

Parental Behaviors and Academic Achievement

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Abstract

This study explores the perceived parental behaviors of parents of primary school children in Singapore, and their relationship to the academic achievement of their child. The results showed that there were differences in perceived parental behaviors between fathers and mothers. In general, mothers were perceived to be more nurturing than fathers, and more aware about their child's daily activities and their daily needs. They were also more communicative with their child compared with the fathers. Results further showed that fathers who have tertiary education tend to have more warmth toward their child, regardless of the child's gender. The results of the study provide useful insights into how school counselors can help underachievers in their academic performance. The findings are also useful for family counselors in their work with lower income families.

Keywords: Parental behavior; academic achievement; Singapore; nurturing; warmth

1. Introduction

This study investigates the perceived involvement of Singaporean parents in their children's schooling and how their self-reported parenting behaviors are related to their children's academic achievement. Pupils are formally streamed according to their learning ability at the end of Primary Four and then advanced to one of three streams, namely, EM1 (highest level), EM2 (level where the majority are posted), and EM3 (lowest level). At the end of Primary Six, all pupils sit for the Primary School Leaving Examination (PSLE) that assessed their abilities for placements in a secondary school course that suited their learning pace and aptitude (Foo and Kwok, 1999). This posed a great challenge for parents who want their children to excel and be placed in good secondary schools.

In response to this challenge, parents try their best to help their children excel academically. Hoover-Dempsey and Sandler (1997), in trying to understand parents' role in education, posit that parents who believed they should be involved and who have a sense of efficacy were likely to be involved in their children's education. Similarly, Brofenbrenner (1986) asserted that the family is the most important influence on the development of young children. Others support the need for successful inclusion and involvement of parents in a variety of roles and areas and recognize the many advantages of having parents as partners in the education of their children (Dwyer & Hecht, 1992; Herman & Yeh, 1983). Berger (1995) has shown that the interest and support of the parent is the primary factor for children's educational success or failure. According to him, parents' decision to be involved is based on the beliefs about their role in their children's education and these beliefs establish the basic range of activities that parents see as important and necessary for their own actions.

This study sheds light on the perceived role of parental behaviors and their children's academic achievement. Singaporean parents are particularly concerned about their child's education and try to help out as they become more and more aware of the impact they may have on their child's adjustment and academic achievements. It is not an easy task for a woman to cope with work and family, as bringing up children was traditionally the role of the mother. Young fathers today are beginning to play nurturing roles and try to spend more time with their children, but it is often difficult for them to do so as they are often the main breadwinners of the family. With today's parents being more educated, they expect more from their children in terms of academic achievement, and this adds on to the concern and anxiety that parents face balancing work and family life.

What perceived parental behaviors of the fathers and mothers are likely to contribute to the child's achievement in school? Do more educated parents and family income make a difference to the academic achievement of the child? This study examines these questions in the light of perceived parental behaviors and academic achievement of primary school pupils in Singapore. First, it examines parental warmth in terms of nurturance, expression of affect, and enjoyment of the child. Second, it looks at parental control of the child in terms of supervision (monitoring), openness to experiences, discipline, and rules.

Third, it examines parents' communication with their child, and lastly, it looks at parental involvement in terms of school-based involvement, home-based involvement, and home-school involvement. The conceptual model presented in Figure 1 illustrates the relationship between perceived parental behaviors and academic achievement.

2. Literature Review

2.1 Overview of Major Theories on Parental Behaviors

Parents play an important part in a child's education but they have different ideas about what parenting practices will promote their child's academic achievement. Psychoanalytic theory provided a major impetus for the study of parental attitudes as a key determinant of child personality. According to Rohner (1986), the major legacy of the psychoanalytic approach to parental attitudes has been in the study of parental acceptance and rejection. The basic premise is that the "normal attitude of the parent is one of affection. If the parent's emotional needs have not been met at some point, the parent will then carry these personality needs into his or her parenting behavior. These needs may then result in overprotecting or rejecting the child as theorized by Levy (1931, 1943) that prompted Rohner (1975, 1986) to develop the Parental Acceptance-Rejection Theory.

The second major influence was the advent of attitudes as a dominant concept and a quantifiable entity in social psychology in the 1930s by theorists like Likert (1932) and Allport (1935). Attitudes were thought of as filters that indirectly affected parental behaviors, thereby reflected in the child's environment and development. Pearson (1931) said that parental attitudes, construed as beliefs about how to rear children, were important because the young child is exposed to them continually. Along these lines, Wolfenstein (1953) described how advances in knowledge about child rearing contributed to changes in parents' attitudes. Studies by Stevenson and Baker (1987), Epstein (1983), Fehrmann, Keith, & Reimers (1987), & Reynolds (1989) have demonstrated the positive effects of parent involvement in children's schooling across a wide range of populations and ages. Factors that might be included under the general term parental involvement include parents' expectations of school performance, verbal encouragement or interactions regarding school work, direct reinforcement of improved academic performance, and general academic guidance and support. Even with the diversity of variables of parental involvement, research generally supports its effects on achievement especially at the elementary level (Fehrmann et al., 1987). Maccoby and Martin's (1983) review of the impact of parent behaviors on children concluded that self-esteem results from parent-child interactions characterized by parental expectations combined with parental warmth and responsiveness.

2.2 Dimensions of Parental Behaviors

Rohner & Rohner (1981) found that parental warmth and parental control are the two major dimensions of parenting in human societies. Maccoby and Martin (1983) in particular, have shown that children whose parents were more responsive, more co-operative with adults, more socially attentive, and have greater social competence (Baumrind, 1989). Parental warmth is defined as how responsive and accepting the parent is to the child (Linver & Silverberg, 1997). Patterson and Capaldi (1989) found that warmth might have special significance for children's developing school capabilities because it provides a foundation on which children develop positive views of themselves and their competence. Mize and Pettit (1997) found that warmth predicted better adjustment, especially in academic performance, for girls than for boys. Pettit, Bates, and Dodge (1997), in studying the role of supportive parenting in the socialization process, found that a warm and nurturing attitude in the child's activities predicted children's behavioral, social, and academic adjustment.

