

The mediating role of parental involvement with school for the relation between parental education and the child's outcomes at school

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PREFACE

This study is part of social integration of migrant children: uncovering resilience (SIMCUR) project which has been conducted at the Center of Child and Family Studies of Leiden University. The main goal of SIMCUR project is to uncover the processes underlying developmental resilience in children from migrant families during the transitions to primary and secondary education in the Netherlands.

During my internship within this project, I learned how to contact families during the recruitment process, how to collect data and how to analyze them. I learned how to write a thesis and how to use statistical methods to analyze the data during the course of “Practice with empirical research” taught by professor Pieter Kroonenberg.

I would like to thank professor Judi Mesman for giving me the chance to join this interesting project and for providing me with her invaluable advice when writing my thesis. Many thanks go to my other supervisor Nihal Yeniad for her continuous guidance and priceless help with my thesis. Both, my supervisors supported me during the project and provided prompt and continuous feedback.

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ABSTRACT

This study examined the mediating role of parental involvement with school on the relation between parental education level and two child outcomes: academic work habits and social networks. Teachers rated questionnaires were used to provide information on parental involvement, academic work habits and social networks for 45 children of second generation Turkish mothers living in the Netherlands. Results showed that parental education level and academic work habits were significantly correlated. No other significant associations were found among the other variables. Results did not support the mediation model of parental involvement with the school on the relation between parental education level with academic work habits and social networks.

KEY WORDS: education, parental involvement with school, Turkish mothers, teachers, children

INTRODUCTION

The question of how parental characteristics influence educational outcomes has been an attractive topic for many educational researchers in the last decades. A great body of work has established a strong link between parents' characteristics (e.g., education level, parental investment in children, occupation, marital status, health) and children's outcomes (i.e., academic achievement, peer relationships, social adjustment) (Fantuzzo et al., 2000; McWayne et al., 2008; Stevenson & Baker, 1987). In trying to fully understand the relation between the predictors and outcomes, different mediation and moderation models have been tested with multiple predictors. It seems hard to draw a general conclusion due to the multidimensional nature of the relation between parental characteristics and child outcomes (Bobbett et al., 1995; Christenson et al., 1992; Fan & Chen, 2001). Multidimensional nature of this relation should be investigated in detail.

Parental education level and their commitment with their children's school related activities have been considered as important and supportive aspects on children's academic achievement (Bogenschneider, 1997; Stevenson & Baker, 1987). Parental commitment with the school related activities include being involved both at home and school (Zellman & Waterman, 1998). These two types of involvement would require a familiarity of the parents with educational activities, educational institutions and norms and regulations at an educational setting. This study will examine the relation of two child outcomes (academic work habits and social networks) with parental education level and parental involvement with the school.

Child outcomes: Academic work habits and social networks

Researchers have focused on positive child outcomes at school predicted by parental characteristics. Among them they have identified academic achievement, lower dropout rates, positive attitude towards school, and social competence (Bogenschneider, 1997; Christenson et al., 1992; Kohl et al., 2000; Steinberg & Brown, 1989; Steinberg et al., 1992; Zellman & Waterman, 1998). Different components of academic achievement related to children's attitude and habits related to school such as academic attitudes (Jeynes, 2005) and academic work habits (Hill & Craft, 2003; Marcon, 1999) have also been studied.

Social networks have been described with different relationship types such as peer acceptance, friendship and relationship stages including formation and maintenance (Hawley, 2002; Ladd, 1999). By middle childhood, more than 30% of children's social interactions involve

peers (Gifford-Smith & Brownell, 2003). Findings of a longitudinal study with Swedish children showed that social competence with peers remains relatively stable from 40 months to 15 years of age (Campbell et al., 2000). This result suggests that findings on social networks would be similar for children of different ages. While social networks is considered as a final outcome, it may have an impact on other child outcomes as well. Children's peer relationships are predictive of the development of social networks (Gifford-Smith & Brownell, 2003) as well as academic achievement (Hill & Craft, 2003; Wentzel, 1991a). Children who have larger number of social networks at school have better school adjustment and this leads to academic achievement. The association of social networks with positive child outcomes and its relative stability over time has pushed the researchers to study its predictors. Parental education level and involvement with the child's school are two important elements for the child's academic performance (Bronfenbrenner, 1986; Dempsey, 1995; Muller, 1998; Smith et al., 2003; Stevenson & Baker, 1987).

Parental education level as a predictor of child outcomes

Parental socio-economic status (SES) has been considered among the most common parental factors predicting the child's educational outcomes (Dempsey, 1995; Fantuzzo et al., 2000; Lawson, 2003; Magnuson et al., 2009; Muller, 1998; Stevenson & Baker, 1987). A considerable number of studies have established a direct link between family SES and the children's language, cognitive and academic achievement and they suggest that parents with a higher level of education contribute to a larger investment of time and improvements of the child's language skills, which can be related to the children's educational outcomes (Dempsey, 1995; Lawson, 2003; Magnuson et al., 2009; Powell et al., 2010; Stevenson & Baker, 1986; White, 1982;). These findings are in line with two models of Conger and Donnellan (2007), which explain the association between SES and child outcomes: i) family stress model and ii) family investment model. According to the family stress model, parents who are under economic pressure are more likely to place their children in high risk for adjustment problems in all areas of life (e.g., social competence, emotional and physical well-being, academic performance and cognitive ability). The family investment model shows that parents with a higher SES (e.g., income, education and occupation) invest more in the children's healthy development compared to those with a lower SES. The main types of investment have been identified as financial (income), social (status) and human (education).

