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Social and dietary practices of Soweto families who protect agains overt malnutrition in their children

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2015-01-09
http://hdl.handle.net/10539/16324

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tion by inducing the respondent to elaborate on initial remarks. Further, the interviewer was cautioned not to suggest possible replies, but to maintain a neutral role and to act as a medium through which questions and answers be transmitted (Backstrom and Hursch, 1963; Stacey, 1970; Wiseman and Aron, 1970; Babbie, 1973; and Simon, 1979)

The researcher and the interviewer worked closely together throughout the entire data collection period of the study. Contact was made almost daily where the interviewer reported details of the interviewing to the researcher and the researcher gave the interviewer information regarding the names, addresses and times mothers were most likely to be home.

Once all the data were collected, the interview schedules were scored by the researcher. Means were found of quantifying the wide variety of subjects' responses obtained in the interviews. Every interview schedule was separately reviewed by the researcher, after which a code scheme was devised for each question.

For example, in response to the question, "What type of non-breast milk is the child consuming and how is it diluted?", 14 alternative breast milk substitutes were used. These had to be categorised into Humanised milks, Hypo-allergenic formulae, etc. Then for each respondent, specifications of dilutions (e.g. 3 heaped teaspoons of milk powder to 1 cupful of water) had to be converted into grams and millilitres and compared to the particular name brand/product's directions for correct dilutions.

This is but one of the many examples that occurred throughout the interview schedule, all of which required extensive reference to the literature and consultations with various multidisciplinary professionals and marketing personnel (see Appendix A for the Interview Schedule and Code Schemes). The missing information on incomplete interview schedules was coded as "don't know" or "no response", according to the interviewer's note.

On completion of the coding procedures, data was computed and statistical analyses performed.

4.5 Statistical Analyses

Coded data was electronically processed by the Computer Centre of the University of the Witwatersrand, Johannesburg using the Statistical Analysis System (SAS) programme. This resulted in the data being organised into the Case group, the Control group and the overall sample; and ordered in frequency arrays. Data was also analysed in terms of essential first order differences (e.g. means and standard deviations). Frequencies and first order differences were selected as appropriate statistical procedures because of their use in quantifying and thereby identifying differences between the two groups – a fundamental aim of the present study.

The statistical significance of differences between the Case and Control groups were established by means of the parametric two tailed t-test. The Kolmogorov-Smirnov two sample test was applied to the cumulative distributions (e.g. the birth intervals). The test for differences of proportion using the normal (z) distribution was performed between the Case and Control groups.

Statistical tests of significance were calculated at the 0,05 and 0,01 probability levels. The particular level of significance has been indicated in each case with the corresponding finding (see chapter 5).

4.6 Methodological Limitations

The limitations of the methodology used are seen to be the following:

(i) the present study is descriptive in design and lends itself to a quantitative understanding of the social and dietary aspects of Soweto families with PEM and AN children. It was beyond the scope of the study to examine more qualitatively the in-depth features of these families and their environments. To do so, it would be necessary to incorporate the proposed design of Rosen et al (1978:2) which was to include an "anthropological case study using participant observation of positive deviant families whose children avoid overt PEM despite economic deprivation, and negative deviant families whose children have overt PEM";

(ii) the use of a case-control survey design to identify risk factors and protective practices was limited to hypothesis-generation and thus needs to be confirmed by a cohort study. Further, because the nature of the present study was exploratory, it is unlikely that all salient characteristics of the children's physical, dietary, social and economic conditions were investigated. As McKendrick (1980:15) explains: "this means that apparent relationships between variables must be viewed with caution, since they may be affected by yet other variables not covered by the research design";

(iii) since the present cross-sectional survey is essentially a prevalence study, it cannot establish the temporal sequence of events necessary for proving causality. But, as Nisbet and Entwistle (1974:15) claim, causal inferences may be drawn when one event is invariably followed by another;

(iv) some of the information required for the present study was both objective and uniformly available for all subjects i.e. data from routine hospital files that was accurately recorded and various facts relating to the physical and social environment of the child. However, some of the information obtained by the interviewer through the use of the interview schedule may be less accurate. The mother may have had inadequate knowledge of, for example, household members' incomes or child care patterns when others besides herself looked after the child. Also there is the possibility of problems with memory or bias resulting in distorted recall of past events. At the time of the study both Cases and Controls were already diagnosed and mothers may have been more likely to search for explanations for the child's condition. Conversely, the mother may have concealed relevant information. These limitations hold for both Cases and Controls and a measure to ascertain whether or not the mother was accurately reflecting the situation, was for the interviewer to note whether or not she thought the mother was being honest. The interviewer considered 93% of mothers to be "telling the truth" and 7% of mothers to be possibly distorting or concealing information (there was no significant difference between Case and Control mothers);