The literature on the nature and effects of parental control of children and adolescents is broad and complex. It contains many different conceptualizations of control, and findings are often inconsistent or equivocal. Rohner and Pettengill (1985) defined parental control as the extent to which parents place restrictions or limits on children's behavior, and the extent to which these restrictions are enforced. Similarly, Rothbaum and Weisz (1994) identified coercive control as involving attempts to influence the child by using force, physical manipulation, or harsh or repetitive commands. By contrast, non-coercive control involves fostering a sense of choice (e.g., presenting options to the child). As perceived parental control increases, children perceive greater parental hostility or rejection (Barber, 1996); authoritarian styles of parenting based on dominating control by parents are associated with poor social development and adjustment in children and adolescents (Baumrind, 1971).

Most educators recognize parental involvement in school activities and schoolwork as integral to successful academic achievement.

Parental involvement in children's education appeared to be associated with a range of positive outcomes, including fewer behavior problems, lower drop-out rates, and higher student achievement (Comer, 1984; Muller, 1993; Stevenson and Baker, 1987). Parental involvement incorporates a range of activities that include school-based, home-based, and home-school involvement. Fantuzzo, Tighe, & Childs (2000) defined school-based involvement as activities and behaviors that parents engage in at school with their children. A study by Zellman and Waterman (1998) confirmed that parent-school involvement in children's education is associated with positive educational outcomes. Stevenson and Baker (1987) found that parents with more education were more involved in the activities of school, such as attending parent teacher organization and parent-teacher conferences. They found that parents of younger children were more likely to be involved in school activities than were parents of older children and that girls have slightly more involved parents than boys.

Home-based involvement is described as the active promotion of a learning environment at home for children. It can take the form of providing a place in the home for learning materials, reviewing the child's work and monitoring the child's progress, providing enrichment activities pertinent to school success (Hoover-Dempsey & Sandler, 1997). According to Reynolds (1992), home involvement was more positively associated with achievement than school involvement. Fantuzzo, Davis, and Ginsburg (1995) find that a specific home-based, parent support, parent involvement intervention was linked to increases in students' self-ratings of scholastic competency and behavioral self-control.

2.3 Socio-Economic Factors Affecting Parental Behaviors and Academic Achievement

Kohn (1969) claimed that elements in a parent's social context will influence the goals and values they will have for their child, and these values will result in differences in parenting practices that will ultimately result in differences in academic achievement. SES continues to be a powerful predictor of academic success for American children as studies have shown that children from higher SES backgrounds score higher on standardized achievement tests, are more likely to finish high school, and are more likely to attend college and postgraduate education than their less advantaged peers (Edelman, 1987; Zill, Collins, West, & Hausken, 1995). Developmental, educational, and sociological theories acknowledged that both home and school are important institutions that socialize and educate children (Grolnick & Slowiaczek, 1994).

Researchers have long accepted that there exists a significant relationship between the educational attainment of parents and the academic performance of their children (Roderick, 1993; Spencer, Dornbusch, & Mont-Reynaud, 1990). Kaplan, Kaplan, and Liu (2000) found that the higher the educational attainment, the more likely mothers would be involved and that the higher the mothers' educational attainment, the less likely the children would be involved in negative school experiences. Gavidia-Payne and Stoneman (1997) found that mothers who enjoyed greater financial security and who were more educated tended to become more involved in their children's programs. They also reported that fathers who are educated and financially secure are the most involved. Research has been consistent in showing that parent support and involvement are important and can buffer adverse effects of family risk, including academic underachievement.

3. Method

This section focuses on: (1) the research design, (2) the sample population, (3) the instrument used, and (4) the research procedures. Following Shaughnessy, Zechmeister & Zechmeister (2000), Stevenson and Baker (1987), and Pettit and Bates (1989), this study used a longitudinal study method to investigate the reasons for attitude or behavior changes. Accordingly, a survey was carried out on parents of Primary Five students because these students would have already been streamed according to EM1, EM2, or EM3. Moreover, Primary Five is not considered a crucial year of study for the child. The Primary Four students will be preparing for their streaming exam and Primary Six students will be preparing for their PSLE exam. Thus, Primary Five seemed to be the most suitable level to conduct a survey on perceived parental behaviors and academic achievement. The sample of students were drawn from Primary Five school students who had been streamed according to their intellectual ability, as measured in the standardized exam taken at the end of Primary Four.

Of four schools contacted for the study, three responded positively but the responses from one school were deemed invalid due to a mistake made by the school in giving the surveys to a wrong group of parents. Table 1 gives the distribution of the sample by schools and gender. Males and females were unequally represented in the total sample, with a higher percentage for PayaLebar Methodist Girls School (67.54%) than for Serangoon Garden South School (32.4%).

A total 374 questionnaires were distributed to parents of primary five students from two primary schools. 305 questionnaires were returned, representing a response rate of 84%. Table 2 shows that, of these, 144 were from fathers (47.2%) and 156 from mothers (51.1%). Responses from guardians or surveys with missing data were discarded. Table 3 shows the distribution of sample by School and Stream. Serangoon Garden South School has almost the same number of students in EM2 (29) and EM3 (27), with a slightly higher number in EM1 (42). However, PayaLebar Methodist Girls Primary School has more students in EM2 (137) than in EM1 (69), with none in EM3.