One of the earliest and well-known measures of SES is Hollingshead's Two-Factor Index of Social Position, which uses two indices to categorize families into social classes: occupation

index and educational attainment index (Hollingshead & Redlich, 1958). Studies show that family's socio-economic background affects academic achievement and in many of them parental education level has been considered as the sole measure of SES (Bakker et al., 2007; McCartney et al., 1982, White, 1982). There have been studies, which showed that low parental education level combined with low income leads to high risk for the children's academic failure through less amount of involvement between family and school (Dearing et al., 2006; McWayne et al., 2008).

According to the family stress model, parents with a low SES can put children at high risk for social exclusion, which leads to antisocial behavior and a decline in social networks of the children (Conger et al., 2007; Strohschein, 2005). This is in line with the findings of a study in an Australian community sample where children from low SES families were more likely to: i) be suspended from the school, ii) be excluded from their friends or associate with anti-social peers, iii) have low academic achievement and iv) have high levels of adjustment problems (Hemphill et al., 2010). Considering that parental education is one of the most important constituents of the SES construct, researchers have studied its predictive power on social networks. Maternal education level is found to be strongly associated with social competence with peers and number of close friends (Lamb et al., 1988; NICHD, 2008).

Parental involvement with the school

Definitions and types of parental involvement

Parental involvement with the school has been defined as a complex construct consisting of a variety of parental behaviors (Zellman & Waterman, 1998). Parental involvement is characterized by an interaction between children, parents and teachers, and parents' knowledge about how school functions, schooling importance and how to decide about educational options (Baker & Stevenson, 1986). Simply, it means parents' interest and willingness in their children's education (Lawson, 2003).

Researchers have offered several definitions of parental involvement. The concept is considered to include five main components such as: i) educational expectation/aspiration for children, ii) communication with children about school-related matters, iii) parental supervision related to school matters at home, iv) parental participation in school activities and v) other/general parental involvement (Fan & Chen, 2001). In addition, other activities such as: i) volunteering in the classroom, ii) communicating with the teacher, iii) communicating the positive value of education, and iv) participating in the parent-teacher meetings were also

documented under the concept of parental involvement (Hill & Taylor, 2004). Among many dimensions of parental involvement, researchers have stressed the importance of conveying their expectations to the children and the continuous communication about school matters as a driving force for the children (Hess et al., 1984; Peng & Wright, 1994; Voekl, 1993). For example, by engaging in school-related activities (i.e., helping with homework, volunteering in school activities) parents at the same time clearly convey their valuing of attention and time devoted to school activities and this way they send strong and consistent messages that education is valuable and important (Dempsey, 1995).

Diversity in definition, measurement and samples has led to some confusion to the whole understanding of its effect on many outcomes. Sometimes parental involvement with the school has been measured based on parents' evaluations, teachers' evaluations (Arnold et al., 2008) and sometimes on students' evaluations (Muller, 1995). While even the researchers show different approaches to the construct of parental involvement, parents and teachers also show different understandings. Moreover, it is found that by combining parents' and students' reports, two dimensions of involvement are established: (i) whether the locus of the activity is at home or at school and (ii) whether such activity can be characterized as parental management of a child's educational career or intervention in a crisis (Muller, 1998).

The association between parental involvement with the school and parental education level

Researchers have investigated many factors that are associated with parental involvement with the school such as parental education level, income, child's age (Izzo et al., 1999; Muller, 1995; Stevenson & Baker, 1987), family structure and marital status (Zellman & Waterman 1998) and occupation (Muller, 1995). Parents from higher socioeconomic backgrounds were found to be more likely to be involved in schooling than parents of lower SES. The reason for this can be that parents from lower socioeconomic backgrounds face many more barriers to involvement, including nonflexible work schedules, lack of resources, transportation problems and stress due to residing in disadvantaged neighborhoods (Hill & Taylor, 2004). However, some parents do not tend to identify their low level of SES and neighborhood factors as barriers to parental involvement (Parker et al., 2001). Compared to full time employed mothers, part time employed ones have the highest level of involvement in the child's school (Muller, 1995). Among all these factors that affect parental involvement, parental education level has been considered as the most important one. There is a positive correlation between parental level of education and parental

involvement (Bogenschneider, 1997; Grolnick et al., 1997; Waanders et al., 2007) and higher education level of parents is positively associated with a greater tendency for them to advocate for their children's placement in honors courses and actively manage their children's education (Baker & Stevenson, 1986). Higher parental education level provides skills and materials to maximize the effectiveness of parental school involvement (Bogenschneider, 1997).

Parents with higher education level engage their children in more learning-related activities both at home and at school; they are more aware of their children's academic achievement; make more efforts to improve children's education and they contact the school more often to make sure that the child is succeeding at school than parents with lower education level (Dauber & Epstein, 1993; Davis-Kean, 2005; Fantuzzo et al., 2000; Kohl et al., 2000; Stevenson & Baker, 1986).

