

Households Headed By Women and Physical Growth of Schoolchildren in Tláhuac, D.F. (Mexico)

Florencia Peña Saint-Martin, Sergio López Alonso

Abstract

The present work is part of a research program examining the role of the family as mediator between basic human vital functions and social macro-processes. In order to evaluate conditions affecting physical development we examined the age-normed weight and stature of 410 primary school children who were enrolled in public primary schools of the Tláhuac delegation (one of the 16 political delegations in Mexico City). All schoolchildren had received a merit scholarship for their academic performance and were from poor families. Standardization of height and weight was done using the norms of the U.S. National Center for Health Statistics.

110 of these schoolchildren (68 girls and 42 boys) lived in households led by women. Among the 48 children with growth problems 15 (31%) were from female-led households. This finding indicates that this group of students has grown up in environments that have negatively affected their growth. Among growth delayed children households headed by women were over-represented at a rate almost double that of the general population.

This data from schoolchildren with scholarships from the Tláhuac program

demonstrates clearly the feminization of poverty and the structural vulnerability these women who single-handedly maintain households in conditions of poverty. At least among our subjects, we can conclude that households headed by women suffer a greater degree of poverty, that this poverty is passed on between generations and that it has a negative impact on children's wellbeing (as documented through growth parameters).

Introduction

The present work is part of a research program examining the role of the family as mediator between basic human vital functions and social macro-processes (economic, political, social, and cultural). In this study we attempt to bring out the recursive relationships between the action of the subjects and their daily lives with the negative impact that the worldwide implantation of the neoliberal economic model has had for the great majority of the world's population. Diverse studies have documented the important role that households play in cushioning the negative impact of the neoliberal economic model^{1 2 3} (among others), even though this cushioning has added additional burdens on families. One of the "strategies" of these households has been the incorporation of the women into the workforce, along with all available workers (children, the elderly, etc.),^{5 6} intensification of domestic work, since - in order to lower costs - services for the reproduction of the work force are no longer acquired in the market. Similarly, kinship ties are restructured in order to incorporate more salaried employees within the home and to have

Florencia Peña Saint Martin is a professor in the Graduate School of Physical Anthropology at the Escuela Nacional de Antropología e Historia. She coordinates the research program in: "Antropología y salud en sociedades contemporáneas" www.geocities.com/propaf2004 Sergio Lóez Alonso at the Centro INAH-Oaxaca slopez_alonso@hotmail.com

more women among whom to distribute domestic work and the care of the children, etc. Therefore, in this work we analyze female heads of household as an element of the growing complexity of the study of poverty and its impact on health.

This paper examines the weight, stature and age of 110 students (68 girls and 42 boys), who were enrolled in public primary schools of the Tláhuac delegation*† and who lived in homes headed by women. These children are a sub-sample of 410 Tláhuac primary school children (224 girls and 186 boys) from whom anthropomorphic and socio-demographic information was collected for a study entitled “Family Living and Health Strategies in the Metropolitan Zone of the Federal District. of Mexico.” This study was carried out by the Postgraduate Program in Physical Anthropology of the National School of Anthropology and History The field work was carried out during 1997 and 1998 in preschools of the Milpa Alta delegation, D.F and the municipalities of Nezahualcóyotl and Valle de Chalco Solidarity, Mexico State, as well as the schoolchildren of the Tláhuac delegation, D.F.

This project began with an understanding that critical research into the relationship between health and society had privileged class and territorial comparisons, setting aside the mechanisms of economic fragmentation within a given territory or within social classes. This

perspective constituted the main axis of our theoretical and methodological framework. Perspectives which are critical of clinical medicine and classic epidemiology emphasize that the nature and development of the pathological processes are found in the social structures within which their subjects exist. By adopting this epistemological position one sets aside their subjects’ activities of daily life, their culture, their senses, their emotions, their attachments, their life plans (with its enjoyments, frustrations and sufferings as well as the possibility of either realizing it or not). Also ignored are their individual self-conceptions and their understanding their surroundings, ideas they have actively developed from their own experiences of their social relations. From our point of view, these aspects impact the individual ways in which people live their lives and, therefore constitute important mediators of the historical present, of the society, of culture, of the family and of the particular history that the subjects is called on to to live⁶.

Figure 1.



