CHANGING CHILD-REARING PRACTICES IN SUDAN: AN EARLY STIMULATION EXPERIENCE

by

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Summary

The research reported here includes: (1) a demographic description of 242 urban Sudanese families from high and low income families with children five and a half years old or younger; (2) a description of child-rearing practices of high and low income families; and (3) an experiment in early stimulation activities by mothers to change child-rearing practices and to enhance the developmental status of young children.

(1) Demographic data, obtained by a field-tested questionnaire, indicated these differences and similarities between high and low income families: Marriage in low income families is more frequently within the family, but for both income levels, when marriage is within the family it is with a close relative. For both income levels, the average age of the mothers was 27 and of the fathers 37. High income mothers and fathers had more education than low income parents, but the fathers were always more educated than the mothers within each level. All families have high education and job expectations for all their children. Low income homes are more crowded and smaller and the sexes and children eat separately more than high income families. The health of mothers, fathers and children is poorer for low income families.

(2) Child-rearing practices data, also obtained from the questionnaire, showed authoritarian practices occurring in both income groups, but with high income parents praising their children more, using less physical means of punishment, answering more of their questions, letting them make some independent decisions, and taking them more places.

(3) The experiment involved 125 experimental and 117 control families, with 61 high income and 64 low income families in the experimental group. All children were tested for developmental status by 36 Ahfad University senior students who had also conducted the interviews. Based on the developmental status
data, lesson plans for each child were designed to enhance the developmental status of the child and to increase the interaction, responsiveness and stimulation of young children by their mothers. The 36 students demonstrated to the mothers how to carry out the lesson plans, and also provided available and locally made materials for the activities, frequently using items in the home. Two visits of from 1 to 2 hours each visit, each week, over a nine week period, constituted the experiment.

The results were both observed and measured. The observed results indicated greater interaction, responsiveness, and stimulation of young children by their mothers and more interest, curiosity and task-oriented activity by the children. These changes were not observed in the control families. The measured results showed a significant gain from failed items in the developmental test (Denver Prescreening Developmental Questionnaire) to all passed items in the post-test, and from many errors to fewer errors (p.<.005). The measured changes for the maturity test (Goodenough Draw-a-Man Test) showed significant changes from immature to mature performance (p.<.01).

From these data it is concluded that Sudanese mothers can change their child-rearing practices and young children can improve in their developmental status as a result of early stimulation by their mothers.

**Introduction**

The major reason for conducting the research presented here was to find ways to promote the development of young children that did not require large expenditures for buildings and teachers and that drew on the family, materials around the house or locally made, for early stimulation activities.

There is general agreement among experts around the world from developing as well as developed nations that early childhood care and education programmes are not only desirable but essential for many children. Some nations are using a community based approach to setting up such programmes, while in other countries it is the government that assumes responsibility for these programmes. Poor nations, such as Sudan, have some private and some public programmes for young children, but these are limited and attended largely by middle-class children. Programmes that exist in a few villages are understaffed, lacking in the most basic of materials, and teachers have little training or supervision.

There is also general agreement among nations that the family is an important part of early childhood care and education and, indeed, is probably the most important part. The idea of drawing on the family
and its resources, while adding new concepts and practices, is an attractive idea and one that is being examined in many countries. Parent education already has a tradition and a literature, and many important concepts and skills for child development are provided. But using the home as the setting for parent education and demonstrating to mothers how to stimulate the development of their young children through activities and interactions with their children, may be a particularly effective way that maximizes benefits and minimizes costs.

Thus, the research project described here was guided by four objectives:

First, to determine the developmental status of Sudanese children using two selected test instruments;

Second, to determine child-rearing practices in the Sudan;

Third, to introduce an experimental intervention of early stimulation activities by mothers; and

Fourth, to determine the effectiveness of this intervention by comparing pre- and post-intervention data from the two selected child development tests.

The families participating in the research were selected on the basis of: (a) at least five years of residence in Omdurman, the site of the study; (b) the presence of a mother with a child five and a half years or younger; and (c) the husband being Sudanese. The families were further selected to reflect high and low income levels. All families resided in the city of Omdurman; thus, the families were urban.

Demographic data were gathered on 242 families, 123 from low income families and 119 from high income families. The data were gathered by 36 Ahfad University senior women from the School of Psychology, Early Childhood Care and Education. The interview schedule used for gathering the data was developed and field tested in Sudan.

Description of Selected Sudanese Urban Families

The families are described on a number of variables and comparisons are made between high and low income families as appropriate.