From the perspective of family investment model, the child's development in a family is affected by the parental or primary caregiver's type of investment. With respect to the parental education level, one would expect that the type of investment would be the human capital investment and we can identify parental school involvement as such. This may be expected since parents with higher educational level (based on better experiences with the school) are more comfortable to be involved with the school than parents with lower educational level.

Parental involvement with the school as a predictor of child's outcomes

Parental involvement has been considered a potential predictor for positive child outcomes such as academic achievement, lower dropout rates, less behavior and learning problems, positive attitude towards school and social competence. (Bogenschneider, 1997; Christenson et al., 1992; Kohl et al., 2000; Steinberg & Brown, 1989; Steinberg et al., 1992; Zellman & Waterman, 1998). Parental involvement with the school has long-lasting effects on children's life via positive effects starting from an early age with the development of literacy (Dearing et al., 2006; Englund et al., 2004; Epstein, 1991; Georgiou, 1999; Hill & Craft, 2004; Izzo et al., 1999; Rauh et al., 2003; Zellman & Waterman 1998), to high school with better grades (Bogenschneider, 1997) and up to age of 20 with higher academic achievement (Barnard, 2004). Some studies show that, improvement in student attitude, increased attendance, fewer discipline problems and higher aspirations have been correlated with parental involvement (Walker et al., 2004). At the same time, high levels of parental school involvement are associated with high scores in reading, fewer child learning problems rated by the teacher (McWayne et al., 2008) and academic work habits (Hill & Craft, 2003).

Many studies point in the same direction when examining the association of parental involvement with child outcomes, but a few have shown that the effect of parental involvement with the school on child outcomes has been attenuated or completely diminished when controlling for other parental characteristics such as parental education and SES. For example, in a study with high school students, it is shown that the association of maternal and paternal involvement with the school with grade point average (GPA), while still significant, is attenuated once controlling for maternal and paternal education level (Bogenschneider, 1997). In another study which involves 16-year-old students, the impact of parental involvement on educational outcomes (as measured by standardized tests on reading comprehension, math, social studies and science) is diminished once controlling for SES (Jeynes, 2005).

Parental school involvement usually operates through two mechanisms (social capital and social control) to lead to the child's academic work habits (Hill & Craft, 2003). Social capital mechanism occurs as parents acquire more information about the school when they contact both school officials and other parents. This way, parents learn school's expectations, school policies and practices, which may improve the way that they help their children with homework and other school related activities. In parental school involvement construct, the social capital mechanism views the parent-teacher dyad as a fit to gather more information capital on how to build a better collaboration. Thus, it is not only for parents to learn more rules and expectations but also parents should be heard by the teachers. During the teacher-parent meetings, teachers learn about parents' expectations for their children and their children's teachers. This mechanism (social capital) is related to academic work habits and other dimensions of academic achievement.

"Social networks" is another child outcome that is predicted by parental involvement with the school. Parental school involvement, which can be identified as a human capital investment according to the family investment model, is found to be associated with early school success, including academic and language skills, school adjustment and social networks (Grolnick & Slowiaczek, 1994; Grossman et al., 2002; Hill & Craft, 2003; Ladd, 1999; NICHD, 2008; Powell et al., 2010; Simons-Morton & Crump, 2003). In addition, involvement of parents and teachers in the child's social development, facilitates the child's coping with anxiety in social interactions (King et al., 1997). Parental involvement with the school is found to promote early academic and social skills that are predictive of later school success (Powell et al., 2010) and its positive benefits have been found to last through age of 20 (Barnard, 2004). The link between parental involvement with the school and social networks occurs through social control mechanism. This mechanism occurs when the stronger social bonds to school and family institutions keep one from committing deviant acts and behaviors (McNeal, 1995). Naturally,

children can very easily do certain mistakes, both at home and at school. Home and educational institutions through rules and expectations present certain constraints to the behavior of the children, and as such they would be less likely to commit problematic behaviors (McNeal, 1999).

Research questions

The main aim of this study is to contribute to the literature by investigating the extent to which parental education level is associated with the child's academic work habits and social networks at school through the mediating role of parental involvement with the school. Our research questions were as following:

- 1. Does parental involvement with the school mediate the association between parental level of education and academic work habits?*
- 2. Does parental involvement with the school mediate the association between parental education level and the child's social networks?*

METHOD

Participants

This study is a part of the SIMCUR project (social integration of migrant children: uncovering resilience), which has been carried out at the Center of Child and Family Studies of Leiden University. Children of 45 second generation Turkish parents in the Netherlands and their teachers participated in this study. The sample was categorized as the youngest cohort and the adolescent cohort. The first cohort included 30 five-year-old children aged between 5.25 years and 6.49 years with a mean age of 5.87 years at the 2nd grade of primary school and the second cohort contained 15 twelve-year-old children aged between 11.43 years and 12.46 years with a mean age of 11.90 years at the 8th grade of secondary school. The sample consists of 30 girls and 15 boys.