Location of Tláhuac in Mexico City

In this project we adopted a multidimensional approach. We started off recognizing that social structures remain as they are, but are also in constant change, both because they are adopted and appropriated, but also because social actors recreate them as they internalize them and

* Mexico City, “the Federal District (DF)”, is divided in 16 political delegations: Álvaro Obregón, Azcapotzalco, Benito Juárez, Cuajimalpa de Morelos, Cuauhtémoc, Gustavo A. Madero, Iztacalco, Iztapalapa, Magdalena Contreras, Miguel Hidalgo, Milpa Alta, Tláhuac (shown in Figure 1), Tlalpan, Venustiano Carranza y Xocnimilco

† The collection of anthropometric data was carried out by graduate students in physical anthropology: Victor García, Eva Hernández, Inés Luna, Alicia Piña and Alejandro Rodríguez. Teachers Maria Elena Ortega and Licenciada Victoria Rodríguez, of the Tláhuac delegation, organized the fieldwork. Licenciada Victoria Rodríguez with the assistance of retired teachers, obtained the sociodemographic data.

incorporate them in their daily practices. While these structures condition and frame the action of social actors, they do not act mechanically, nor do they make social action fully predictable; from this perspective, social structures are neither rigid nor static, but are constantly reelaborated by the very action of the subjects. On the other hand, individual actions are not determined beforehand by their position in these structures; although these serve as inescapable historical framework, they are dynamic and, as they are greatly influenced by conjectural factors as well as subjective understandings, they are in constant flux.⁷

Thus, both social structures and individual actions are processes that constructed one another through an uninterrupted recursive interaction within structural contexts (class, gender, nationality), particular settings (school, family, neighborhood, etc.) and individual actions and experiences (face-to-face, subjectivity, affectivity, emotionality and personal biographical experiences, for example). To these processes we must add the interpretations of them made by researchers as subjects of study, as they themselves end up becoming part of the reality they are trying to understand.⁶

Family and health in poor, urban neighborhoods

From this exposition, it is possible to see that families living in poor neighborhoods have not been the passive victims of social injustice and economic disaster, but, consciously or not, they have used various strategies to make do in this unfavorable context.^{1,7,8,9} This does not negate the injustice inherent in the additional effort families have been forced to undertake in a setting of deepening social inequality. As has been previously noted, one of the “strategies” of these households has been the incorporation into the workforce of women^{5,10} and anyone else available (children, the elderly, etc. among others), as well as a restructuring of kinship relations and an intensification of domestic work. As a result, family dynamics have played a crucial role in the context of the new neoliberal economic order.¹

The family has been a critical mediating element between the macro-economy and the conditions in which the physical and emotional development of various family members happen. This development takes on distinctive patterns of physical development and particular profiles of morbi-mortality.

Nevertheless, the study of pediatric morbi-mortality and the process of growth and human development has not systematically included an analysis of family dynamics, the composition of kinship, the particular moment of the “life cycle” experienced by subjects, their trajectories and transitions and their life strategies. Thus, the entire tradition of growth studies in Mexico has not shed light on the social and cultural aspects in which the formative life stages occur. These social and cultural aspects include: child rearing practices¹¹, the culture of the childhood, games and recreation, childrens’ work,¹² their participation in domestic tasks,¹³ the quality of their personal relations, the presence or absence of violence,¹⁴ etc. Neither have these studies used “anchoring” family indicators (such as income, composition, etc.), that would allow longitudinal studies and would make comparable studies done in differing places, cultures, regions and times.

Within the framework of multidimensional social analysis of the social reality, we can affirm that structural contexts (class, gender, “race”, nationality, territory) have been the preferred lens to explain health, instead of using particular surroundings as a unit of analysis. This is true not only of data collection (school, family, material supports of the life, etc.), but also of individual actions and experiences (personal biographies, affective relations, accomplishments, frustrations and subjective world), and even more so of recursive relations.

It is undeniable that the family - based upon socially sanctioned relations of kinship, gender and generation – is the place where power is distributed culturally and where rights and obligations in the pursuit of well-being are structured on a base of the internal division of labor. This occurs even in the presence of tension

and conflict and the subordination of women and the dependency of children, the disabled and the elderly. It is here where the births happen, where the care of children and the sick is organized, and where budgetary priorities are made. Hygienic practices are carried out. Diagnoses are made. Therapeutic maneuvers are performed. Resources are allocated. Food is distributed. Spaces are assigned for recovery, rest, relaxation, etc. In all this the wife-mother plays the role of protagonist. Therefore, which happens in the domestic arena, in synergy with other macrosocial processes and personal biographies, plays a crucial role in the different ways we are born, grow, live, become ill, age and die.

From this perspective, it hardly surprising that the greatest risk of infant death occurs in families judged “vulnerable” (those where the parents are young, there are few sources of income and those households headed by women). Nor is it surprising that a large number of infant deaths occurs in a small number of families.¹⁵ The family, then, constitutes a mediator of particular importance between children and the rest of society because practically all relations pass through it¹⁶ and it cannot be left aside when studying health.[‡]

Research in Tláhuac[§]

In April of 1998, at the request of the Subdivision of Community Programs, Department of Citizen Participation, Mexico Government, Tláhuac delegation, an anthropometric evaluation of boys and girls in primary schools of this delegation was undertaken among children who were part of a program called “Stimulating Basic Education” (the Program). This Program was carried out the Office of the Undersecretary for

[‡] This means that the costs of more and more goods and services once considered a responsibility of the state are now transferred to the private sphere.