(v) the difficulties of a white researcher investigating the 'Black social world' have been alleviated to some extent by employing a Black interviewer. But, as Simon (1986:3) explains, the problem with relying on a Black interviewer is that "it is in all probability,

not possible for a white project director to check upon the procedures of data gathering, reliability of the findings, etc.";

(vi) with the use of an interviewer, there must be some degree of interviewer bias. Despite the interviewer being unaware as to whether the mother's child was a PEM Case or an AN Control, the interviewer correctly determined the nutritional status of 76% of the children. This perception on the part of the interviewer may have affected her attitude towards some mothers, thereby influencing those mothers' responses.;

(vii) all children admitted to the hospital or examined at the clinics, who complied with the specified criteria, had an equal chance of being selected as subjects. Nevertheless, generalizability of the research results is limited to those Soweto families whose children utilize hospital or clinic services, a practice which may well be unrepresentative of patterns in the general population. The sampling was however deliberately not according to the incidence of PEM and AN in the Soweto population, because the research objective was to discover differences, to compare and to draw a profile of the two groups rather than to establish representations; and

(viii) the study is based on the assumption that "the personal experience of the individual child and his/her susceptibility to PEM are the factors to be studied, and then modified to prevent PEM" (Cohn, 1978:19). Inter-family comparisons between Cases and Controls is limited because the nutritional status of the child's siblings were not determined – this was not feasible because of general unavailability of siblings, and/or information concerning their nutritional status. Thus PEM Cases may have adequately nourished siblings, and likewise adequately nourished Controls may have PEM siblings.

Chapter 5. Findings

As a considerable amount of data was obtained in the research study, emphasis is given to differences that are significant or approaching significance. Attention is also given to similarities to demonstrate a degree of comparability between the two groups.

The data has been ordered and presented in terms of the structure given in figure 1 overleaf.