Procedure

Data collection was done in two consecutive years of 2009-2010 and 2010-2011. Families were recruited through municipal records of several cities in the Netherlands according to some criteria. The selection criteria were as following: 1) the child was born from October 1st 1996 - September 30th 1998 or 2003 - 2004 years, 2) one of the parents was born in the Netherlands, if the mother was not born there, she had migrated to the Netherlands before she was 10 years old, 3) the child moved from grade 2 into grade 3 or the child moved from grade 8 into first year of secondary school, which means that he/she was in the transition year and was not supposed to fail that academic year. Some subjects were excluded during the recruitment process. Exclusion criteria of the subjects were as following: 1) the child was in special education, 2) the child or the mother had psychiatric/medical problems.

Families were sent an invitation by mail, to participate in this project. Families who agreed to participate were recruited by visiting them at home and taking their consent on a face to face meeting. Families who did not respond at all to our invitation were also visited. They were provided more information about the project and they were given research brochures. If they were not interested they were asked to fill out a non-response form. Recruited families filled out a demographic information form and they signed an informed consent form for both the home visit and the contact with the child's school administration. Every family was visited once and both, mother and father, filled out the questionnaires before and during the home visit. We called the schools and asked them about their participation to the study. Participating school administrators

and teachers answered questions about the school characteristics, their students in general and the different activities at school and they were asked to send the questionnaires back by mail. Teachers also provided individual information about each participating child and his/her parents in the research. Most of the teachers had one or two participating children in their classrooms. Teachers rated the child's academic performance, the social networks at school and they reported parental involvement with the child's school.

Measures

We measured social networks and academic work habits by using a teacher questionnaire. The questionnaire, which measures the first two variables, was adapted from the child evaluation used in National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development in 2009. The questionnaires used by NICHD are part of School and Staffing Survey (SASS), an integrated system of surveys developed over the last 30 years. We also measured parental involvement with the school using an adapted questionnaire from Parent-Teacher Involvement Questionnaire, developed at the Oregon Social Learning Center (Arnold et al., 2008). More information about the background of the survey and its quality is found in Appendix A.

Social networks The questionnaire which includes three items measures individual child social networks and friendships relation in class. Teachers provided information about the child's social networks at school. They reported on how well does each child get along with (1) Dutch friends, (2) Turkish background friends and (3) friends with other backgrounds at school. A 5-point response scale was used to answer these questions (1 = *not at all*, 2 = *not very well*, 3 = *a little*, 4 = *quite well*, 5 = *very well*). The total score of three items from the teacher questionnaire was computed for the statistical analyses.

Academic work habits The questionnaire that involves five items measures the child's school performance and work habits relative to class. Teachers rated the performance of the child related to the work habits including the child's ability to work independently, neatly and carefully; to use the time wisely, to complete work promptly, and to keep the material organized on a 5-point scale (1 = *very poor*, 2 = *somewhat poor*, 3 = *average*, 4 = *good*, 5 = *very good*). We have used the total score of the five items for the analyses. The internal consistency for the scale is (.92).

Parental involvement with the school Parental involvement with the school was measured with the Teacher Questionnaire. Teachers were asked to rate the parent's responsibility in regard with the child's readiness to school, their level of communication with the school, their time spent on working at school, their level of supporting the child's education, and the possibility of contacting or be contacted by the parent. A 5-point response scale was used for all the questions (1 = *not at all*, 2 = *not very much*, 3 = *a little*, 4 = *quite a lot*, 5 = *very much*). For the statistical analyses the total score of the five items was used. The Cronbach's alpha for this scale is (.77).

Parental education level The information about parental education level was taken from the demographic information form (DIF). Parents were asked to indicate their highest education level they had completed, during the recruitment interview. A list of education levels was provided starting from "no education" to "higher education second step". This variable included six categories: 1) the primary school (lagere school), 2) the lower vocational education (lager beroepsonderwijs), 3) the secondary vocational school (middelbaar beroepsonderwijs), 4) the secondary education (voortgezet onderwijs), 5) the higher education first step (hoger onderwijs eerste stap) and 6) the higher education second step (hoger onderwijs tweede stap). Parental education level was the predictor variable for the statistical analyses. By checking the multicollinearity, we found that the maternal and paternal education level were moderately correlated ($r = .46$). Parental education level was calculated by taking the means of both maternal and paternal education level.

Data Inspection

The study variables were examined for specific assumptions applying to statistical techniques that were used in the analyses. Data were inspected for normality, outliers and missing values. Descriptive statistics, histograms, boxplots, scatterplots, and quantile-quantile plots (QQ plots) were used to examine the outliers and the normality of the distribution of the variables. Matrix scatterplot was used to see the correlations among the variables with the regression line showing the direction of the correlation. Missing data on the variables of interest were also examined. All analyses were conducted using the Statistical Package for Social Sciences (SPSS for Windows, version 19.0, SPSS Inc., Chicago).

Method of Analyses

A mediating variable is called an intervening variable which helps explain the relationship between a predictor and a response variable. The mediation model suggests that the predictor variable causes a mediator which then causes a response variable and this is called indirect effect. From this presumption it is concluded that the mediation model is a causal model (Baron & Kenny, 1986). In this study it is suggested that parental education level come prior to parental involvement with the child's school and parental involvement is an important process for understanding the child's outcomes such as academic work habits and social networks. In our study we examined two mediation models: 1) whether parental involvement helps to explain the relationship between parental education level and the child's academic work habits and 2) whether parental involvement explains the association between parental education level and the child's social networks. Statistical evidence of mediation effects can be established using a series of linear regressions testing whether: a) predictor variable is related to the response variables, b) predictor variable is related to the proposed mediator and c) the mediator is related to the response variables in a model controlling for the effects of the predictor, d) predictor is related to the response variables in a model controlling for the effects of the mediator. (Baron & Kenny, 1986). The first three steps should be significant for the validation of the mediation model. If the fourth step also is significant, then there is partial mediation. If the first three steps are significant and the fourth step is not significant, then there is full mediation.