[§] Statistical data are taken from Mexico City Government (1996).

Regional Development in the Office of Secretary of Development.

The “program” consisted of a monthly subsidy of 300 pesos to each selected child, a monthly food basket for the family (provided by Liconsa, at that time a government-owned company) and the right to medical service for the scholarship holder, through the Secretary of Health. This initiative was in accord within neoliberal social policies of targeted social programs. Even now, such policies focus on sectors acknowledged as “poor” or “extremely poor” while the existence of the rest of the society is privatized, thus reducing radically the obligations of the state for the collective well-being.

In the economic logic of neoliberalism – which has traced Mexico’s overall path since 1982 – these types of actions are the answer to the fact that, for example, in 1991, of each 100 children enrolled in the primary school, only 58 graduated.¹⁷ The Secretary itself reported that although the causes of students dropping out are complex, they can be grouped into two large categories: endogenous (those due to the school system) and exogenous (the socioeconomic context in which the children live).¹⁷

Of these latter causes, poverty is one of the most important factors in why children leave school. This occurs mainly for two reasons. First is the cost of sending children to the school (although in Mexico primary education is gratuitous, parents must purchase supplies and uniforms, cover certain quotas, buy food, etc.) Second is the need to put children into the workforce or to set them to work within the home.

Until 1997, 45% of public primary schools participated in “the Program” and a total of 763,976 of children were granted a scholarship nationally. According to Sedesol¹⁷ 90% of the families of the supported children had incomes of 500 pesos or less; 76% were nuclear families and in 23% the boy lived only with the father, the mother or a guardian. 57% of the homes had five or less members; 26% had between 5 and 6 members and the remaining 17% had 7 or more.

The precise goals of the Program were:

- to encourage primary school retention among those students most at risk of not finishing,
- to encourage the healthy development of the students,
- to foment active and responsible participation in the operation of the Program by parents,
- to stimulate participation in educational, cultural and health activities that benefit school community.¹⁷

The selection of the scholarship recipients was done by students at the participating schools. In special sessions they nominated their classmates as candidates to obtain a scholarship. The list was later validated by a School Committee. Besides needing the scholarship, it was specified that the selected children showed aptitude for learning, had good grades and attended classes regularly. In order to maintain the scholarship, the students had to improve their grades and to maintain a minimum average of 8. Children who passed each semester remained within the Program.

In the D.F the Program was undertaken in the most marginalized neighborhoods, those with the poorest educational indicators and those where the children had evidence of more critical malnourishment.¹⁷ As a result the public primary schools of the Tláhuac delegation were included in the Program. In 1998 the delegation registered 429 scholarship holders. Of these, we were able to obtain anthropometric measurements on 410 (95,6% of the total), 224 girls and 186 boys. These children came from grades.

During the data collection process it became clear that many of the children came from households headed by women. In this paper we hope to contribute to the debate on whether or not such households face a situation of structural vulnerability that places them among the most underprivileged sectors, where, in addition, the transmission of the poverty takes place or - as certain authors insist - these are simply stereotypes that are not based on reality.

Characteristics of the Delegation

The Tláhuac delegation is located in the southwest of the Federal District (see figure 1), occupies 85,346 kms². According to the last census, it then had 257,118 inhabitants, representing 3.03% of Mexico City's population (currently Tláhuac's population is 344,106).^{**} The population is young; 60% are less than 30 years old. Families contain an average of 5.2 people; this is higher than the mean family size of 4.5 in the rest of Mexico City. Since pre-Columbian times it has been an important region in the Valley of Mexico, seven of Tláhuac's towns: San Francisco Tlaltenco, Santa Catarina Yecahuizotl, San Pedro Tláhuac, San Juan Ixtayopan, San Nicholas Tetelco, San Andres Mixquic, Santiago Zapotitlán, have their historical roots in this period. These towns, together with the regions known as the Olive trees, the Nopalera, the Sea Colony, Hidalgo, Centroamericana and Zapotitla, form the delegational coordinates of the City Government in this part of Mexico city.

The economically active population (EAP) of Tláhuac was 61,253 inhabitants, 29% of the total population. 58,87% of the EAP worked in the tertiary sector, 34,8% in secondary and 3,49% in the primary one. This underlines the tendency of primary sector employment to leave this part of Mexico City. In 1980, 13.15% of the EPA declared itself to be involved in farming; this represents a decrease of 9.66% in ten years.