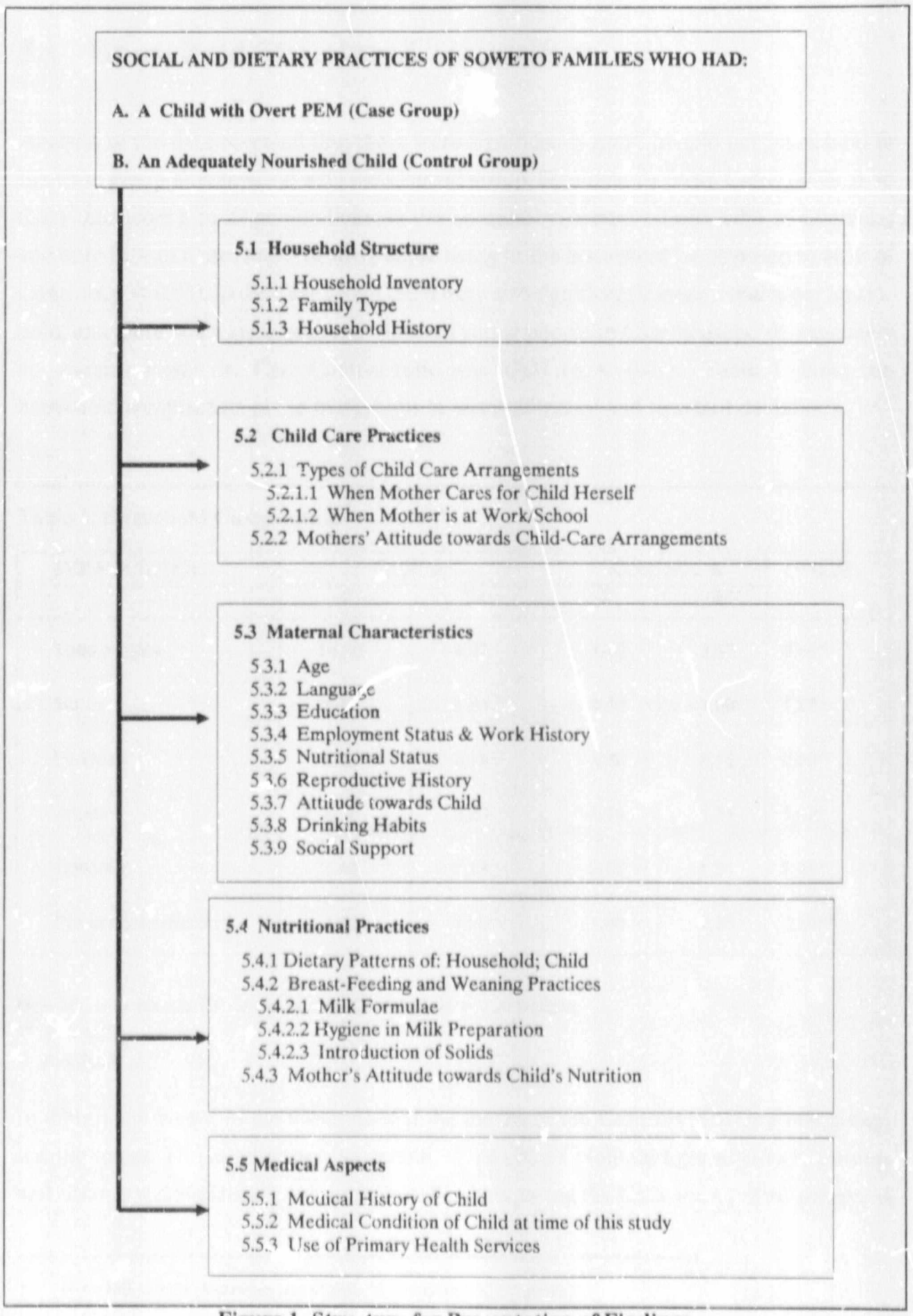

Figure 1. Structure for Presentation of Findings

5.1 Household Structure/Composition

Analysis of the data revealed that there were significantly more people per household in the Case group as compared with the Control group. Significantly more Cases (84%, $p < 0,05$)[1] had from 6 to 22 people living in the household (compared with 60% of Controls) and only 16% of Cases had 5 or less people living in the household (as opposed to 40% of Controls, $p < 0,05$). In the Case group there were also significantly more females per household, and there was a great preponderance of young people in Case households, especially adolescents where the Case:Control ratio was 63:37 ($p < 0,01$). Table 1 shows the household composition of the two groups in terms of means and standard deviations.

Table 1. Household Composition

PER HOUSEHOLD	CASE %		CONTROL %		t VALUE
	$\bar{x}$	Sx	$\bar{x}$	Sx	
Total people	10,30	4,37	7,40	3,37	3,46**
Males	3,98	1,85	3,50	1,89	1,27
Females	6,32	3,13	3,92	2,18	2,08*
Adults	4,52	2,20	3,74	1,77	1,97*
Children	3,48	2,18	2,56	1,51	2,45*
Pre-school children	2,30	1,30	1,60	0,90	3,24**

N = 100 households (50 Cases and 50 Controls); N > 100 people.
** $p < 0,01$
* $p < 0,05$

In table 1 the means of the Cases exceed the means of the Controls in all but one group, viz. the males. The number per household of the child's biological grandparents, parents and siblings was statistically insignificant when comparing the Case and Control groups, as

1 N = 100, unless otherwise stated (i.e. 50 Cases and 50 Controls).

was the ratio of the child's siblings to other children in the household: Case 66:174, Control 47:128. Table 2 shows the mean number of the child's grandparents, parents and siblings per household.

Table 2. Generational Spread

PER HOUSEHOLD	CASE %		CONTROL %	
	$\bar{x}$	Sx	$\bar{x}$	Sx
Child's Grandparents	1,08	0,75	0,78	0,79
Child's Parents	1,26	0,49	1,40	0,57
Child's Siblings	1,32	1,53	0,94	1,19

N = 100 households (50 Cases and 50 Controls); N > 100 people.

The mean number of rooms per household in both groups was 3,32 (SD 1,25), but because there were more people per household in the Case group, the mean number of people per room in the Case group (3,50; SD 2,50) was significantly greater than in the Control group (2,65; SD 1,38, $p < 0,01$)[1] > 100 people because there are at least 2 people (mother + child) in the smallest household, and usually many more. Bearing in mind that there were also more young (and therefore economically dependent) people in the Case group, the level of income per person in Case households was far lower than in Control households. Only 27,5% of people in the Case group were economically active, compared with significantly more (36,7%) in the Control group ($z = 2,34$, $p < 0,01$).

These figures showed that there were 88 more people in the Case group, none of whom contributed to the household income (Hawking, Shebeening and other informal sector activities were included in the definition of economic activity – see Interview Schedule/ Code Scheme in Appendix A, question 66).

Although both Case and Control groups had elements of impoverishment, the central issue under household structure/composition was that of greater impoverishment in the Case

1 N = 100, unless otherwise stated (i.e. 50 Cases and 50 Controls).

group. This is further illustrated by the findings related to the household inventory, as indicated in the section that follows.

