plight of little girls, and the discrimination they suffered when food was distributed, in his account of life in late 19th century Salford (Roberts p.109, 117). The bargaining position of children could however, vary considerably depending on their earning potential and the economic opportunities in different localities (Moehling 2005, Logan 2007).

Diet structure

While the welfare of families and individuals in the past could be closely linked to their combined earning potential the structure of the diet might also be of some importance. The question is whether the 19th century changes in the diet identified with advancement and a more urban life style potentially also had a negative effect on the health of women and children. The core question is linked to choice and distribution in a situation of shortage. Could it be possible that the porridge, milk and potatoes of Scottish labourers and other northern agrarian regions gave women and children a better chance than the pork, white bread and tea of southern England. The Medical Officers Report, Conditions of Nourishment (Smith 1864), unearthed several regional differences in lifestyle and diet. The families in Scotland and Wales consumed considerably more milk than those in the English countryside. Their diet included more oats and barley, which was eaten as porridge or mixed with wheat and baked into bread. In Scotland and Wales it was rare to buy bread, home baking was

practiced and houses regularly contained baking ovens. Barley and even rye flour could be mixed with the wheat in the bread dough. Keeping cows, pigs and chickens and growing potatoes and vegetables was far from unusual. While some animals were kept in the Northwest the practice was not commonplace. In southern England, particularly the Southeast no animals were kept, bread was bought from the bakers and flour used for making pies. Milk was often only put in tea. In some areas farmers fed the milk to their animals rather than selling it to the labourers. In other places milk was only available at some distance and was therefore not acquired. White bread was considered desirable and little interest was shown in other types. Smith was not definite about the positive health implications of brown flour as it sometimes showed traces of husks. His view was however that an increase in the consumption of milk and oatmeal among working men in general would be desirable (Smith 1864 p.302-328).

The choice of foodstuffs and greater or lesser processing in the household is not only a food issue. The fact remains that while industrial baking relieved the women of work, it also deprived them of an important skill, a task and a source of warmth. The liberation of women through industrialisation from tasks connected to food and clothes production also undermined their authority, their economic importance and increased their dependency on an earning husband. Although a confirmed believer in the blessings of the male breadwinner system, Smith points out the advantages for the families where the mother has been able to find work in the fields. Not only does she bring in money for the family, she also has a meal at the farmers' table, which improves her health and well-being.

The rule is for men to eat bacon every day during the week and fresh pork on Sundays or mutton or beef. A village shop where I made particular inquiries I ascertained that men principally bought tea, sugar, cheese and green bacon but occasionally tinned salmon. Men earning 14 s a week sometimes give the wife 10 s to provide for the household and give no account for the extra 4s.

Mr. Morris says that he buys flour wholesale for his men so that they can get a loaf for 3d, but is it not common for labourers wives to bake their bread. They will even give 5d a loaf for it instead. There is considerable difficulty in getting milk for the labourers. It is often scarce and the farmers' wives are very reluctant to serve it. The men say that many of the farmers' wives would rather throw it to the pigs (The Royal Commission of Labour, 1893 p.158).

Weekly consumption of certain foodstuffs 1864 (per adult)

	Breads. Lbs/adult	Potatoes lbs/ad.	Sugar oz/ad	Fat oz/ad.	Milk fl oz/ad.	Cheese oz/ad.	Meat oz/ad.	Tea oz/ad.
England	12.3 (9 - 15)	0- 10	7.3 (4- 12)	5.5 (3-14)	32	5.4	16 (7-35)	0.51
Wales	14	4- 16 ½	7 ½	6	85	9.4	12 ½	0.6
Scotland	12 ¾	15	5 ½	4	124 ¾	2 ½	10 ¼	¾

England, average: 7.3 pints/family, 1.6 pints=32 fl ounces per adult/week

Wales, average: 15 ½ pints/family, 68 fl ounces per adult/week

Scotland, average: 24.4 pints/family, 124 ¾ fl ounces per adult/week

Smith 1864, p.293-295, 297

Use of certain foodstuffs in percentage of families

	Oats used by % of families	Barley	Bread chiefly	Bread in part	Flour chiefly	Flour in part	Milk
England	20	0	30	50	60	90	76
Wales	60	13	4	8	83	87	100
Scotland	100	24	0	33	10	65	100

Medical Officers Report to the Committee of the Privy Council, Conditions of Nourishment, Smith 1864 P.P XX, p.296-297

Conclusion

While already in the 19th century statisticians noted that the mortality levels of all age groups obscured the fact that women and girls in England and Wales died at higher rates than men and boys, the differences were in many cases believed to stem from biological or other natural causes. The 20th century produced enough data to generate a revision of these views. Today it is widely acknowledged that excess female mortality of any age group stems from the environment or human agency rather than biology. Excess mortality has also been used to measure female deprivation caused by discriminatory practices in contemporary societies (Guntupalli and Baten 2009; Das Gupta 1987).

While the expectation would be that the British Isles of the past form a relatively homogenous area it would seem that the relation between male and female mortality had a different structure in mid 19th century Scotland than in England. The excess female mortality evident in the English countryside was absent. By the late 19th century there are indications of some change.

To find satisfactory answers more detailed work will be necessary examining local economic structure and employment opportunities for women, potential changes in agricultural practices and remuneration, potential changes in diet, health and migration. More studies of local conditions and the health of children should be included. The sample years also have to be extended to cover a larger number of years.

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