With respect to wages, this was clearly "a poor" region, which explained its inclusion in the Program. 1.2% of the EAP did not receive any income, 23.8% earned less than the minimum wage, 40.3% earned between one to two times the minimum wage, 13.7% earned between two and three times the minimum wage, 6.2% from three to five times the minimum wage, and only the 3.1% earned more than five times the minimum wage; 2,7% of the EAP did not provide data).¹⁸

^{**} <http://en.wikipedia.org/wiki/Tlahuac>, June 24, 2007

The kaleidoscope of households headed by women

It has been pointed out multiple times (for example^{19,20}), that the terms households headed by women, female-run homes, one-parent homes (generally made up of a single woman and her unmarried children) include a great variety of differing situations for the women. These may involve female breadwinners (those women, who despite a cohabitating partner, are the main or sole source of income in the home; some studies indicate these women face the highest levels of poverty and violence²¹), effective female heads of household (or *de facto*, women who have a partner and may even be economically dependent upon them, but are the sole ones responsible for the daily organization of the domestic life, for example, the wives of migrants, of alcoholics, those that have non-cohabitating partners, typically, women who are lovers of married men), single mothers (mothers in charge of children who have never had a cohabitating partner, oftentimes because they are abandoned when they become pregnant and their partner finds out) mothers with a cohabitating partner, but who are still the sole provider for children from previous unions,²² a situation characterized by instability and tension, brought about precisely by the presence of children of another father), women who are separated or divorced (among whom the cause of the separation and who wanted it are important in determining the quality of life) and widows. These women are in diverse positions and, in addition, organize their family life in very different ways. As Di Marco affirms: “the female-headed household is the result of a long process in the life cycle of women, especially for women who are separated or who never cohabitated with the biological father(s) of their children.”²³

Considering that the household is the daily space for social relations, the gender of the “head” is very important. However a detailed study of households led by women and their organization, compared to household led by men would need to differentiate between power and authority in the analysis of family dynamics.²² According to this

author, “power allows one to have resources, to control the life of the other, but it does not necessarily imply the recognition of legitimacy to assume decisions and be respected and valued for that reason”. Apparently it is in households headed by women where there is a greater correspondence between power and authority, eliminating sources of internal tension. Decreased violence and internal conflicts have been noted as of the main relative advantages of households headed by women alone with their children; this is, nevertheless, a finding that has been little investigated.

The debate on female-led households

There is an abundant bibliography (among others^{24,25,26,27,28}) relating households headed by women to extremely precarious living conditions and with structural social vulnerability. These form part of the machinery by which poverty is reproduced across generations.

Among the main disadvantages of households headed by women are considered to be the following:

- Higher levels of poverty level due to the particular disadvantage derived from being both a woman and a head of family.
- Although these families generally have less members, they also have less income-earning adults.
- The women are less likely to be employed or may not work at all. As a result they own less goods and have less access to good jobs and productive resources.
- In these homes, generally, the women not only do the domestic work but are also responsible for maintaining the house economically. Consequently, they have less time and mobility.
- Women’s participation in the workforce jeopardizes the well-being of their children.
- Women who are heads of household face greater discrimination when applying for a job.

- Adolescent pregnancy, households run by women and the transmission of the poverty from one generation to another may be related (Sanchez Lamb, Olga. Conference: “La mujer como jefa de familia” “Women as heads of household”, 2C, <http://www.scjn.gob.mx/Ministros/oscgv/Conf/Conf-006.htm>, July 11, 2007).

On the other hand, it has been pointed out that a woman’s income and her freedom to spend the family budget are better predictors of her children’s nutritional state of the children, than a male partner’s wage and its availability to her.²² In addition the households headed by women are subject to less tension and violence.^{29,30}

In a recent work Chant²⁹ highlights one of the stereotypes that more than others have biased research on female heads of household, particularly for single mothers. It is the idea that these households are “the poorest of the poor” and their situation is “bad for the children.” According to her research in low income groups in Mexico and Costa Rica, these points of view are not based on reality. González de la Rocha³¹ points to recent Mexican data that make clear that “the poorest among the poor” are those homes headed by men where the sole income comes from the woman, and not those households headed by women. economies are based exclusively on feminine The second most poor households are those headed by women who rely exclusively on a masculine income. This leads us to conclude that it is a lack of a combined masculine and feminine income that makes households vulnerable and not the gender of the household head.

In the ideological sphere Di Marco²² emphasizes that society is moving towards a greater acceptance of diverse family and parental arrangements. This can make life easier for many single mothers, granting them a greater sense of personal and civil legitimacy in a context where households headed by men have traditionally been seen and promoted as a social ideal. As a result this diminishes their structural vulnerability.