5.1.1 Household Inventory

The inventory of household possessions provided an indication of family wealth. The research plan was to evaluate family wealth by means of a combination of the household inventory, together with information concerning the household expenditure, and the occupation and earnings of household members. However, it was not possible to perform statistical analyses on the data obtained from the latter two inventories (see section 4.3, The Research Tool).

Certain items from the household expenditure have nevertheless been included in the household inventory. The amount of money spent on these items could not be calculated, but it has been noted whether or not these items constituted household expenses.

Table 3. Inventory of Household Possessions and Selected Expenses

Inventory and Expenses per Household		Case %	Control %	z Score
Crops and/or Livestock		8	4	–[1]
Fence		66	80	-1,58[v]
Electricity		76	66	1,10[v]
Plumbing:				
	- outdoor taps only	50	58	-0,80
	- indoor taps only	2	–	–
	- both in and outdoor taps	32	32	0
	- Total	84	90	-0,89
Refrigerator	- working	40	46	-0,61
	- not working	2	–	–
Radio	- working	74	70	0,45
Gramophone/Tape Deck	- working	32	34	-0,22
	- not working	–	2	–
Television Set	- working	36	58	-2,20[*]
Motor Car	- working	22	24	-0,23
	- not working	4	6	–
Bicycle	- working	2	4	–
Burglar Proofing		88	78	1,33[v]
Extra Rooms built onto house		10	6	0,73
Other Structure on Property		28	12	2,00[*]
Cleanliness (especially kitchen):				
	- unclean	14	8	0,96
	- neither clean nor unclean	34	28	0,65
	- clean	52	64	-1,22[v]
Children in household owning shoes		82	100	-3,14[**]
Washing/Cleaning material expenses		90	88	–
Cold-drink expenses		48	54	-0,60
Alcohol Expenses		20	24	-0,48
Cigarette Expenses		18	20	-0,25
Money sent to others		6	14	-1,33[v]
Medical Expenses		10	32	-2,70[**]
Mothers on Medical Aid		2	16	-2,45[*]
Case/Control Child on Medical Aid		2	10	–

N = 100 Households (50 Cases and 50 Controls); N > 100 people

[**] $p < 0,01$

[*] $p < 0,05$

[v] approaching significance

[1] It is inappropriate to calculate z scores on highly skewed distibutions, with a sample size of only 50 subjects in each group.

Most items in Table 3 showed similarities between the two groups. However, greater impoverishment in the Case group was indicated:

Cases had significantly more other structures (i.e. tin shacks and prefabricated units). As Soweto plots are of a standard size, this finding supports the figures on over-crowding presented under household structure (section 5.1). There was a leaning towards significance in terms of more Cases having electricity and burglar proofing - this may be explained by the priority given in the electrification of Soweto, to poorer and high crime areas[1]. Finally, significantly fewer Cases had medical expenses. This does not necessarilly imply that Cases were healthier, but may suggest that they could not afford to pay for medical treatment.

By contrast, significantly more Controls had television sets, children in the household who possessed shoes, and mothers who were on medical aid schemes. There was also a leaning towards significance with regard to the cleanliness of Control households, and Controls who had fences.

5.1.2 Family Type

Case children appeared more likely to come from a family with a broken structure, i.e. neither nuclear nor extended in composition, as indicated by the following features:

Significantly fewer Case mothers (28%, $p < 0,05$) lived in the same households as Case fathers. Significantly fewer Case children (16%, $p < 0,05$) were fathered by the current household head. Significantly more Case households (38%, $p < 0,05$) had resident children who did not have the same father as the Case child. Living in the households with Cases were significantly more other non-nuclear family members such as aunts, cousins, and people with unknown relationships to the child (a mean of 4,7 others, SD 3,7; $z = 1,89$; $p < 0,05$).

The family type of Case children seemed to be a formation combining fragments of the nuclear and extended families, together with other people who had unknown (if any)

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1 E. Shuenyane, 1984, personal communication.

relationship to the Case children. This concept will be explored in the discussion of the findings (see chapter 6).

The family type of Control children appeared to be somewhat nuclear in structure, as indicated by the following features:

Significantly more Control mothers (48%, $p < 0,05$) lived in the same households as Control fathers. Significantly more Control children (32%, $p < 0,05$) were fathered by the current household head. Significantly fewer Control households (18%, $p < 0,05$) had resident children who did not have the same father as the Control child. Living in the households with Controls were significantly fewer other non-nuclear family members (A mean of 3,3 others, SD 3,5; $z = 1,89$; $p < 0,05$).