Marital status: Regardless of income level, the families were intact, with the husband in Sudan and not working in another country.

Marriage in or out of the family: Low income families marry within the family significantly more than high income families (p.<.05). However, when marriage takes place within the family for either income group, it is with a close cousin.

Age of parents: The average age of the mothers participating in this study was 27 years for both income levels, with a range from 15 to 47 years for the low income mothers and 17 to 42 for the high income
mothers. The average age of the fathers was 37 for both income groups, with a range from 21 to 56 for low income fathers and 24 to 65 for high income fathers. The mode is for the wife to be about 10 years younger than her husband, regardless of income level.

Age of children: The children in the study had to be five and a half years of age or younger. The ages, however, clustered around 3 and 4, with more low income families represented at 5 years old than high income families, an assumed chance factor.

Mothers' education: Half of the mothers from low income families had no education, with the remainder having little more than elementary education. Most of the mothers from high income families had intermediate, secondary or university education, with half of these completing intermediate. The differences between the income levels were highly significant (p.<.001).

Mothers' work status: Too few mothers worked to describe their work status.

Fathers' education: The majority of low income fathers had elementary education or below, while the majority of high income fathers had intermediate education or above, with more than one-third having a university education. These differences between the income levels were highly significant (p.<.001).

Fathers' work status: More than 60% of low income fathers had low status work while more than 60% of high income fathers had high status work. The differences were highly significant (p.<.001).

Family income: Two-thirds of low income families had a monthly income below 300 Sudanese pounds while two-thirds of high income families had a monthly income of more than 500 Sudanese pounds.

Family styles: Low income families averaged about 8 people in the home while high income families averaged about 7 people; low income families had fewer grandparents in the home than high income families; low income families had an average of 3 rooms per house while high income families had an average of 4 rooms per house; fewer low income homes had electricity than high income families, but both had running water; no member of the extended family makes major decisions for more than 60% of both low and high income families; however, low income parents tend to make fewer decisions for their own family than do high income families, even when extended family members are not in the same house. And in low income families, children have significantly less opportunity to make some of their own decisions than do high income children (p.<.05). Fewer low income family members eat together than high income family members (p.<.05) and the men, women, and children eat alone more frequently in low income families than in high income families (p.<.01); mothers from low income families are in poorer health than mothers from high income families. The same is true for the fathers and for the children. All the differences are highly significant (p.<.001).
Discussion

The families in this study were basically intact, having the husband with the family rather than working abroad alone, as is common with some Sudanese families. In low income families, marriages were more frequently within the family, but when that occurred in either income group, the marriage was most often with a close (first) cousin.

The average age of all the women in the study was 27 and the average age of all the men 37. This age differential is usual in Sudan and raises some thoughts about the status of younger women in relationship to older men. The children in the study clustered around 3 and 4 years of age, although the spread was from a few months to five and a half years. Only one child in each family was a target child for the study.

The difference in level of education of mothers from low and high income families was great, and so was the difference between fathers. Fathers in both income groups had more education than mothers, with high income fathers having the most and low income mothers having the least. Again thoughts are generated about the status of women in relationship to men, particularly when education is recognized as a critical factor in achievement, greater freedom and opportunity.

Public educational opportunities are still limited for Sudanese and many high income families send their children to private schools. As will be seen below, almost all mothers have high expectation for university level education for all their children, but the chances of that for low income families and girls are minimal.

High income fathers have high status positions and low income fathers have low status positions. This is further reflected in the income data used. However, mothers who provided the income data frequently stated that they did not know the family income and so the information was not used for analysis.

When examining family styles, further differences are noted between low and high income families. Low income families have more people in fewer rooms and apparently have more children than high income families. The actual number of children was asked for in the interview schedule, but for some technical reason, the data were not tabulated. The assumption of more children was based on the fact that high income families had more grandparents in the home; yet these families had fewer people. The difference with the higher number of people in low income homes and fewer grandparents residing there suggests more children. The interviewers also noted a higher frequency of children in low income families. The presence of grandparents in high income families frequently represented a help with younger family members, both emotionally and financially.

High income parents make more of their family decisions and allow their children to make some of their own decisions more frequently than in low income families. The greater freedom and independence of members of high income families is consistent with more respect for independent functioning of young families or of young children; however, it is
a departure from tradition where deference was consistently made to an elder male of the extended family.

A further break with tradition is in the eating habits of the family. Traditionally, the sexes ate separately and also the children. Low income families maintain that tradition more than high income families, where the family eating together is more common. As we look at child-rearing practices below, we will see the more traditional practices of low income families and the more modern practices of high income families.