Households led by women in Tláhuac^{††}

From the data we successfully obtained in Tláhuac, we can make important contributions to this debate and go beyond the studies that compare different areas. The children in our study attended the same primary school and shared the same material resources, but came from households headed by women. From a total sample of 410 children, 110 (26.8%) lived in a home with a female head of household. 284 (69.3%) lived with both of their parents and 13 (3.2%) did not reside with either of their parents. Nationally 17.3%³¹ of Mexican households are led by women; therefore among our scholarship holders the percentage of households led by women was 9.5% greater than the national average. Given the fact that the scholarship holders were chosen by their own classmates as needing economic support, the number of family-led families would indicate that, at least in Tláhuac, households headed by women abounded among the poorest of the poor.

Human Growth and Development as Health Indicators

Given its particular evolutionary history, the human species is distinguished by the fact that - at the time of the birth infants are still immature and a good part of physical development must take place outside of the womb.³² Perhaps the main evolutionary advantage of this particularity lies in guaranteeing conditions for the development of the enormous complexity of the central nervous system, the fundamental physiological basis of language, abstract thought and the appropriation and recreation of culture and

^{††} Within the framework of Mothers Day, 2004 Day of (http://www.e-mexico.gob.mx/wb2/eMex/Dia_Madre), it was announced that 4.1 million households were headed by women; women are the sole wage earners for the households of approximately 16 million Mexicans. According to the 2000 National Employment survey, there were 8.5 million working mothers in Mexico; they represent 1/5th of the Economically Active Population.

social relations, intrinsic characteristics of the genus *Homo*. However, the physiological possibility of being humanized has a clear biological cost. During the first years of life human beings are utterly dependent upon others and quite labile.

With the necessary parental care, a positive emotional environment, proper feeding and health surroundings, children grow and develop without problems. But they are quite vulnerable when placed in an inadequate environment. For example, during the first years of the life their growth decelerates, i.e., they grow less centimeters in a given time period than the average child of their own age. This is a physiological adaptation in the setting of nutritional deficiencies. With relative ease they die of diarrheas and acute respiratory diseases, almost always related to the presence of poverty, negligence on the part of caretakers and the related problem of protein-caloric malnutrition. This physical vulnerability in the first years of the life make studies of growth and development very important in the assessment of health and of infant and pre-school mortality. Growth and development are important indicators of children's well-being - or the lack of it - allowing comparison between countries and regions.

Nevertheless, as human beings we are born with an enormous capacity to adapt to our surroundings. Our biological development takes place in a constant and unavoidable interaction with the extraorganic context that surrounds to us. For this reason, our environment plays an enormous role in conditioning our "biological life cycle", determining the duration of its stages, molding our speed of growth, our rate of maturation (in the women, for example, this is seen in the changing age of menarche), as well as in turning us into members of specific social groups and specific cultures. This later is, perhaps, the irreducible basic necessity, although it may be omitted from the list. The constant interaction between biology and culture can be demonstrated through language and thought: while, on the one hand, our biology provides a physiological basis

for our mental and phonological capacities, the cultural context is the one that determines which will be the symbolic codes that will condition our thought, as well as through which language we will express them, being both inseparable spheres, since they are recursive and interdependent.

However, like other species, our development from the conception to adulthood follows species-specific pattern. It seems directed by a "biological clock" that marks the cadence of the different stages of the life cycle of each individual. Western culture theorizes these stages as: childhood, preadolescence, adolescence and adulthood,³² with events marking the transition from one stage to another one: to maintain the head, to sit down, to crawl, to walk, the first stammering, the joining of words and phrases, the eruption of teeth, sexual maturation, reproduction, etc. But its also evident that this "clock" does not exist in the abstract, but always "adjusts" to the surrounding social and cultural conditions, also in recursive and reciprocal relations. Thus, birthweight, rates and speeds of growth, age of sexual maturity, the appearance of primary and secondary sexual characteristics, modifications in the growth due to sport activities, years before the aging process and life expectancy are results of the starting a biological clock, but occur in specific social contexts which adjust the clock constantly.

Given this situation and in agreement with other authors, it is important to point out from a theoretical point of view that we are a plastic species. We are able to start off an irreversible process of ontogenesis that essentially structures the formative stage of the life (approximately the first 20 years) and which they condition the "life cycle" specific to each developmental age. Plasticity refers to an organism's ability to change to its biology and its behavior during ontogeny in order to adapt to the extraorganic conditions in which we develop.³³

Female-led households and pre-school growth

However, for the reasons set out previously, it is possible to use Height-for-age and Weight-for-age to evaluate the conditions in which the

development of a child took place at a given time. It must be recognized that this evaluation is a synchronous one, since the physical condition at any one point summarizes a prior developmental history. In this study, the evaluation took place by comparing the data from the children of Tláhuac with those of the *National for Center Health Statistics* of United States.³⁴ It is accepted that children who are below two standard deviations (*score z*) in either Height-for-age or Weight-for-age have problems. In Tláhuac 48 scholarship holders, 11.7% of the total, had some kind of problem during their physical development. Of the 48, 15 students (31.25%), lived in homes headed by women. This means that practically a third part

of the children with some kind of growth problem came from a home with this particular domestic arrangement. Thus, among children whose environment negatively impacted upon their health, female-led households were over-represented; their proportion was nearly double that of the general population.