Just over a third of the mothers in both Case and Control groups (34 - 36%) had never lived with the child's father. A very small percentage of mothers in the two groups (0 - 4%) were living with a male partner other than the child's father. More than half of the mothers in each group were, or had been married. Marriage Types are given in table 4 below:

Table 4. Marriage Types

TYPE OF MARRIAGE	Case %	Control %
Church or Religious Institution	24	21
Civil Rights or Magistrate's Office	33	53
Traditional or Customary	43	26

Case N = 42, Control N = 38 (Married Mothers)

The findings concerning marriage were not significant and while they demonstrated similarities between the two groups, they did not alter the above differentiation with regard to Case/Control Family Types.

The position in the family of both the Case and the Control child (regardless of family type) was the same in terms of sex and age. These variables were closely matched in the selec-

tion of subjects (see section 4.2, Subjects). There was also no significant difference between the two groups in the analysis of the child's birth order, as illustrated in table 5.

Table 5. Birth Order

BIRTH ORDER	CASE %	CONTROL %
First Born	28	26
Second Born	34	38
Third Born	14	20
Fourth to Ninth Born	24	16

N = 100 Children (50 Cases and 50 Controls).

5.1.3 Household History

The aspects of the household history that were examined were: length of residence and mobility; use of alcohol; and the presence of seriously ill people in the household.

In terms of length of residence and mobility, 84% of the Case group (compared with 66% of the Control group, $p < 0,05$) had lived in their present house for three years or more. Only 2% of Cases (as opposed to 26% of Controls, $p < 0,05$) had lived in their present house for less than one year. The balance of the Case (14%) and Control (8%) groups had lived in their present house for a period of longer than one year but less than three years.

Cases remained in their current accommodation for longer than Controls, but this is not necessarily indicative of greater household stability: Cases' accommodation was often unsatisfactory, but it appears that they lacked the resources to move (see figures on overcrowding, section 5.1). Of those Cases who had moved within the three years prior to the interview, 36% did so through individual choice or ambition, and 46% through circumstances such as financial and housing problems, forced removals and relationship difficulties.

In contrast to the Case group, significantly more Controls who moved within the previous three years, did so motivated by individual choice or ambition (74%, $p < 0,05$) and sig-

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nificantly fewer Controls moved for circumstantial reasons such as housing problems, forced removals, etc. (24%, $p < 0,05$).

Notwithstanding the moves which occurred, 88% of Case and 86% of Control mothers reported that the same adults had been living in the household consistently for the past three years.

With regard to the official (government) urban status of mothers, most, (74% in each group) had permission to be in the urban area of Soweto. This indicates that these mothers were not recent urban migrants. Of the 26% in the Case group who did not have permission, 14% ($p < 0,05$) said that they were eligible for, and awaiting the issuing of, section 10 Residency Permits - unlike all 26% of Control mothers who reported that they were not eligible for permission.

It is possible that some of the Case mothers felt threatened about revealing their illegal residency. They may therefore have protected themselves by claiming to be in the process of obtaining permission and thereby implying that their presence in Soweto was 'semi-legal'. There did however seem to have been a high level of trust and honesty in the interviews, and the mothers' responses may in fact have reflected their true situation. If this was so, then there were significantly more Cases (14%) than Controls (0%) who did not have, but were eligible for permission ($p < 0,05$).

As perceived by the mothers, there were no significant differences between Case and Control households with regard to drinking and drug problems of household members (excluding the mother)[1]. The figures are given in table 6 overleaf:

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1 Data relating to the mothers' drinking habits has been presented separately in section 5.3.8

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Table 6. Substance Abuse (by at least one Household Member) Per Household

SUBSTANCE ABUSE PER HOUSEHOLD*	CASE %	CONTROL %
Alcohol	34	32
Drugs	6	4
No Substances Abused	60	64

*as perceived by mothers, but excluding them.
N = 100 Households (50 Cases and 50 Controls); N > 100 people.

The findings in table 6 do not correlate with the alcohol expenditure in table 3. This may be explained by the practice of home brewing.

The presence of a household member (besides the child) who was seriously ill was evident in 14% of Case and 8% of Control households. According to the mothers, there were no households in either group who had more than one person who was seriously ill.

In conclusion, an association between the child's nutritional status and household factors has been indicated by the significant differences between the Case and Control groups with regard to household structure, household inventory, family type and household history.

5.2 Child Care Practices

The majority of mothers in the sample (86% of Cases and 84% of Controls) saw the child daily, while 8% of Cases and 12% of Controls saw the child 2 - 5 times per week and 6% of Cases and 4% of Controls saw the child only once a week for 4 hours or less. All mothers in the sample saw the child at least weekly.