The ethnic composition of the sample is shown in Table 4. Of the three predominant ethnic groups in Singapore, the Chinese had the highest proportion (91.3%) while the Malays (2.3%) and the Indians (6.3%) were underrepresented. Slightly more mothers responded to the questionnaire (156) than fathers (144). Table 5 shows that the majority (62%) of parents belonged to the 41-50 year old group. There were more fathers (103) than mothers (86) in this age group. The second largest number of parents (29.2%) belong 31-40 year old group. There were more mothers (62) as compared with fathers (24) in this group. Only 2% was from the 20-30 year old group. Table 6 shows that 33.7% of the parents have completed at least the GCE "N" or "O" levels with more mothers (58) than fathers (40) having done so, while 28.5% of all parents have completed their tertiary education, with more fathers (51) than mothers (32) doing so.

Table 7 shows that 27.5% of the parents are managers/professionals, while 23.0% own their own business. More fathers (103) than mothers (44) are in these categories. 18.6% fell under the skilled workers category (e.g., clerical/secretarial, technician), while 26.1% are homemakers/housewives and 4.8% are unemployed. Table 8 shows that 36.9% of the respondents have a total monthly family income of more than \$5,000. 17.0% of the respondents earned between \$1,000 and \$2000, while about a quarter of the respondents earn between \$2,000 and \$4,000. 9.2% of the parents drew less than \$1,000 a month with more mothers (17) in this category.

Specific information of the respondents were collected in terms of age, sex, marital status, education, race, religion, nationality, employment status, and family income, and the stream and sex of the Primary Five child. Holden and Edwards (1989) put together a list of 83 parent attitude questionnaires designed to quantify parental behaviors but a major limitation of their instrument is that it may not be culturally appropriate. In the present study, adjustments were made to the grouping of the questionnaire items and divided into four dimensions of measurable parental behaviors.

The items for the questionnaire (which is available upon request) were derived from The Family Involvement Questionnaire (FIQ), Index of Parental Attitudes (IPA), Parental Bonding Instrument (PBI), as well as the Child Rearing Practices Report (CRPR). The questionnaire is divided into two parts: demographics of parents and child rearing attitudes. It comprises of items that measure warmth, control, communication, and involvement. Subjects responded to each of the question on a four-point Likert Scale: A = Never true; B = Seldom true; C = Quite true; D = Always true. The four-point Likert Scale would then be coded as A = 1, B = 2, C = 3, D = 4. Higher scores indicated greater positive parent-child relationship. The coding of the question that illustrated negative communication had to be reversed to indicate A = 4, B = 3, C = 2, D = 1 with the higher scores to indicate a positive parent-child relationship.

3.1 Warmth

Parental warmth measures the degree of nurturance given by the parent, parent's expression of affect, and the enjoyment of their child. The warmth scale comprises three subscales. Four items measure parental nurturance subscale. For example, "I take care of my child as best as I can," "I understand what my child needs," "I take care of my child as best as I can," and "I can make my child feel better when he/she is upset." Items measuring the affect and enjoyment of child subscale include "I hug and kiss my child," and "I joke and play with my child." Three items indicated negative expression of affect subscale. For example, "I have a great deal of conflict with my child," "I feel that my child is a bit of a disappointment," and "I feel irritated with my child." Reversed scoring was done on these items.

3.2 Control

Parental control is defined as explicit attempts to modify the behavior of another (Pettit and Bates, 1989). The control scale comprises of four subscales that measure supervision/monitoring, openness to experience, discipline, and rules. Items measuring supervision/monitoring include “I know where my child is,” “I know who his/her friends are.” Two negative items in openness to experience had to be reversed in scoring.

They are “I prefer my child not to try things if there is a chance of failure,” & “I try to keep my child away from different ideas & values.”

Positive discipline by parents includes “I explain to my child when I want him/her to do something,” and “I explain to my child my reasons when I discipline him/her.” Positive discipline (inductive method) is explaining to the child when he/she is in the wrong. Negative discipline (coercive method) is using force on the child in the form of physical punishment by parents. Items like “I do not let my child question my decision,” “I believe physical punishment is best for the child,” and “I believe scolding will help the child to grow” have to be reverse-coded. The rules subscale includes “I teach my children to say sorry whenever they are in the wrong,” and “I have rules at home for my child to obey.”

3.3 Communication with Child

This is defined as parents’ spending time listening and talking with the child about their daily events. Good parental communication means speaking to the child in a warm and friendly manner and that the child will tell the parent everything that happens to him or her in school. An example of the item in the communication scale is “I speak to my child in a warm and friendly manner.” One item illustrated a negative communication with the child like “I often say things that hurt my child’s feelings.”

3.4 Involvement

Parental involvement at home is defined as the active promotion of a learning environment at home for children. These include providing a place in the home for learning materials, actively initiating and participating in learning activities at home with children, and creating learning experiences for children in the community (Fantuzzo et al., 2000). Parental involvement has three subscales: (1) School-based involvement; (2) Home-based involvement; and (3) Home-school conferencing. School-based involvement is defined by activities and behaviors that parents engage in at school with their children. Home-based involvement involves situations where the parent spends time alone with the child teaching and playing with him/her. Home-school involvement covers parents’ communication with their child’s teacher about his/her educational experience and progress in school. Parents who get to know the teachers may have more realistic perceptions about the goals of the teacher for the child and thus may be better able to help the child. Cronbach’s Alpha was used to test the reliability of the four measures. The results of the reliability coefficients for both fathers and mothers are reported in Table 9. All alpha coefficients are above 0.50, with a range of 0.51 to 0.88. The highest reliability is provided by the scales for involvement, which have alphas of 0.88 and 0.86 for fathers and mothers, respectively. Parental warmth scales have alphas of 0.85 and 0.79. Control and communication with child have alpha coefficients that range from 0.51 to 0.59.

4. Results

The section reports the findings of parents’ behaviors according to demographic variables, and the differences between parental behaviors and their child’s academic achievement.