Nineteen scholarship holders (7,1% of the total) had low Height-for-age, 7 of whom lived in homes headed by women (36,8% of the 19). 6 students had low Weight-for-age, one belonged to a female-led household (17% of the 6). 22 had combined low height and weight for age; 7 belonged to one-parent homes where the father was absent (31.8% of the 22).

Picture 1
Distribution of problems of growth by type of familiar unit

Developmental Problem	Children from Households led by women	Children living with both parents	Children living with neither parent
Low Height for Age	7	11	1
Low Weight for Age	1	5	0
Combined low height & weight for age	7	14	1
Totals	15	30	2

Source: direct survey, 1998

The majority of the mothers who were heading households in this study lived alone with their school age children (13 of 15) and were the sole wage earners (13 of 15). Six (40% of the 15) worked as domestic employees, receiving very low wages. Only two shared the house with other relative; in both cases the relatives also contributed to the familiar budget.

Final reflections

This data from students enrolled in the scholarship Program of Tláhuac, make clear both the feminization of the poverty and the structural vulnerability of women who maintain their

homes alone in conditions of poverty. Although they manage the family's resources a large percentage of their children show problems in their physical development. The situation in Nezahualcótl city is different. There single mothers live in extended families.^{35,36} However, at least in the conditions found in the women of Tláhuac, we can speak of greater poverty in the households led by women, as well as of the association of the intergenerational reproduction of poverty with these households. And we can, using growth parameters, document the negative impact on the physical well-being of the children. Nevertheless, it is also necessary to

point out that these children had done well in school and that the children of 95 female heads of household living in the area did not show growth problems. This may be due to the fact that they lived in extended families where expenses were shared as was found in Nezahualcótl. This question will be examined in a parallel study.^{36, 37}

Annex

Brief description of the female heads of household, mothers of students with physical growth problems

Mother of girl 004

47 year old woman who lives with her three daughters (in all cases the scholarship student is a child) and two nephews. A domestic worker, she is the sole income earner and brings home 700.00 pesos monthly ones. The girl has low stature for her age. (Score $z = -2,61$, percentile = 0.45)

Mother of girl 008

40 year old widow who lives with her 9 children; the scholarship holder is youngest. The mother is the only one who works. She is a seller and obtains 1,100.00 pesos monthly, this information is not considered reliable. The daughter has low stature for age. (Score $z = -2,61$, percentile = 0.45)

Mother of boy 035

29 year old woman who cares for children (as a nanny) and earns 1,000 pesos monthly. She has three children (11, 10 and 8); the scholarship holder is youngest. The boy has low stature and weight for age. (Score $z = -3,17$, percentile = 0.08)

Mother of girl 077

38 year old woman who lives with her eight children, two of whom contribute to the family income. She is a domestic worker with a wage of 720 pesos monthly. The scholarship holder is 8 years old and is the second to the last child. The girl has low stature and weight for age. (Score $z = -2,38$, percentile = 0.87)

Mother of boy 090

45 year old woman who works as a domestic employee, with an income of 700.00 pesos monthly. She lives with her three children (15, 15 and 12), the scholar is youngest. He has low stature for age. (Score $z = -2,06$, percentile = 1.99)

Mother of a boy 092

36 year old woman whose only child is the scholarship boy. She lives with her two parents. The grandmother of the scholarship holder is the one that works, earning 600.00 pesos monthly. He has low weight for age. (Score $z = -2,49$, percentile = 0.64)

Mother of a boy 112

32 year old woman who dedicates herself to commerce; income of 1,500.00 pesos monthly. She lives with her 5 children (16, 14, 12, 10 and 4), the scholarship holder is 12 years old. He has low stature for age. (Score $z = -2,16$, percentile = 1.52)

Mother of girl 163

32 year old woman who lives with her two daughters (10 and 8); the scholarship holder is youngest. She is working and earns 1.000 pesos monthly. The girl has low stature and weight for age. (Score $z = -2,69$, percentile = 0.36)

Mother of girl 169

27 year old woman, domestic employee with a wage of 350.00 pesos monthly (this information is not considered credible). She lives with her three children (12, 10 and 8); the scholarship holder is youngest. She has low stature and weight for age. (Score $z = -1,95$, percentile = 2.57)

Mother of a boy 249

47 year old woman, domestic employee, earns 400.00 pesos monthly and lives with her two children of 18 and 11 years. The scholarship holder is youngest. He has low stature and weight for age (Score $z = -1,98$, percentile = 2.40)

Mother of girl 283

32 year old woman, seamstress who earns the minimum wage. She has two children of 8 and 6 years; the scholarship holder is the older one.