The relatively poorer health of low income fathers, mothers, and children, while consistent with findings around the world, indicates that health problems continue in spite of the services provided by many international and national organizations. Knowing the importance of good health throughout one's life, it is distressful to see low income children already having health problems. Again, thoughts surface about the status of low income families in relationship to high income families.

**Child-rearing Practices of Selected Sudanese Families**

The families in the study were all urban and had lived in the same urban area for at least five years - Omdurman, a city across the Nile from Khartoum. Lack of petrol and vehicles made it impossible to conduct the study in rural areas as well. Therefore, the child-rearing practices described are of urban families, and differences are noted primarily between low and high income families.

**Discipline of children:** Both low and high income parents want children to obey immediately to a command, while high income parents praise their children who do a task immediately more frequently than low income parents (p.<.05). Both high and low income parents insist that children do what is requested, but many in both income groups forget to carry out the request. Low income fathers punish their children more frequently than high income fathers and use physical punishment - hitting, slapping - more than non-physical punishment - talking, withholding (p.<.05). High income fathers punish less and use non-physical punishment more. High income mothers punish more by hitting with their hand while low income mothers punish more with an instrument, like a stick. Both high and low income mothers occasionally discuss with the child what he/she did wrong, but physical punishment is more frequent. However, both high and low income parents have a special reward for a child when he/she behaves well.

**Acceptance of child:** Both low and high income parents provide the attention children desire, but low income parents accept a child following them around more than high income parents. This is particularly true for girls in low income families. On the other hand, high income parents answer the many questions of their children more than low income parents (p.<.05). Parents of neither income level were willing to ignore a child's anger outburst against adults.

**Interaction with child:** Mothers and fathers of both income groups interact with their children through play and doing some activities together, but high income families take their children to the library
or a museum or a trip more frequently than low income families. The differences are highly significant (p.<.005). Further, high income parents answer questions children ask more frequently than do low income parent, as was stated above.

**Expectations for child:** Both high and low income parents want university education for their boys and girls and want high status positions for them in the future. However, more high income parents are providing a preschool education programme for their children. The differences are highly significant (p.<.005).

**Discussion**

Low income families discipline their young children more strictly than high income families and reflect a more traditional pattern of discipline. However, their feelings about a child's misbehaviour are quite similar and they both insist upon obedience. High income parents praise their children more than low income parents, which is a more modern practice, but both high and low income parents reward their children for good behaviour. The reward is a special treat rather than verbal praise.

Parents of both income groups give attention to a child who seeks it, but high income parents answer more questions from their children than do low income parents. Neither income group accepts anger outbursts from a child against an adult.

There is interaction between parents and children from both income groups, but high income parents take their children to more places than low income parents. Going on a trip or even going to a library or museum costs some money and the high income families have more to cover such costs.

All families want university education for their children and high status positions for both their boys and girls, but only the high income families provide preschool education experiences for their children. Again, money is involved.

There is an interesting conflict between what parents want for their children and the traditional patterns of child-rearing. Women, for the most part, do not work outside the home and receive less education than men, yet parents - particularly mothers - want high status positions and university education for both their boys and girls. They tend to use the same child-rearing practices with boys and girls and yet sex differences appear pervasively in the society, to the clear advantage of men. These differences do not seem to occur in the early years of childhood. The only evidence was low income mothers accepting that their girls follow them around. This may be in preparation for the female role in the home as a helper.

If western concepts are used to describe the differences in low and high income families and their child-rearing practices, the following would be stated. Sudanese families continue with many authoritarian patterns of male dominance and low income families persist with these more than high income families.
Child-rearing practices continue with authoritarian patterns of punishment and control of children, with low income families persisting in these patterns more than high income families. High income families are adopting more democratic child-rearing practices.

Family styles continue to be more authoritarian for low income families than for high income families, the latter adopting more democratic styles.

Family differences in father's work status and in the education of both fathers and mothers are associated with more interaction with children, more praise, and more experiences beyond the home. Again, high income families are functioning in a more democratic way with their children.

The dramatic finding was that, in spite of the differences between low and high income families, it was most important for all that their children have university education and high status positions. It suggested the families, particularly the mothers, would accept the demonstration of early stimulation activities to help them promote the development of their young children. The mothers would see the relationship between early stimulation and later achievement for their children and would change their behaviour to enhance their children's development. This perception was borne out during the experimental phase of the study.