RESULTS

Univariate and bivariate data inspection

Only raw scores were used in the statistical analyses. Investigation of the missing value analyses resulted in two missing data in parent education and social networks and one missing data in the child's academic performance. Missing values were substituted by the mean of the relevant variable. Two outliers on parental involvement and one outlier on child's social networks were inspected. The outliers were winsorized. The normality of the distribution of the data was checked for all the variables. The distribution of the data is defined as normal if the standardized skewness and kurtosis values are between the values of -3 and +3. All the variables used in this study were approximately normally distributed. Descriptive statistics (means, standard deviations, standardized skewness, standardized kurtosis, minimum and maximum values) for demographic variables are presented in Table 1.

Table 1

Mean, standard deviation, standardized skewness, standardized kurtosis, minimum and maximum values for the key variables (N = 45)

	Min.	Max	M	SD	S. Skewness	S. Kurtosis
Parental Education Level	1	6	3.84	1.14	0.28	-0.001
Parental Involvement	13	25	20.96	3.25	-2.58	0.7
Academic Work Habits	10	25	18.68	3.73	0.2	-0.69
Social Networks	8	16	13.21	2.18	-2.31	0.41

Note. S = Standardized

Pearson product moment correlation was computed to investigate if there was a statistically significant association between parental education level and child's academic achievement. A positive association was found between these variables $r(45) = .30, p < .05$. As the parents'

education level increases, the child’s academic work habits also increases and vice versa. According to Cohen’s (1988) guideline this is a small to medium effect size. As shown in Table 2, we found no significant correlations between other variables.

Table 2

Intercorrelations among the variables used in the model (N = 45)

	1	2	3	4
1. Parental education level	1			
2. Parental involvement with the school	.11	1		
3. Academic work habits	.30*	.24	1	
4. Social networks	-.02	.14	.19	1

Note. * $p < .05$

As shown in Table 2, the nonsignificant correlations of the mediator (parental involvement with the school) with the predictor (parental education) and the outcomes indicate that the hypothesized mediation models will not be supported. Nevertheless, the regression analyses were performed to formally test the mediation models.

Mediation analyses

First mediation model: Parental education level, parental involvement and academic work habits

To test the hypothesis that the parental education level predicts academic work habits through parental involvement with the school, multiple regression analyses were conducted. Mediation analysis was done for the whole sample. The mediation model was tested by checking four criteria: i) the relation of parental education level to academic work habits (should be significant), ii) the relation of parental education level to parental involvement (should be significant), iii) the relation of parental education level to academic work habits while controlling for parental involvement with the school (should be significant) and iv) the relation of parental

involvement with the school to academic work habits while controlling for parental education level (should not be significant).

As shown in Table 3, and Fig. 1, the results did not support the mediating effect of parental involvement with the school for the relation between parental education level and the child's academic work habits. Parental education level explained almost 7% of the variance in academic work habits. According to Cohen (1988), this is a small effect. Although the first criterion was satisfied by the significant association between parental education level and the child's academic work habits and the fourth criterion showed that the relation between parental education level and academic work habits approaches significance when controlling for parental involvement, the other two criteria were not supported. Therefore, the hypothesis that the effect of parental education level on academic work habits is mediated by parental involvement with the school was rejected. The sample size in both cohorts was too small to do the mediation analysis separately.

Table 3

Multiple regression analysis summary for parental education level and parental involvement predicting academic work habits (N = 45)

	<i>B</i>	<i>SEB</i>	β	Adjusted R^2	ΔR^2
PE→AWH	0.98	0.48	.30*	0.09	0.07
PE→PI	0.3	0.43	0.11	0.01	0.01
PI→AWH (PE)	0.25	0.17	0.21	0.14	0.09
PE→AWH (PI)	0.91	0.47	.28*	0.14	0.09

Note. * $p < .05$

PE: Parental Education, AWH: Academic Work Habits, PI: Parental Involvement with the School.