4.1 Parental Behaviors

4.1.1 Differences between Fathers’ and Mothers’ Parental Behaviors.

T-tests were used to examine the differences in the warmth of fathers’ and mothers’ parental behaviors (see Table 10). Both fathers and mothers have mean scores of above 3.0 on all three warmth measures, indicating a high level of nurturance. Fathers scored significantly lower than mothers, suggesting that mothers tend to take better care of their children and better understand what their child needs. Table 7 & 8 showed that the majority of the fathers were in the professional category and the family income was above \$5,000. This meant that most mothers were comfortable enough financially to stay home to look after the children. There was no significant difference between fathers and mothers on their expression of affect and enjoyment of their child.

Table 11 presents the results of parental control. While there were no significant differences between fathers and mothers on the openness scale, mothers scored higher on discipline, and rules. They also scored significantly higher ($p < .01$) on supervision than fathers. This means that mothers kept a close watch over their child's friends, knowing who they are and where they go when they are out of the house. An analysis of the subscales on parents' communication with child was done and the results in Table 12 showed that there was a significant difference between mothers & fathers on talking/listening to the child & the child telling everything to his/her parent.

Mothers talk and listen more to the child than fathers ($p < .01$), and the child tells everything that happens to him/her more to mothers than to fathers ($p < .01$).

Table 13 shows that both parents scored relatively low on school-based involvement, with fathers having a significantly lower mean of 1.50 ($p < .01$) than mothers. Both parents were also low on home-school conferencing with fathers having a mean of 1.57 ($p < .01$) compared to mothers' 1.86. However, both parents scored higher for home-based involvement with mothers scoring significantly higher on time alone and organization than fathers (Table 13). While both parents did not spend too much time communicating with their child's teacher, mothers tended to do so significantly more often than did fathers. This means that mothers generally were the ones who meet up with the teachers concerning their child in school. In home-based involvement, both parents have a higher score than school-based or home-school involvement. Again, mothers score significantly higher ($p < .01$) on the measures of time alone with their child and in organization.

4.1.2 Differences in Parental Behaviors According to Child Gender

Table 14 presents the response of parents on parenting behaviors according to the child's gender. The results revealed no significant differences in fathers' behaviors for sons and daughters on all four scales. However, there was a significant difference for mothers in that they demonstrated more warmth, $F(1, 152) = 8.71$, $p < 0.01$, as well as more control, $F(1, 150) = 5.58$, $p < .05$, and involvement, $F(1, 150) = 4.86$, $p < .05$, toward daughters than sons.

4.1.3 Differences in Parental Behaviors According to Parents' Education and Income

The results reveal some differences in the perceived parental behaviors according to a parent's educational level. As shown in Table 15, fathers' warmth and communication vary according to their educational level, $F(5, 130) = 4.51$, $p < .01$, and $F(5, 130) = 3.20$, $p < .01$, respectively, with higher educated fathers demonstrating significantly more warmth than those with lower education. Post hoc tests, based on Tukey's multiple comparison analysis, showed that differences in fathers' warmth between those with little or no education, those with "O" levels, and those with tertiary education. Similarly, the differences in fathers' communication with their children were largest ($p < .05$) between those with little or no education, those who completed primary education, and between those with tertiary education, in favor of those with a higher education.

Among mothers, there were differences in their demonstration of warmth, $F(5, 145) = 4.34$, $p < .01$, and control, $F(5, 143) = 2.93$, $p < .05$, according to their educational level. Post hoc tests showed the greatest difference between mothers with some secondary education and those with "O" and "A" levels. There was no significant difference between mothers with tertiary education and those with lower levels of education. In terms of control, mothers with little or no education had significantly less control ($p < .05$) than those who have completed their "O" levels. There were no significant differences on communication and involvement of mothers based on their educational level. All mothers, regardless of their education, were similarly involved with their children.

Table 16 showed that fathers differed significantly in their warmth, $F(5, 127) = 3.14$, $p < .01$, and control, $F(5, 126) = 3.37$, $p < .01$, according to income. The post hoc results revealed that fathers whose income was between \$4,000 and \$5,000 or greater than \$5,000 were warmer ($p < .05$) toward their children than those who earn \$2,000-\$3,000. Similarly, those in the \$4,000-\$5,000 bracket also have more control ($p < .05$) over their children than those earning \$2,000-\$3,000. There were no significant differences among mothers' behaviors that vary according to their family income. Interestingly, both parents tend to score highest on warmth and lowest on involvement than for the other parental behaviors, regardless of income.

4.2 Differences between Parental Behaviors and Academic Achievement

Table 17 shows no significant difference in perceived fathers' parental behaviors according to the stream of the child. Fathers' warmth, control, communication, and involvement were about the same across all three streams. There was significant difference in mothers' warmth in that EM1 children had mothers who had more warmth than mothers of EM2 and EM3 children.

Post-hoc results showed that the significant difference was between EM1 and EM2. Table 18 shows an analysis of the subscale on control was done according to stream. The results indicated that there was no significant difference in perceived fathers' behaviors in terms of control. However, there was a significant difference between mothers of EM1 and EM3 child (scores of 3.43 and 2.84, respectively). Mothers who monitored their children and who were more open to experiences contributed to the difference in significance. Mothers of EM3 children showed the lowest level of control compared to EM1 and EM2 children, $F(2, 149) = 7.54, p < .01$.

Surprisingly, there was no significant difference in perceived fathers' and mothers' involvement in academics across the three streams.

4.2.1 Communication with Child and Academic Achievement

Table 19 shows the analysis of the subscale on parental communication with their child and found that there was a significant difference in item 4 (child tells everything that happens to him/her) among fathers of EM1 and EM2 pupils. This means that an EM1 child tends to tell the father everything that happens to him/her in school more so than an EM2 child. However, for mothers, children across all academic levels tell them everything that happens to them in school at a relatively high level, with no significant difference among the various levels.

An analysis of the subscale was also done on parental involvement in terms of school-based, home-based, and home-school involvement (Table 20). The results showed that overall there were no significant differences between perceived fathers' and mothers' involvement across all levels. However, the analysis showed that there was a difference for fathers where school-based involvement is concerned.