The experiment

The low and high income families were divided into experimental and control groups, with 125 in the experimental and 117 in the control group. For high income families 61 were in the experimental group and 54 in the control group. For low income families 64 were in the experimental group and 63 in the control group. All the children were administered the Denver Prescreening Developmental Questionnaire which assesses developmental status in language, gross motor, fine motor-adaptive, and personal-social areas; and the Goodenough Draw-a-Man Test which assesses the level of maturity of a child, as measures of the dependent variable; i.e., level of child development. The tests are respectively referred to as the DPDQ and the DAM. These tests were administered by the 36 university senior women who conducted the interviews. There were no significant differences between the experimental and control groups by socio-economic level in the initial or pre-test results.

Knowing the level of development of each child provided the basis for determining what early stimulation activities were appropriate to enhance the development of young children. The results of the pre-tests indicated that the income level of the family is more important to boys than to girls in terms of level of development, with low income boys being most adversely affected in their development. Girls are more mature than boys as groups and the girls out-perform the boys within each income group.
The experimental portion of the research was to: (1) change child-rearing practices of mothers; and (2) enhance the developmental status of children as a result of early stimulation activities with their mothers. The 36 university senior students provided the counselling and demonstrations to the mothers to achieve the goals of the experiment.

**Changing Child-rearing Practices**

To bring about changes in child-rearing practices, the senior students all used a common set of goals to be achieved. The achievement of increased interaction with children, increased responsiveness to children and increased stimulation of children were all deemed to be better child-rearing practices and to be more conducive to enhancing the developmental status of children.

The goals for the mothers were:

A. **Interactions**
   1. speaks gently to the child
   2. is interested in the child's behaviour
   3. enjoys playful interaction with the child
   4. often smiles at the child
   5. often shows affection to the child

B. **Responsiveness**
   1. quickly responds to the child's distress
   2. handles child gently and considerately
   3. notices the child's needs and experiences
   4. shows spontaneous warmth towards the child
   5. enjoys interaction with children

C. **Stimulation**
   1. admires the child's abilities to learn or do things
   2. plays games or engages in other activities with the child
   3. praises new and unusual responses
   4. stimulates the child by talking, reading, playing, handling
   5. reports how smart or how good the child is.

**Enhancing the Developmental Status of Children**

The senior university students had assessed each child's level of development from the DPDQ and from the DAM tests and designed lesson plans to demonstrate to each mother how to stimulate the development of their children through activities consistent with each child's measured level of development. The university students visited assigned homes twice a week from 1 to 2 hours each visit, over a nine week period. They usually went in teams of 2 and visited from 4 to 7 families twice each
week. They worked with the same families from which they had gathered interview data and data on the developmental status of the children. For each visit, the university students made a lesson plan for the child and for the mother. Each lesson plan for the child included: (1) an area of development; (2) objectives or goals; (3) activities to achieve the objective; (4) materials to conduct the activities; and (5) an evaluation of whether the child achieved the objective. For the mothers, the lesson plan included: (1) objective; (2) activities with child; (3) materials to use with child; and (4) an evaluation of whether the mother achieved the goal. The following is a sample of a lesson plan for a child and her mother. The child was 4 years and 10 months in age and a girl from a low income family. She passed all the items on the DPDQ, but had an immature score on the DAM test. The lesson plan was for the fourth week.

**Area of development: gross motor**

Objectives: to jump rope; to jump over low objects

Activities: we instructed the mother to show her child how to jump over a rope when it is on the ground without touching it; then how to jump when the rope is turned. The mother was encouraged to invite other children to participate; we instructed the mother to set up a small stool so the child could see it. Then we instructed the mother to have the child jump in place. Then have the child jump along the floor across the room. Finally, have the child jump over the stool. The mother was encouraged to demonstrate the activity for the child, and we demonstrated to the mother as necessary.

Materials: rope; small stool

Evaluation: the child jumped over the small stool and jumped the rope

New objective: to jump over a rope; then it is placed increasingly higher.

**Area of development: language**

Objective: to follow three sequential directions

Activities: we asked the mother to think of three sequential directions and gave her some examples, like: put these blocks in the box then go outside and bring a cup of water and then put the cup on the table.

Materials: blocks, cup, water, table

Evaluation: the child could follow the directions

New objective: increase the number of directions; play a game of travel where there is a list of things to take along and the child tries to remember the order

**Areas of fine motor-adaptive and personal social**

These areas were treated with the same lesson plan format.