The frequency of the mother's contact with the child was not significantly different between the two groups, although there was a leaning towards significance where more Case mothers than Control mothers spent 5 hours or longer with the child per day:

Table 7. Time Mother Spent with Child per Day

TIME MOTHER SPENT WITH CHILD PER DAY	Case #	Control #	z Score
1 - 2 hours	8	6	0,58
3 - 4 hours	5	11	-1,64[v]
5 hours or more (up to continual, i.e. 18 -24 hours)	30	25	1,01[v]

[v]approaching significance

Case N = 43, Control N = 42 (Mothers who saw their child daily).

As indicated above, Case mothers tended to spend more time (5 hours or more) with the child per day.

There was however, a leaning towards significance where Cases spent fewer hours with the child over the weekend than did Controls viz. 24% of Cases and 36% of Controls spent 12 to 24 hours with the child over the weekend (not shown in tabular form).

The same percentage of Case and Control mothers (96%) slept in the same house as the child every night. This figure includes those mothers who were unable to spend any time with the child because the child was asleep when they returned home.

The remaining mothers in each group (4%) slept in the same house as the child one to three times a week.

A similar percentage of Case (44%) and Control (52%) mothers went back to work or school after the birth of the child. However, of the mothers who did go back to work or school, there was a leaning towards significance where Case mothers appeared to go back sooner than did Control mothers: 45% of Cases and 27% of Controls went back to work or school before the child was 4 months old, while 55% of Cases and 73% of Controls went back when the child was more than 4 months old.

5.2.1Types of Child Care Arrangements

5.2.1.1 When Mother Cares for Child Herself

Approximately half of the sample (56% of Case mothers and 48% of Control mothers) cared for the child themselves and had done so since the child was born. A similar percentage of mothers (18% of Cases and 20% of Controls) did not care for any other children besides the child.

There were leaning towards significantly more Case (38%) than Control (28%) mothers who cared for between 3 and 6 other children. Some mothers (16% of Cases and 10% of Controls) were not the child's sole care giver. These mothers had someone else who cared for the child in addition to themselves. As these children were subject to the practices of a person other than the mother, these Cases and Controls have been included in the section that follows.

5.2.1.2 When Mother is at Work or School

Approximately half of the sample (44% of Case mothers and 52% of Control mothers) did not care for the child themselves. However, including the 16% of Cases and the 10% of Controls mentioned above, 60% of Case children and 62% of Control children were cared for by someone other than the child's mother. No child in either group was left alone to care for itself.

There was an approaching significant difference where more Case children (82%) than Control children (63%) were cared for by a female relative. Also, fewer Cases (18%) than Controls (37%) were cared for by a female non-relative. [1]

Only one care giver, who was a creche worker in the Control group, was professionally trained in child care. All the mothers in both groups reported that the same person cared for the child every day. The age range of the care givers varied as shown in table 8.

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1 N = 30 Cases and 31 Controls, i.e. all those children who were not cared for by their own mothers.

Table 8. Age of Care-Givers

AGE OF CHILD CARE-GIVER	Case %	Control %
Under 20 years old	0	0
Between 20 and 49 years old	27	34
50 years old or more	73	66

Case N = 30, Control N = 31 (those children who were not cared for by their own mothers)

None of the care givers were under 20 years old and most, in both groups, were 50 years old or more.

Exactly 57% of care givers in each group were paid to care for the child. The mothers provided 63% of Case care givers and 67% of Control care givers with food for the child. The mothers, however, had no way of ensuring that the child received this food.

There is a significant difference between the amount of time that the Case and Control child spent with the care giver per day: Cases spent significantly fewer hours with the care giver than did Controls as illustrated in table 9 overleaf.

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Table 9. Time Child Spent with Care-Giver per Day

TIME CHILD SPENT WITH CARE-GIVER PER DAY	Case %	Control %	z Score
Less than 5 hours	0	0	0
5 - 12 hours	63	29	3,41**
Continual, i.e. 18 - 24 hours	17	57	-3,11**
Don't know, it varies	20	14	0,80

**$p < 0,01$
Case N = 30, Control N = 31 (Children not cared for by their own mothers)

The Case child spent less time with the care giver per day, but significantly more Cases had been cared for by a care giver from a younger age than Controls: 67% of Cases (compared with 35% of Controls, $p < 0,05$), had been cared for by a care giver from under the age of 2 months, whereas 33% of Cases (as opposed to 65% of Controls, $p < 0,05$) had been cared for by a care giver from 3 months of age or more. The care givers who did not care for any other children besides the child constituted 37% of the Case group and 42% of the Control group. More than half (63%) of Case care givers and 58% of Control care givers, took care of between 1 and 7 other children. The 58% includes one Control child who was at a creche where a single creche worker was in charge of 122 other children besides the child.