4.2.2 Parent's Socio-Economic Status and Academic Achievements of the Child

4.2.2.1 Parental Education and Academic Achievement

Table 21 shows the relationship between the parents' education and the academic achievements of the child in terms of EM1, EM2, and EM3. For fathers, the chi-square test showed significant relationship between their education and the academic achievement of the child with $\chi^2(10, N = 137) = 23.85, p < .01$. Fathers who were tertiary educated tended to have children in EM1 ($N = 25$) and EM2 ($N = 26$). The results showed that the higher the fathers' education, the greater the likelihood of their children being in EM1. EM3 pupils tend to have fathers' with lower education. The chi-square test showed a significant association between mothers' education and the academic achievement of the child with $\chi^2(10, N = 153) = 41.98, p < .01$. For mothers, those with tertiary and "O" levels tended to have children in EM1 ($N = 21$) and EM2 ($N = 34$). In contrast, mothers with only primary education tend to have children in EM3. It should be noted that the sample distribution has fewer parents with EM1 students than EM2 and EM3 and therefore the results may be biased.

4.2.2.2 Relationship between Family Income and Academic Achievement

Table 22 shows the relationship between parents' income and stream of the child. The chi-square test does not reveal a significant relationship between fathers' reported family income and the child's academic achievement. However, it is noteworthy that there are 24 pupils in EM1 and 27 in EM2 whose fathers report a family income above \$5,000. Similarly, for mothers, the chi-square test did not show a significant relationship between mothers' reported family income and academic achievement of the child, although more EM1 and EM2 students had mothers who reported a family income above \$5,000.

A t-test was run to find out if the mean difference of the reported family income by fathers and mothers is significant. The results showed that the discrepancy between the two is very slight and negligible. The mean reported by fathers is 4.15 whereas that reported by mothers is 3.96. The difference between the two has a t-statistic of 0.881, which is statistically insignificant.

4.2.2.3 Parents' Occupation and Academic Achievement

Table 23 shows that EM1 and EM2 pupils tend to have fathers who either own their business or hold managerial and professional positions. The chi-square test showed a significant association with $\chi^2(10, N = 136) = 33.12, p < .01$. On the other hand, EM1 and EM2 pupils tend to have mothers who are homemakers. This relationship is significant with $\chi^2(12, N = 154) = 28.07, p < .01$.

5. Summary and Conclusion

This study lends support to the conclusion that parental behavior is related to a child's academic achievements. Parents who were warm and nurturant tend to have children in either EM1 or EM2. In addition, the results showed that the socioeconomic status of the parent was a significant factor in the child's academic achievement. Children from families with lower income and lower education level, tended to be in EM3. The findings of the current study suggest that while fathers and mothers display some congruence of their parental behaviors, mothers are still the ones who are more involved than the fathers in their child's life. We also see that mothers who are tertiary educated are moving away from the traditional role, and that fathers do try to be as involved as best as they can.

We see this especially where fathers are more concerned and involved with a child in EM3 than any others. The SES factors also show that education does play a part in the academic achievement of the child and even though there are no significant differences in family income, still we see that EM1 and EM2 students come from families with higher income level. This supported Ginsburg and Bronstein's study (1993) on familial influences on children's motivational orientation and academic performance, and reveal that children from more economically disadvantaged environments do poorer academically.

Research findings, in this study and others, indicated a link between perceived parental behaviors of parents and academic achievement. It is imperative therefore for teachers, counselors, and others in the helping profession understand the dynamics behind it. Since the findings in this study indicate that fathers with higher educational level tend to have more warmth towards their child and their child tend to be in EM1, schools can develop programs to help fathers as well as mothers of lower educational level to understand the dynamics of effective parenting. Helping parents to work with an underachiever, like those in EM3, may reduce the stress that they were already facing and might even improve their relationship with their child. The content of the program might include how to be nurturant and be more encouraging to an underachiever and lending support to their daily homework. Henderson (1988) agreed that, when low-income parents are trained to work with children, they develop better attitudes, become more active, and help support school activities. They develop higher educational aspirations for their children and this would improve parent-child communication. In this context, Singaporean parents who are not well educated can learn how to relate better to their child and be more supportive in their school activities.

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Appendix

The key variables used in this study are shown below.

Child Variable

Academic Achievement. This is defined as the child's school examination scores at the end of Primary Four that result in the streaming of the child into different achievement classes (EM1, EM2, or EM3).

Parenting Variables

The four domains of parental behaviors in this study are warmth, control, communication with the child, and parental involvement.

Warmth. This refers to the responsiveness and acceptance of the parent toward the child (Linver & Silverberg, 1997). The three subscales of warmth are:

Nurturance. This refers to the way parents care for the upbringing of their child. It includes understanding what the child needs.

Expression of Affect. This refers to the extent that a parent expresses affection by hugging, kissing, and comforting the child when needed (Roberts, Block, & Block, 1984).

Enjoyment of Child. This refers to the extent that the parent finds great satisfaction in having the child (Roberts, Block, & Block, 1984).

Control. This refers to an attempt by parents to shape a child's behavior and the extent to which these restrictions are enforced (Rohner and Pettengill, 1985). It is an attempt to modify the behavior of another (Pettit & Bates, 1989). The four subscales of control are:

Supervision. This refers to parents' knowledge of their child's daily experiences (Crouter, Macdermid, McHale, & Perry-Jenkins, 1990).

Openness to Experience. This refers to parents' openness to letting the child try new things or experiences.

Rules. This refers to parents' expectation of setting the right behavior for the child to follow at home or in school.

Discipline. This is a control attempt by parents using explanation and reasoning rather than coercive methods.

Communication with Child. This construct is defined as the parent taking time out to talk in a warm and friendly manner and to listen to the child when he/she interacts with the parent.