Objectives for mother: to participate more with her child; to direct her child as she learned; and to praise her child as she succeeded. Also, to use the materials correctly.
Evaluation: the mother participated with her child as the child learned the activities and praised the child when she achieved the objective.

The objectives in the lesson plans were always related to development in a given area; the activities were always to achieve the objective; the materials were always simple, inexpensive and usually available or were donated. Some materials were made by the third and fourth year university students in the School of Psychology and Preschool Education. The materials included, in addition to things around the house: painted wooden blocks with numbers and letters; building blocks; stuffed dolls and animals; flying saucers; matching cards for colour and shape; maze puzzles; paints (powdered), brushes, newsprint, pencils; counters; beads for stringing; books; pictures; boxes, etc.

The results

The results included 111 experimental families and 101 control families. The other families were not available because of moving, a death in the family, a long vacation, etc. The results are of two kinds: (1) observed changes in the mothers and children of the experimental families; and (2) measured changes of the developmental level of children, comparing experimental with control families.

**Observed changes.** The observed changes in the mothers included: improved skills in stimulating children; gradually expanded ways to stimulate children; showed more tolerance and patience; shifted from punishment to verbal rewards; showed more interest in the children; increased parent-child interaction; had more knowledge about child development; learned how to use new materials; perceived work with child as serious; applied what was learned to other children in the family, encouraged the child more; learned to use materials in the house for stimulation; responded to curiosity of the child.

The observed changes in the children included: improved performance in all areas of development; increased interest in the work and activities; more skills in using objects and materials; more curiosity and questions; more independence and self-direction; happier; more pride in accomplishment; more task-oriented; more sociable; more self-aware; improved self-concept; contributed more imagery to play and stories; approached things more directly and with greater motivation.

**Measured changes.** The measured changes, using the DPDQ, show a significant gain from failed items on the pre-test to all passed items on the post-test, and from many errors to fewer errors (p.<.005). The numbers were too small to break down by income level or sex. Too many of the children had passed all the items on the pre-test. Table 1 presents the data.
Table 1 - Gains in DPDQ Scores, Experimental Versus Control

<table>
<thead>
<tr>
<th>Errors to no errors</th>
<th>E</th>
<th>%</th>
<th>C</th>
<th>%</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Errors to fewer</td>
<td>39</td>
<td>78</td>
<td>19</td>
<td>51</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>37</td>
<td>100</td>
<td>87</td>
</tr>
</tbody>
</table>

\[ x^2 = 12.176, \text{df} = 1, p < .005 \]

The measured changes using the DAM test show a significant change from immature to mature drawings; i.e., drawings appropriate for age. The significant gains (p < .01) were for the low and high income boys and for low income girls. High income girls had scored initially with more mature drawings and had little room for improvement. Table 2 presents the data.

Table 2 - Percentages for Mature Drawings on DAM Test for Experimental and Control Groups, Pre-test and Post-test, by Gender and Socio-economic Levels

<table>
<thead>
<tr>
<th>Socio-economic level</th>
<th>Experimental Boys</th>
<th>Control Boys</th>
<th>Experimental Girls</th>
<th>Control Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre- Post Diff.</td>
<td>Pre- Post- Diff.</td>
<td>Pre- Post- Diff.</td>
<td>Pre- Post- Diff.</td>
<td>Pre- Post- Diff.</td>
</tr>
<tr>
<td>Low</td>
<td>37 81 44**</td>
<td>43 35 -8</td>
<td>50 86 36**</td>
<td>50 41 -9</td>
</tr>
<tr>
<td>(27) (31)</td>
<td>(21) (20)</td>
<td>(26) (21)</td>
<td>(52) (22)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>28 74 46**</td>
<td>70 85 15</td>
<td>73 87 14</td>
<td>62 67 5</td>
</tr>
<tr>
<td>(21) (23)</td>
<td>(18) (20)</td>
<td>(15) (16)</td>
<td>(24) (18)</td>
<td></td>
</tr>
</tbody>
</table>

** \[ x^2 = p < .01 \]

Conclusion

Mothers of urban Sudanese families can change child-rearing practices. They can learn to interact with their children more, become more responsive, and provide more stimulation for the development of their young children. The children benefit from the changed behaviour of their mothers and from the specific goals, activities and materials their mothers learn to use with them.

As was stated earlier, Sudanese mothers, regardless of income level, have high expectations for university education and high status positions for all their children, regardless of sex. It was clear that these mothers saw a relationship between the early stimulation activities and their hopes for their children.