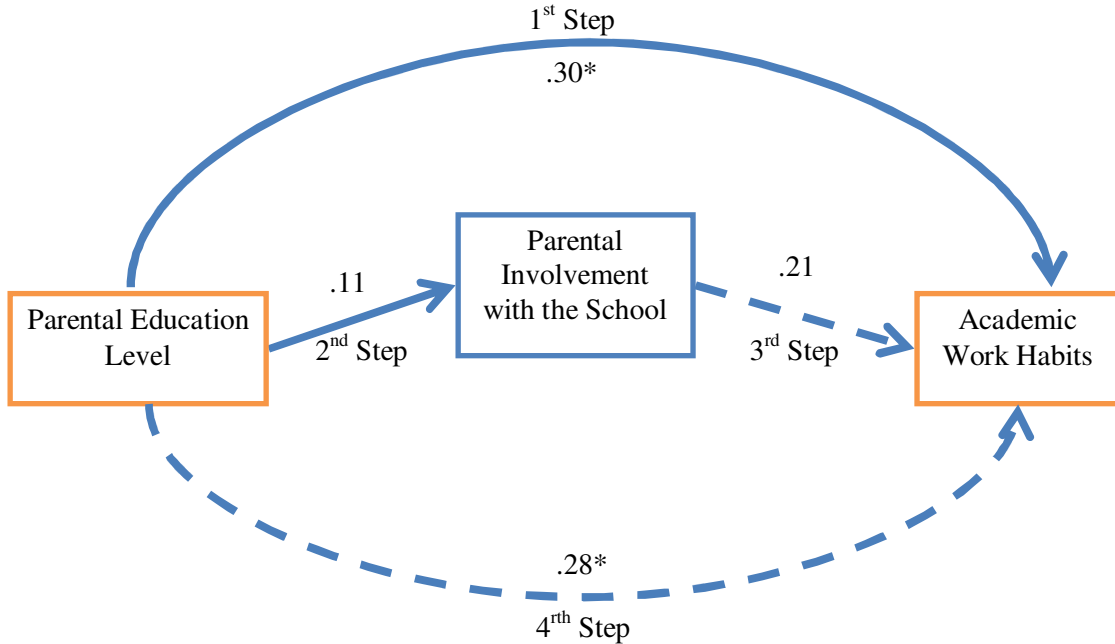


Figure 1. The β -values for the first mediation model (N=45)

Second mediation model: Parental education level, parental involvement with the school and social networks

We conducted multiple regression analysis to test the hypothesis that parental involvement with the school mediates the link between parental education level and the child's social networks. The mediation model was tested by checking four criteria: i) the relation of parental education level to social networks, ii) the relation of parental education level to parental involvement, iii) the relation of parental education level to social networks while controlling for parental involvement and iv) the relation of parental involvement to social networks while controlling for parental education level.

The results in Table 4, and Figure 2, show that none of the criteria was satisfied. Thus, there is no mediating effect of parental involvement on the association between parental education level and the child's social networks.

Table 4

Multiple regression analysis summary for parental education level and parental involvement predicting social networks (N = 45)

	<i>B</i>	<i>SEB</i>	β	Adjusted R^2	ΔR^2
PE→SN	-0.04	0.29	-0.02	0.00	0.02
PE→PI	0.3	0.43	0.11	0.01	0.01
PI→SN (PE)	0.1	0.1	0.15	0.02	0.03
PE→SN (PI)	-0.07	0.29	-0.04	0.02	0.03

Note. PE: Parental Education Level, SN: Social Networks, PI: Parental Involvement with the School.

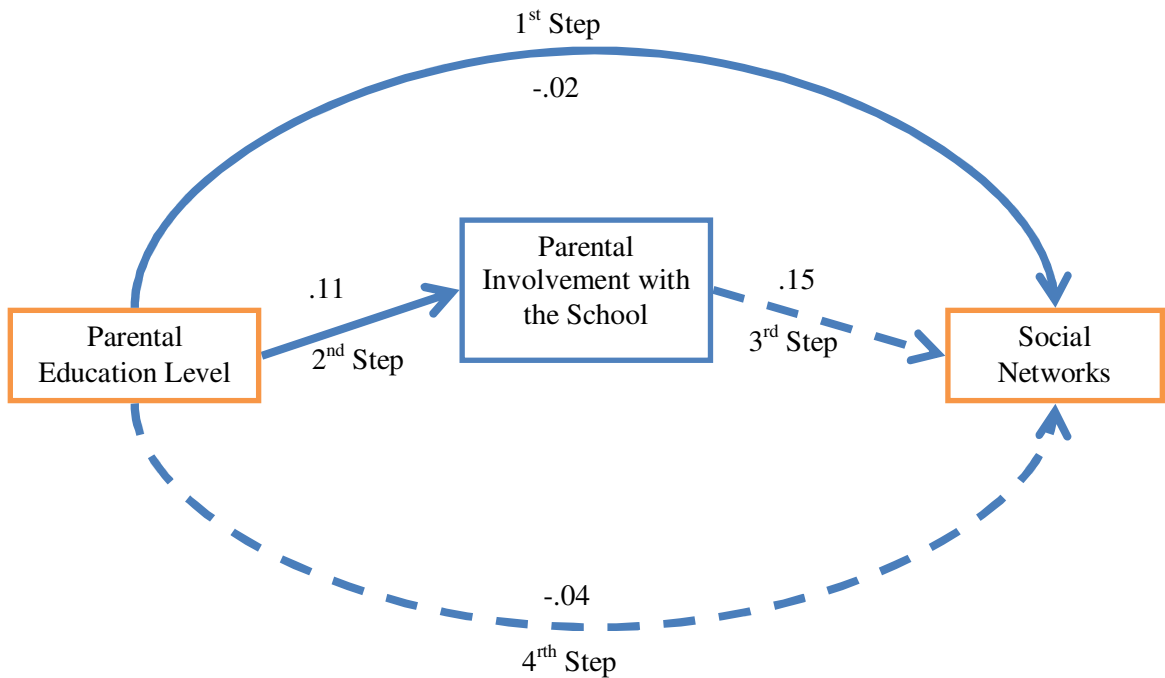


Figure 2. The β -values for the second mediation model (N=45)

DISCUSSION

In the present study we examined the hypothesis for a possible mediation of parental involvement with the school in the relation of parental education level and two child outcomes: academic work habits and social networks at school in 45 children of second generation mothers of Turkish origin, living in the Netherlands. Multiple regression analyses did not support the two proposed hypotheses. Parental involvement with the school did not mediate the associations of parental education with academic work habits, or with social networks as opposed to previous literature which shows that parental involvement was found to be associated with academic work habits (Stevenson & Baker, 1987) and social networks (Simons-Morton & Crump, 2003).