Parental Involvement. This refers to any involvement between a parent and a child that may contribute to the child’s development or to the direct participation in the child’s school in the interest of the child (Reynolds, 1992). The three subscales are:

School-Based Involvement. This is defined by activities and behaviors that parents engage in at school with their children (Fantuzzo, Tighe, and Childs, 2000)

Home-Based Involvement. This includes behaviors describing the active promotion of a learning environment at home for children (Fantuzzo et al., 2000). The two subscales are:

Time alone.

This is defined as the extent to which a parent spends time with the child, in every aspect of the child’s life and in academics. This is done only with the child in question. No other siblings are involved.

Other Variables

Parents’ Education. This refers to the parents’ level of education attained. The educational status of parents is transformed into a 6-point scale, with the lowest value indicating an education level of little or no primary education and the highest value indicating attainment of a graduate degree.

Family Income. This refers to the income of the family as reported by the respondents of the questionnaire.

Figure 1. Model Relating Parental Behaviors and Academic Achievement.

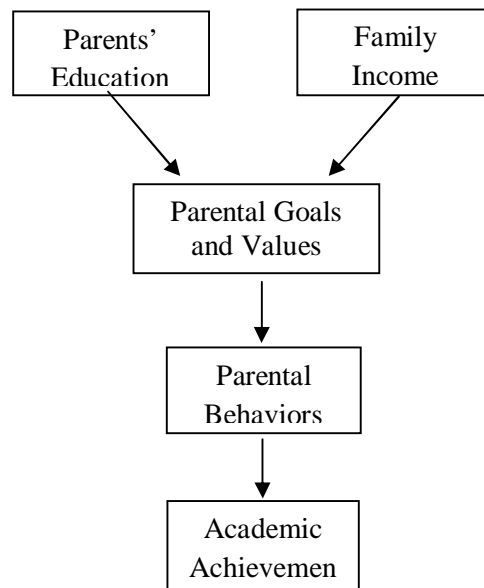


Table 1: Distribution of Sample by School and Pupil Gender

School	Male	Female	<u>N</u>	%
Serangoon Garden South School	54	45	99	32.46
PayaLebar Methodist Girls Primary School	-	206	206	67.54
Total	54	251	305	100.00

Table 2: Distribution of Sample by Parent Type

Parent	Frequency	%
Father	144	47.2
Mother	156	51.1
Guardian	4	1.3
Missing	1	0.3
Total	305	100.0

Table 3: Distribution of Sample by School and Stream

School	EM1	EM2	EM3	Missing	Total	%
Serangoon Garden South School	42	29	27	1	99	32.46
PayaLebar Methodist Girls Primary School	69	137	-	-	206	67.54
Total	111	166	27	1	305	100.00

Table 4: Distribution of Sample by Race

Race	Father		Mother		Total	
	<u>N</u>	%	<u>N</u>	%	<u>N</u>	%
Chinese	131	91.0	143	91.7	274	91.33
Malay	4	2.8	3	1.9	7	2.33
Indian	9	6.2	10	6.4	19	6.33
Total	144	100.0	156	100.0	300	100.00

Table 5: Distribution by Parents' Age

Age	Father		Mother		Total	
	<u>N</u>	%	<u>N</u>	%	<u>N</u>	%
20-30	2	1.4	3	1.9	6	2.0
31-40	24	16.8	62	40.0	89	29.2
41-50	103	72.0	86	55.5	189	62.0
>50	14	9.8	4	2.6	18	5.9
Total	143	100.0	155	100.0	305	100.0

Table 6: Distribution of Parents' Educational Background

Education	Father		Mother		Total	
	<u>N</u>	%	<u>N</u>	%	<u>N</u>	%
Little or No Schooling	6	4.3	10	6.5	16	5.5
Completed Primary School	12	8.7	10	6.5	22	7.6
Some Secondary School	19	13.8	20	13.1	39	13.4
Completed 'N' or 'O' Levels	40	29.0	58	37.9	98	33.7
Completed 'A' Levels	10	7.2	23	15.0	33	11.3
Completed Tertiary Education	51	37.0	32	20.9	83	28.5
Total	138	100.0	153	100.0	291	100.0

Table 7: Distribution of Parents' Employment

Employment	Father		Mother		Total	
	<u>N</u>	%	<u>N</u>	%	<u>N</u>	%
Managerial/Professional	54	39.4	26	16.9	80	27.5
Own Business	49	35.8	18	11.7	67	23.0
Skilled Worker	24	17.5	30	19.4	54	18.6
Homemaker/Housewife	0	0.0	76	49.4	76	26.1
Unemployed	10	7.3	4	2.5	14	4.8
Total	137	100.0	154	100.0	291	100.0

Table 8: Distribution of Family Income

Income per Month	Father		Mother		Total	
	<u>N</u>	%	<u>N</u>	%	<u>N</u>	%
<\$1,000	8	5.9	17	12.5	25	9.2
\$1,000-\$2,000	24	17.8	22	16.2	46	17.0
\$2,000-\$3,000	22	16.3	18	13.2	40	14.8
\$3,000-\$4,000	17	12.6	20	14.7	37	13.7
\$4,000-\$5,000	13	9.6	10	7.4	23	8.5
>\$5,000	51	37.8	49	36.0	100	36.9
Total	135	100.0	136	100.0	271	100.0

Table 9: Cronbach Alpha Reliability Tests

Scale of Parental Attributes	Description	Coefficient of Father	Coefficient of Mother
Warmth	Parental behaviors involving nurturance, expression of affect, and enjoyment of child	0.85	0.79
Control	Supervision, over-protectiveness, method of discipline, and rules	0.51	0.57
Communication with Child	Extent of self-disclosure and quality of affect in parent-child communication	0.59	0.55
Involvement	School-based, home-based, and home-school conferencing	0.88	0.86

