

Intergenerational effect of early nutrition on later reproductive success
Barbara Troesch, Gesuch: 294

There is mounting evidence that poor nutrition during early life does influence the child's development with consequences reaching into adulthood and possibly even further. In the case of girls, such an insult might still be seen in their offspring. In order to improve the present knowledge, this study examined data collected on a group of girls in a rural village in the Gambia. There, anthropometrical data together with some additional information the population has been collected from 1949 onwards that could be used for this study, which has been done as part of the MSc in Public Health Nutrition at the London School of Hygiene and Tropical Medicine.

Nutritional status was measured as weight- and height-for-age at between 18 and 30 month, as this time of life has been found to be associated with stable growth development. Fertility rate per year of reproductive life span, premature death, the age at the birth of the first child and the average as well as first birth interval were used as maternal characteristics for reproductive success. Moreover, gestational age, weight, head circumference and length at birth as well as perinatal death were included as proxies for foetal development. Both exposure and outcome measurements were tested on whether or not they were associated with seasonal influences, changes over the years, gender, age of the mother and gestational age. If necessary, the regression analysis was adjusted for the relevant factors.

The majority of measurements for maternal characteristics of reproductive success were found not to be related to weight- or height-for-age at around two years, while some evidence for a correlation with the indicators for intrauterine development were detected. In summary, it can be said that the study gives enough clues on the existence of such intergenerational effects to encourage further research on the topic. Moreover, it has shown that it is crucial to collect as much data on biological, economical, social and cultural factors in order to be able to filter out the "noise" that masks these subtle connections. Also, a life span approach should be chosen, as there may be especially sensitive periods during the development, but there are also many small, but continuing insults as well as catch-ups that cumulate over the years and thereby influence the outcome by aggravating or diminishing other effects. Therefore, more long-term studies covering a range of exposures as well as outcomes, completed with as much information on the examined subjects as possible.