She lives with her mother, three brothers and one sister; the three men are photographers and contribute to the home. The daughter has low weight for age. (Score $z = -1,57$, percentile = 5.79)

Mother of girl 345

29 year old woman, unmarried mother, working with wage of 860,00 pesos monthly, lives with her mother. The scholarship holder is 12 years old. She has low stature for age. (Score $z = -2,40$, percentile = 2.29)

Mother of girl 346

29 year old woman with seven children between 12 and 3 years of age. She works selling juice and earns 1,080 pesos monthly. The scholarship holder is the second child and has a twin sister. She has low stature and weight for age. (Score $z = -2,09$, percentile = 1.83)

Mother of girl 367

40 year old woman, domestic employee with an income of 800 pesos monthly. She lives with her two children aged 17 and 13, the scholarship holder is youngest. He has low stature for age (score $z = -2,81$, percentile = 0.25)

Mother of girl 399

34 year old woman, filing assistant of file with wage of 1,000 pesos monthly. She lives with her five children; the scholar is a middle child. She has low stature for age (score $z = -2,03$, percentile = 2.12)

References

1. Benería, Lourdes (1992). The Mexican debt crisis, the labour market and the household. En: Lourdes Benería y Shelly Feldman, *Unequal burden. Economic crisis, persistent poverty, and women's work*. Boulder, Westview Press, pp. 83-104.
2. González de la Rocha, Mercedes (2000). "Private adjustments. Household responses to the erosion of work". *Choices of the poor. Lessons from national poverty strategies*. United Nations Development Program, Washington, D.C., pp. 55-88.
3. González de la Rocha, Mercedes (2003). "The construction of the myth of survival". Ponencia presentada en el seminario: Gender myths and feminist fables: Repositioning gender in development policy and practice, Institute of Development Studies, Sussex, 2-4 de julio.
4. García, Brígida y Orlandina de Oliveira (1994). *Vida familiar y trabajo femenino en México*. El Colegio de México, México.
5. Rendón, Teresa (2004). "El mercado laboral y la división intrafamiliar del trabajo". En: Marina Ariza y Orlandina de Oliveira (coordinadoras), *Imágenes de la familia en el cambio del siglo*. Instituto de Investigaciones Sociales, UNAM, México, pp. 49-88.
6. de la Garza, Enrique (2006). ¿Hacia dónde va la teoría social?. En: Enrique de la Garza (coordinador) *Tratado latinoamericano de sociología*, UAM-Iztapalapa, México, y Editorial Anthropos, Barcelona, pp. 19-38.
7. González de la Rocha, Mercedes (1997). "Hogares de jefatura femenina en México", Ponencia presentada en el XX Congreso Internacional de la *Latin American Studies Association*, Guadalajara, Jalisco, 17-19 de abril.
8. González de la Rocha, Mercedes (1999). "A manera de introducción. Cambio social, transformación de la familia y divergencias del modelo tradicional". En: *Divergencias del modelo tradicional. Hogares de jefatura femenina en América Latina*. CIESAS y Plaza y Valdés Editores, México, pp. 19-36.
9. González de la Rocha, Mercedes (2003). "The construction of the myth of survival". Ponencia presentada en el seminario: Gender myths and feminist fables: Repositioning gender in development policy and practice, Institute of Development Studies, Sussex, 2-4 de julio.
10. García, Brígida y Orlandina de Oliveira (1994). *Vida familiar y trabajo femenino en México*. El Colegio de México, México.
11. Osorio, Rosa María (2001). *Atender y entender la enfermedad. Los saberes maternos frente a los padecimientos infantiles*, México, Biblioteca de la Medicina Tradicional Mexicana. Instituto Nacional Indigenista-Centro de Investigaciones y Estudios Superiores en Antropología Social-Consejo Nacional para la Cultura y las Artes, Instituto Nacional de Antropología e Historia.
12. O'Donnell, O., E. Van Doorslaer y F. Rosati (2002). Child labour and health: Evidence and research issues. Understanding Children's Work. An Inter-Agency Cooperation Project. International Labour Office, UNICEF y World Bank.
13. Francavilla, Francesca y Scott Lyon (2003). Household chores and child health. Preliminary evidence from six countries. Understanding Children's Work. An Inter-Agency Cooperation Project. International Labour Office, UNICEF y World Bank (draft).
14. Herrera, Rebeca (2004). En el silencio de su soledad. La reproducción de la violencia intrafamiliar en Valle de Chalco Solidaridad. Tesis de Doctorado en Antropología, Facultad de Filosofía y Letras, UNAM.
15. Bronfman, Mario (1998). *Como se vive, se muere. Familia, redes sociales y muerte infantil*. Centro Regional de Investigaciones Multidisciplinarias, UNAM, México.
16. Echarri, Carlos (2003). *Hijo de mi hija. Estructura familiar y salud infantil en México*. El Colegio de México, México.