Table 10: Parental Warmth of Fathers and Mothers

Warmth	Father		Mother		t
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Nurturance	3.18	0.61	3.32	0.53	-2.14*
Expression of Affect	3.23	0.61	3.21	0.66	0.19
Enjoyment of Child	3.48	0.62	3.53	0.48	-0.71

* $p < .05$, ** $p < .01$

Table 11: Parental Control of Fathers and Mothers

Control	Father		Mother		t
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Supervision	3.02	0.55	3.25	0.51	-3.74**
Openness to Experience	3.06	0.55	3.14	0.52	-1.13
Discipline	2.63	0.49	2.73	0.52	-1.71
Rules	3.36	0.60	3.46	0.54	-1.48

* $p < .05$, ** $p < .01$ **Table 12: Parents' Communication with Child**

Communication with Child	Father		Mother		t
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Talk and Listen	2.87	0.75	3.22	0.80	-3.89**
Hurt Child's Feelings	3.29	0.75	3.20	0.81	0.97
Warm & Friendly	3.16	0.71	3.13	0.79	0.29
Child Tells All	2.28	0.91	3.14	0.82	-3.55**

* $p < .05$, ** $p < .01$ **Table 13: Parental Involvement of Fathers and Mothers**

Involvement	Father		Mother		t
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
School-based	1.50	0.53	1.70	0.61	-2.87**
Home-based					
Time Alone	2.90	0.70	3.23	0.60	-4.33**
Organization	3.00	0.66	3.31	0.59	-4.19**
Home-School	1.57	0.67	1.86	0.73	-3.50**

* $p < .05$, ** $p < .01$

Table 14: Parental Behaviors According to Child’s Gender

Child’s Gender	Son		Daughter		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father’s Behavior					
Warmth	3.17	0.44	3.32	0.52	1.48
Control	2.83	0.27	2.92	0.36	1.20
Communication	2.92	0.51	3.04	0.54	0.85
Involvement	2.46	0.33	2.47	0.48	0.01
Mother’s Behavior					
Warmth	3.11	0.49	3.40	0.43	8.71**
Control	2.89	0.37	3.07	0.33	5.58*
Communication	3.10	0.53	3.19	0.54	0.48
Involvement	2.53	0.40	2.74	0.44	4.86*

*p< .05, **p< .01

Table 15: Parental Behaviors According to Education Level

Education Level	Little None		or Completed Primary		Some Secondary		Completed ‘N’ or ‘O’ Levels		Completed ‘A’ Levels		Tertiary		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father’s Behavior													
Warmth	2.58 ^{a,b}	0.54	3.22	0.60	3.21	0.61	3.28 ^a	0.42	3.11	0.77	3.47 ^b	0.35	4.51**
Control	2.62	0.44	2.80	0.34	2.92	0.40	2.91	0.34	2.83	0.44	2.97	0.30	1.33
Communication	2.42 ^{a,b}	0.41	3.18 ^a	0.73	3.07	0.55	2.93	0.60	2.83	0.41	3.15 ^b	0.35	3.20**
Involvement	2.31	0.65	2.49	0.53	2.54	0.43	2.43	0.50	2.24	0.49	2.51	0.38	0.86
Mother’s Behavior													
Warmth	3.13	0.38	3.16	0.52	3.05 ^{a,b}	0.47	3.42 ^a	0.42	3.56 ^b	0.38	3.38	0.42	4.34**
Control	2.77 ^a	0.36	2.96	0.37	2.91	0.40	3.12 ^a	0.34	3.14	0.25	3.03	0.31	2.93*
Communication	2.85	0.73	3.08	0.67	3.04	0.58	3.25	0.48	3.38	0.53	3.08	0.44	2.22
Involvement	2.49	0.33	2.81	0.56	2.59	0.55	2.69	0.41	2.83	0.46	2.77	0.37	1.30

*p< .05, **p< .01

^{a,b}Tukey’s post hoc multiple comparison test is significant at 5% level.

Table 16: Parental Behaviors According to Income Level

Income Level	<\$1,000		\$1,000- \$2,000		\$2,000- \$3,000		\$3,000- \$4,000		\$4,000- \$5,000		>\$5,000		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father's Behavior													
Warmth	3.16	0.41	3.26	0.49	3.02 ^{a,b}	0.66	3.27	0.53	3.59 ^a	0.23	3.40 ^b	0.39	3.14 ^{**}
Control	2.91	0.33	2.88	0.37	2.71 ^a	0.42	2.88	0.38	3.19 ^a	0.19	2.93	0.30	3.37 ^{**}
Communication	2.91	0.44	2.97	0.66	2.80	0.67	3.12	0.59	3.35	0.40	3.05	0.39	2.08
Involvement	2.59	0.63	2.54	0.44	2.29	0.50	2.52	0.59	2.48	0.24	2.45	0.42	0.89
Mother's Behavior													
Warmth	3.32	0.47	3.23	0.53	3.32	0.31	3.43	0.41	3.53	0.42	3.45	0.38	0.50
Control	3.07	0.31	2.89	0.43	3.00	0.26	3.04	0.36	3.19	0.11	3.08	0.34	0.03
Communication	3.34	0.65	3.11	0.68	3.31	0.32	3.16	0.49	3.25	0.41	3.14	0.43	0.64
Involvement	2.87	0.51	2.48	0.50	2.58	0.40	2.68	0.45	2.76	0.21	2.80	0.45	0.56

* $p < .05$, ** $p < .01$ ^{a,b}Tukey's post hoc multiple comparison test is significant at 5% level.**Table 17: Parental Behaviors According to Stream of Child**

Stream of Child	EM1		EM2		EM3		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father's Behavior							
Warmth	3.37	0.48	3.27	0.54	3.20	0.30	0.84
Control	2.96	0.34	2.88	0.35	2.91	0.26	0.92
Communication	3.08	0.48	2.98	0.57	3.00	0.54	0.54
Involvement	2.47	0.40	2.43	0.48	2.73	0.51	2.09
Mother's Behavior							
Warmth	3.48 ^a	0.39	3.28 ^a	0.47	3.22	0.35	3.91 [*]
Control	3.13 ^a	0.26	3.00	0.37	2.77 ^a	0.43	5.23 ^{**}
Communication	3.22	0.49	3.15	0.57	3.06	0.42	0.46
Involvement	2.73	0.44	2.69	0.42	2.80	0.60	0.33

* $p < .05$, ** $p < .01$ ^aTukey's post hoc multiple comparison test is significant at 5% level.