First, parental education level significantly predicted academic work habits whereas it did not predict the child's social networks at school. The prediction of the child's academic work habits by parental education level seems to be supported by previous findings (Dempsey, 1995; Lawson, 2003; Magnuson et al., 2009; Powell et al., 2010; Stevenson & Baker, 1986; White, 1982). Accordingly, children of parents with a higher education level have better work abilities such as using course material and time in a wise, careful and organized manner compared to those of parents with a lower education level. This seems to be consistent with the family investment model, which indicates that parents with a higher SES (e.g., income, education and occupation) are more interested and invest more financial, social and human capital in the children's healthy development compared to those with a lower SES. As a result of these three investments the child may be better equipped with the necessary skills and work habits needed to succeed in school. Another possible explanation is that some parents with a high education level have high IQ. Parents with high IQ have children with high IQ, i.e. smart parents have smarter children because traits of IQ are transferable among generations (Erlenmeyer-Kimling, L., & Jarvik, L. F., 1963; Scarr-Salapatek, 1971; Van IJzendoorn et al., 2005). Children's IQ has also been directly associated with parental education level. (Honzik, 1957). Children with a lower IQ would perform worse at school, have a lower self esteem and more frustration with the school (Goodman et al., 1995) and they would find it more difficult to develop academic work habits when compared to children with a higher IQ.

Second, the present results showed no significant association between parental education and parental involvement with the school. On the one hand, this seems not to be in line with previous findings that parents with higher education level are more involved and enthusiastic with their children's learning performance than parents with lower education level, which in turn

affects their children's academic outcomes in a positive way (Stevenson & Baker, 1987). On the other hand, some studies failed to find a significant relation between parental education level and parental involvement with the school (Waanders et al., 2007). The authors explain this by suggesting that types of involvement initiated by the school may be less variable and less sensitive to differences in parents' personal characteristics. Parental involvement with the school is a human capital investment and the parents in our sample may be investing more in financial and social capital and this may include activities that are based on decisions made exclusively by parents.

Third, we did not find a significant relation between parental involvement with the school and academic work habits, which is also inconsistent with the literature. Parental involvement has been proven to be related with positive child outcomes such as academic achievement, lower dropout rates, less behavior and learning problems, positive attitude towards school and social competence. (Bogenschneider, 1997; Christenson et al., 1992; Kohl et al., 2000; Steinberg & Brown, 1989; Steinberg et al., 1992; Zellman & Waterman, 1998). Further, some studies show that improvement in student attitude, increased attendance, fewer discipline problems and higher aspirations have been associated with parental involvement (Walker et al., 2004). Many previous studies have measured academic outcomes rather than work habits. Also, academic work habits may be more strongly associated with parental involvement at home than with parental involvement at school. Components of academic work habits that we have measured such as completing work promptly and keeping materials organized may be strongly dependent on parental help at home. There is an earlier study (Sammons & West, 1997) in which the use of parental help in the classroom was found to be negatively correlated with academic performance. The authors in this work offer an explanation by stating that parents may not be trained to teach or offer help in a certain course. Another reason for failing to find an association among the two variables can be that some of the parents may be involved with the school in the form of intervention in case the children are scoring low in academic outcomes.

We found no association of parental education level with social networks. One reason for this can be that this variable as measured by teacher questionnaire can be hard to quantify. It may be difficult for the teacher to evaluate the degree of how well a child gets along with a friend especially when social values of the teacher and the child are different. We also found no association of parental involvement with the school with social networks. These results are the opposite of what we hypothesized based on social control mechanism. It may be that other parental characteristics may be responsible for the social networks, or parental involvement with the school for some of the parents may even be negatively correlated with child outcomes when

the involvement is of the form of intervention in a crisis. Another variable affecting social networks may be the quality of attachment. Sometimes, parents who are highly motivated to assist their children, may inadvertently reinforce noncoping and avoidance behavior (King et al., 1997). Children's interactions with their parents in early childhood influence not only the quality but also the quantity of children's friendships (Grosman & Grosman, 1991; Elicker et al., 1992). From the perspective of Attachment Theory, the interactions of children with their parents or their primary caregivers also serve as a reference for future relations that the children will create (Bowlby, 1979) and these would include the relations with the teachers and their friends at school. Next in line after the parents, are the teachers. They, as secondary caregivers, will also affect the latter relationships that children will establish. According to social control mechanism, through which parental involvement with the school affects the social networks, parents and educational institutions create a set of rules and values, which would constrict the behavior of children in a positive way. This set of values also affects the way that children make friends, the way they interact with them and their social networks. A healthy interaction among parents and teachers would result in a consensus about values and expectations. After such a consensus, children would behave in a similar way both at home and at school and this may enhance social competence as well. This consensus is very important especially for minority children. Once established, the positive relation of the children with their teacher is associated with peer play, prosocial behavior and higher perceived peer acceptance (Howes et al., 1994).