The overall child care practices in both the Case and the Control groups were similar: There was no significant difference between the two groups regarding the numbers of children who were cared for by the mother, and the number of children who were cared for by someone other than the mother. The data indicated that the extended family (in particular older female adult relatives) provided the predominant form of child care among the sample of working or school-going mothers. However, to an extent approaching significance, fewer Cases than Controls used extra-familial care such as childminders, neighbours, servants or a creche. Nearly all the child care arrangements were provided by the Soweto working class community, none were provided by the State, and only one (i.e. the creche) was provided by a private welfare initiative.

The significant difference between the child care practices in the Case and Control groups, was that Case children spent significantly fewer hours with the care giver per day, than did Control children. However, significantly more Case children had been cared for from a younger age than Control children.

5.2.2 Mother's Attitude towards the Child Care Arrangements

Nearly all the mothers (90% of Cases and 96% of Controls), thought that the child was being well cared for. Yet, when asked: "If circumstances allowed, how would you like to change the way the child is being cared for ?", 30% of Cases and significantly fewer Controls (2%, $p < 0,05$) answered that they would have liked to have cared for the child themselves, or to have had a good child-minder or creche.

It is interesting to note that 30% of Case mothers identified the child care arrangements, rather than the child's nutritional practices, as inadequate (see section 5.4.3). Further, significantly fewer Cases (10% compared with 26% of Controls, $p < 0,05$), claimed that the way they reared the child was taught or influenced predominantly by clinic or hospital workers, rather than by female relatives, friends, acquaintances, mass media or employers.

5.3 Maternal Characteristics

A wide range of maternal characteristics have been examined for associations with the child's nutritional status. These include the mother's age, language, education, employment status, nutritional status, reproductive history, attitude towards the child, drinking habits and social support.

5.3.1 Age

The mean age of the mothers was not significantly different, both at the time of the birth of their first child (Case mothers 19,5 years, SD 3,7; Control mothers 19,7 SD 3,5), and at the time of the present study (Case mothers 25,9 years, SD 6,6; Control mothers 26,7 years, SD 5,8).

The significant difference between the child care practices in the Case and Control groups, was that Case children spent significantly fewer hours with the care giver per day, than did Control children. However, significantly more Case children had been cared for from a younger age than Control children.

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5.3.2 Language

The languages spoken by the mothers in the two groups is detailed in table 10.

Table 10. Language Group of Mothers

LANGUAGE GROUP	FIRST LANGUAGE			LANGUAGE MOST OFTEN SPOKEN		
	Case %	Control %	z Score	Case %	Control %	z Score
Sotho (Northern and Southern)	34	16	2,08*	30	20	1,15v
Zulu	16	32	-1,87*	28	32	-0,44
Other[1]	50	52	-0,20	42	48	-0,60

[1]Xhosa, Venda, Tswana, Shangaan, Ndebele, English, Afrikaans.
*$p < 0,05$
vapproaching significance

N = 100 (50 Cases and 50 Controls)

In terms of the mothers' true home tongue or first language, significantly more Cases than Controls spoke Sotho and significantly fewer Cases than Controls spoke Zulu. However, the languages most often spoken by the mothers in the Case and Control groups were more comparably distributed: as indicated by table 10, a leaning towards significantly more Cases adopted the Zulu language, while there was no significant change in the Control group between the mothers' first language and the language most often spoken.

5.3.3 Education

Most mothers (94% of Cases and 98% of Controls) had received some schooling. The level of education of Case and Control mothers was not significantly different. Standard Six was the median education level in both groups. The frequency distribution of the highest standard of schooling achieved by mothers is given in table 11.

Table 11. Highest Standard of Schooling achieved by Mothers

HIGHEST STANDARD PASSED	CASE %	CONTROL %
No Schooling at all	6	2
Std 1 - 4	16	14
Std 5 - 7	48	52
Std 8 - 10	30	32

N = 100 (50 Cases and 50 Controls)

No mother who went to school achieved lower than a standard one pass.

Formal training or education other than schooling was undertaken by 16% of Cases and 24% of Controls. The type of training or education is specified in table 12.

Table 12. Extra-school Training and Education of Mothers

TYPE OF TRAINING OR EDUCATION	CASE %	CONTROL%
Dressmaker, sewing machinist, leather bag maker, knitter, domestic science course	10	6
Nurse Aide/ Ward Assistant	2	2
Secretarial work, computer work (incuding operating and programming)	4	10
Tertiary education - Bachelor of Arts in teaching or nursing (completed, or in the process of completing)	0	6
No extra training or education	84	76

N = 100 (50 Cases and 50 Controls)

5.3.4 Employment Status and Work History

The identical percentage (46%) of Case and Control mothers were earning money. Yet, of the 54% of mothers in each group who were not earning, there was a leaning towards significance where fewer Cases than Controls perceived themselves as full-time housewives and a leaning towards significance where more Cases than Controls perceived themselves as 'unemployed'. The mothers' occupations are given in table 13.