17. SEDESOL (1997). Lineamientos de operación básica del programa "Estímulos a la educación básica", Secretaría de Desarrollo Social, Subsecretaría de Desarrollo Regional, México, mimeo.
18. Gobierno de la Ciudad de México (1996). *Monografía de Tláhuac*. Gobierno de la ciudad de México, México.
19. Chant, Sylvia (1999). Las unidades domésticas encabezadas por mujeres en México y Costa Rica: perspectivas populares y globales sobre las madres sin pareja. En: Mercedes González de la Rocha (coordinadora), *Divergencias del modelo profesional: hogares de jefatura femenina en América Latina*. CIESAS y Plaza y Valdés, México, pp. 97-124.
20. de Oliveria, Orlandina y Brígida García (2004). Mujeres jefas de hogar y su dinámica familiar. Ponencia presentada en el I Congreso de la Asociación Latinoamericana de Población, Caxambú, Brasil, 18 al 20 de septiembre.
21. Cortés, Fernando y Rosa Ma. Ruvalcaba (1995). *El ingreso de los hogares*, tomo VII, INEGI, México.
22. González, Antonieta y Florencia Peña (1998). "Condiciones de vida y salud de un grupo de mujeres jefas de familia de la delegación Tlalpan, D.F." *Salud Problema*, Nueva Época, 1(1):33-48.
23. Di Marco, Graciela (1997). "Las madres solas". Ponencia presentada en el XX Congreso Internacional de la *Latin American Studies Association*, Guadalajara, Jalisco, 17-19 de abril.
24. Buvinic, Mayra (1990). "*The vulnerability of women-headed households: Policy questions and options for Latin America and the Caribbean*", The Population Council, mimeo
25. Folbre, Nancy (1991). "Women in her own: Patterns of female headship." *The women and international development annual*, vol 2, R. Galin and A. Ferguson (eds.), Westview Press, Boulder.
26. Acosta, Félix (1994). "Los estudios sobre jefatura de hogar femenina y pobreza en México y América Latina". *Las mujeres y la pobreza*, GIMTRAP y El Colegio de México, México, pp. 91-117.
27. Acosta, Félix (1998). "Hogares con jefas mujeres y bienestar familiar en México". En: Beatriz Schmukler (coordinadora), *Familias y relaciones de género en transformación. Cambios trascendentes en América Latina y el Caribe*. Population Council, EDAMEX, México, pp. 155-207.
28. Acosta Díaz, Felix (2001). Jefatura de hogar femenina y bienestar familiar: Resultados de la investigación empírica. *Papeles de Población*. Abril/ junio. CIEAP/ UAEM, Toluca, México, pp. 41-97
29. Chant, Sylvia (1988). "Mitos y realidades de la formación de las familias encabezadas por mujeres: el caso de Querétaro, México." In: L. Gabayet, P. García, M. González de la Rocha, S. Lailson and A.
30. Escobar (Comps.), *Mujer y sociedad: salario, hogar y acción social en el occidente de México*. México: l Colegio de Jalisco and Centro de Investigación de Estudios Superiores en Antropología Social de Occidente, pp. 181-204.
31. Chant, Sylvia (1994). "Women, work and household survival strategies in México, 1982-1992: past trends, current tendencies and future research." *Bulletin of Latin American Research*, 13(2):203-233.
32. González de la Rocha, Mercedes (1999). Hogares de jefatura femenina en México: patrones y formas de vida. En: Mercedes González de la Rocha (coordinadora), *Divergencias del modelo profesional: hogares de jefatura femenina en América Latina*. CIESAS y Plaza y Valdés, México, pp. 125-151.
33. Bogin, Barry (1999). *Patterns of Human Growth*, Cambridge University Press, Cambridge.
34. Lasker, Gabriel (1969). Human biological aptability. *Science*, 166, pp. 1480-1486.
35. National Center for Health Statistics (2000). <http://www.cdc.gov/nchs/> 14 de enero del 2000.
36. Vázquez Morales, Víctor Alejandro (2000). *Jefaturas de hogar femeninas y crecimiento de preescolares. El caso de Ciudad ezhualcóyotl*. Tesis de licenciatura en antropología física. ENAH- INAH.
37. Vázquez Morales, Víctor Alejandro y Florencia Peña Saint Martin (2006). Encrucijadas de las madres solas del municipio de Nezahualcóyotl, Estado de México. Miradas a partir del crecimiento de sus hijos. En: Florencia Peña y Arturo Alonzo, *Cambio social, antropología y salud*, PROMEP-SEP y ENAH-INAH, México, pp. 103-124.