Table 18: Parental Control According to Stream of Child

Stream of Child	EM1		EM2		EM3		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father's Control							
Monitoring	3.14	0.59	2.93	0.54	3.11	0.34	2.57
Openness	3.16	0.50	3.06	0.55	2.75	0.59	2.76
Discipline	2.57	0.39	2.65	0.53	2.87	0.56	1.79
Rules	3.36	0.54	3.37	0.67	3.39	0.44	0.01
Mother's Control							
Monitoring	3.43 ^{ab}	0.43	3.18 ^a	0.50	2.84 ^b	0.73	7.54**
Openness	3.22 ^a	0.42	3.12 ^b	0.57	2.66 ^{ab}	0.42	4.26*
Discipline	2.74	0.41	2.72	0.57	2.80	0.73	0.12
Rules	3.46	0.53	3.47	0.55	3.31	0.51	0.32

* $p < .05$, ** $p < .01$ ^aTukey's post hoc multiple comparison test is significant at 5% level.**Table 19: Parents' Communication with Child and Academic Achievement**

Stream of Child	EM1		EM2		EM3		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father's Communication							
Talk and Listen	2.92	0.68	2.84	0.80	2.64	0.67	0.70
Hurt Feelings	3.23	0.79	3.39	0.65	3.02	0.94	1.32
Warm & Friendly	3.17	0.55	3.12	0.82	3.27	0.65	0.26
Child Tells All	2.98 ^a	0.80	2.59 ^a	0.94	3.00	1.00	3.29*
Mother's Communication							
Talk and Listen	3.26	0.79	3.21	0.81	3.00	0.76	0.38
Hurt Feelings	3.17	0.73	3.27	0.83	2.75	1.04	1.58
Warm & Friendly	3.24	0.71	3.03	0.83	3.38	0.74	1.61
Child Tells All	3.21	0.74	3.09	0.84	3.13	1.13	0.33

* $p < .05$, ** $p < .01$ ^aTukey's post hoc multiple comparison test is significant at 5% level.

Table 20: Parent's Involvement According to Stream of Child

Stream of Child	EM1		EM2		EM3		F
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Father's Involvement							
School-based	1.49 ^a	0.43	1.42 ^b	0.47	2.02 ^{a,b}	0.86	7.16**
Home-based							
Time Alone	2.94	0.74	2.86	0.69	3.05	0.55	0.49
Organization	2.98	0.65	3.00	0.68	3.20	0.46	0.56
Home-School	1.57	0.60	1.50	0.65	1.98	1.02	2.49
Mother's Involvement							
School-based	1.70	0.62	1.67	0.57	2.00	1.01	1.06
Home-based							
Time Alone	3.30	0.56	3.17	0.63	3.34	0.67	0.90
Organization	3.25	0.55	3.28	0.62	3.25	0.63	0.24
Home-School	1.84	0.74	1.85	0.70	2.09	1.09	0.44

* $p < .05$, ** $p < .01$ ^aTukey's post hoc multiple comparison test is significant at 5% level.**Table 21: Relationship between Parents' Education and Stream of Child**

Stream of Child	EM1	EM2	EM3
	<u>N</u>	<u>N</u>	<u>N</u>
Father's Education $\chi^2(10, N = 137) = 23.85^{**}$			
Little or None	0	4	2
Primary	2	8	2
Some Secondary	4	11	3
"O" Levels	14	22	4
"A" Levels	7	3	0
Tertiary	25	26	0
Mother's Education $\chi^2(10, N = 153) = 41.98^{**}$			
Little or None	1	8	1
Primary	1	4	5
Some Secondary	6	13	1
"O" Levels	21	34	3
"A" Levels	10	13	0
Tertiary	17	15	0

* $p < .05$; ** $p < .01$

Table 22: Relationship between Family Income and Stream of Child

Stream of Child	EM1	EM2	EM3
	<u>N</u>	<u>N</u>	<u>N</u>
Father's Family Income $\chi^2(10, \underline{N} = 134) = 17.02$			
< \$1,000	2	4	2
\$1,000 - \$2,000	7	12	5
\$2,000 - \$3,000	7	12	2
\$3,000 - \$4,000	5	11	1
\$4,000 - \$5,000	5	8	0
> \$5,000	24	27	0
Mother's Family Income $\chi^2(10, \underline{N} = 136) = 14.91$			
< \$1,000	7	6	4
\$1,000 - \$2,000	6	14	2
\$2,000 - \$3,000	5	13	0
\$3,000 - \$4,000	9	10	1
\$4,000 - \$5,000	4	5	1
> \$5,000	21	27	1

Table 23: Relationship between Parents' Occupation and Stream of Child

Stream of Child	EM1	EM2	EM3
	<u>N</u>	<u>N</u>	<u>N</u>
Father's Occupation $\chi^2(10, \underline{N} = 136) = 33.12^{**}$			
Own Business	14	33	1
Clerical/Secretarial	2	1	1
Technician	6	10	4
Managerial/Professional	27	26	1
Homemaker	0	0	1
Unemployed	2	4	0
Others	1	0	2
Mother's Occupation $\chi^2(12, \underline{N} = 154) = 28.07^{**}$			
Own Business	6	11	1
Clerical/Secretarial	6	20	1
Technician	2	1	0
Managerial/Professional	15	11	0
Homemaker	29	40	7
Unemployed,	0	0	1
Others	0	3	0

*p < .05; **p < .01