Table 13. Occupation of Mothers

OCCUPATION	CASE %	CONTROL %	z SCORE
EARNING:			
Manual Labour e.g. domestic worker, car washer, road constructer, ward assistant, machine operator, hawking and shebeening.	44	36	0,82
Non-manual labour e.g. secretarial and computer work (incl. operating and programming),dressmaking, hairdressing, and a traditional doctor[1]	2	10	–[2]
NON-EARNING:			
Full time housewife	6	16	-1,60[v]
Student	4	8	–
'Unemployed'	44	30	1,45[v]

N = 100 (50 Cases and 50 Controls)
[v]approaching significance
[1]The traditional doctor was a mother in the Control group
[2]It is inappropriate to calculate z scores on highly skewed distributions, with a sample size of only 50 subjects in each group.

Exactly 6% of mothers in each group claimed to be self-employed, i.e. some of the mothers were involved in hawking, shebeening, dressmaking and the traditional doctor. Of those mothers who were earning, 35% of Cases and 30% of Controls had been working at their present occupation for less than one year, while 65% of Cases and 70% of Controls had been working at their present occupation for longer than one year.

Within the five year period prior to the interview, 70% of Case and 66% of Control mothers had worked. The number of jobs that mothers had worked at during this time, including their present occupations, are shown in table 14.

Table 14. Number of Jobs that Mothers had During the Past Five Years

NUMBER OF JOBS IN THE PAST FIVE YEARS	CASE %	CONTROL %
None	30	34
One	40	40
Two	18	18
Three and More	12	8

Case N = 35, Control N = 33 (Mothers who had worked in the five year period prior to the interview)

Of those mothers who were earning, there was a leaning towards significance where fewer Cases (52%) than Controls (62%) were given presents (e.g. food, clothes) or extra money by their employers. Further, a leaning towards significantly more Cases (52%) than Controls (26%) had payment deducted from their salary when they were unable to work due to sickness, advanced pregnancy or nursing a new baby.[1]

5.3.5 Nutritional Status

It was beyond the scope of the present study to ascertain the mothers' nutritional status by means of medical examinations. However, an indication of the mothers' nutritional status was obtained by the interviewer's observations of the mothers' weights and the mothers' self-reports concerning the adequacy of their diets.

According to the interviewer's perception, there was a leaning towards significance where more Case than Control mothers appeared to have been underweight. A similar percentage of Case and Control mothers appeared to have been average in weight, and significantly fewer Case than Control mothers appeared to have been overweight. These findings are illustrated in table 15.

1 N = 46 mothers who were earning money.

Table 1: Weights of Mothers as Perceived by the Interviewer

WEIGHT	Case %	Control %	z Score
Underweight	27	14	1,61[v]
Average Weight	50	46	0,40
Overweight	23	40	-1,83*

N = 100 (50 Cases and 50 Controls).
*p < 0,05
[v] leaning towards significance

Significantly more Case (20%) than Control (6% p < 0,05) mothers felt that they did not eat enough food, i.e. implying that their kilojule consumption was inadequate. Thus, the mothers' weights, their feelings of insufficient food intake and the household food practices in section 5.4, suggests that more Case mothers were undernourished compared with Control mothers.

5.3.6 Reproductive History

The overall reproductive histories of Case and Control mothers showed similarities rather than differences between the two groups:

The mean number of pregnancies per mother was 2,49 (SD 1,75) in the Case group and 2,52 (SD 1,96) in the Control group. The mean number of children who were born and still alive at the time of the interview was 2,38 (SD 1,79) in the Case group and 2,42 (SD 1,55) in the Control group. Sixteen percent of Case mothers' foeti and children, and 12% of Control mothers' foeti and children, did not survive (due to abortions, miscarriages, still births and deaths within the first five years of life). Single births (1 child only) were apparent in 30% of Cases and 28% of Controls.

Applying the Kolmogorov-Smirnov two-sample test to the cumulutive distributions of the birth intervals (the times between each birth), there was no significant difference between Cases and Controls.

Author Bloom Deborah Yael
Name of thesis Social And Dietary Practices Of Soweto Families Who Protect Against Overt Malnutrition In Their Children. 1988

PUBLISHER:
University of the Witwatersrand, Johannesburg
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