Limitations

In this study we can mention a few limitations. First of all, we had a small sample size. Second, the participation of the families and their children in the study was dependent on parental consents. It may be that the parents who agreed to participate had a more positive view toward education and may be more familiar and more involved with educational institutions. This can also be seen from the distribution of the parental involvement variable. The distribution is negatively skewed, which means that there is a large number of parents that have a high score in involvement. As such, we can say that since our sample is more involved in education than the whole population we cannot generalize our results. Third, we did not control our data for background characteristics of the teachers and the nature of the schools. Characteristics such as years of experience and methodology of teaching may affect the ratings of the students. Controlling for children's skills and SES, teachers rated children as less competent (in literacy skills and math) when they perceived value differences with parents. These patterns have been found to be stronger for teachers who exhibited curriculum-centered, rather than student-centered

practices (Hauser-Cram et al., 2003). The diminished ratings were evident even when children's actual academic skills and SES were controlled. A better analysis could be one where we control for the nature of the school. Muller (1995) has controlled for the nature of the schools based on the fact that parents in catholic schools are more involved. Fourth, we do not have a control sample of native Dutch children to control for the potential impact of the ethnicity on the hypothesized mediation models. While academic work habits may be a function of the student himself, the social networks may depend on ethnicity because children may feel more inclined of making friends among a group that shares similar cultural background.

Conclusions

Despite the unsupported mediation models, this study has some implications in light of literature. Parental involvement with the school has been found to be related neither with parental education level nor with the child's academic and social outcomes in this study. However, the literature provides a body of research that parental involvement with the school has been found to narrow the achievement gap between ethnic minority children and natives (Jeynes, 2003; Wong & Hughes, 2006).

Our results can be a consequence of dealing with a small sample and of the used measurement techniques. While parental involvement with the school is inherently characterized by a parent-teacher interaction it is worth noticing that certain barriers may emerge depending on differences between the two and among these we can mention socio-educational values and language (McWayne et al., 2008). Differences in cultural and social values between parents and school result not only in loss of communication but they also result in different expectations and evaluations by the teachers (Waanders et al., 2007). Teachers tend to rate the children as being less successful academically or have low expectations when their education-related values are different from the children's parents' values (Hauser-Cram et al., 2003).

In this study also, the evaluation of the teachers for the academic work habits of the children of second generation Turkish mothers, and for the parental involvement with the school (the assumed mediator) may have been affected as a result of different (social) values among teachers and parents. In this perspective not only the school should understand the parents but also the parents should be able to understand the school's goals and expectations. As long as the parents' involvement choices and activities are consistent with the school's expectations, their involvement will have significant chances of influencing child outcomes in positive ways. Therefore the ideal case would be when the whole parent-school dyad negotiates a common set of expectations appropriate for the child, parents and the school (Dempsey, 1995).

Differences in social class between parents with lower levels of education and more formally educated school officials can result in an inequity in the distribution of power embedded in the dynamics of home-school interactions (McWayne et al., 2008). Researchers suggest that by involving parents, teachers' knowledge of their students' socio-cultural context is enhanced, thereby helping them to deliver more culturally appropriate educational services (Au, 1980).

Future research on other parental characteristics that may affect child outcomes may deepen our understanding of child's successful upbringing. A first step may be to overcome the limitations mentioned in this study. A larger sample size and more normally distributed samples (i.e. parental involvement with the school) would produce results that can be generalized. Measurement of parental involvement with the school using evaluation from the parents may be considered. More items can be added to the teacher questionnaires in order to have a better measure of child outcomes. Lastly, controlling for teacher characteristics and school nature may clear their influence on the results.

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APPENDICES

APPENDIX A

Background Information about School and Staffing Survey

Several surveys were done separately before 1987-1988. Among them were (i) Private School Survey, (ii) Public School Survey and the (iii) Teacher Demand and Shortage Survey. Later, National Center for Educational Statistics (NCES) integrated these surveys and by adding the Principal and Teacher Survey a new survey system was established. All these four surveys made up this new system that was called School and Staffing Survey (SASS). The main objective of this integrated system of surveys, SASS, is to provide periodic, timely data on public and private elementary and secondary schools in the United States.

Modifications were applied to SASS in 1991, 1993, 1999 and 2003. One of the main modifications was the addition of another major survey and making a total of five; that of **School Programs and Policies** in 1991. Later addition and adjustment of content to these five major surveys were conducted and these changes were based on different aspects such as further inclusion, technology development and parallel issues that go along with education. (These are completely my words; I think I could categorize the changes in this way) Based on the first aspect changes were reflected in the inclusion of Indian schools among public schools, in the reconsideration of standards for homeschooled children and addition of charter schools to the sample. Changes based on technology developments were the additions of library media center survey, library media specialist/librarian survey and availability and use of computers and internet survey. Changes based on the last aspect were the additions of content about institutional support for information literacy, parental involvement, teachers' career paths and school safety.

Later, when SASS was extended to 5 surveys a quality analysis was first prepared on July 1994. (<http://nces.ed.gov/pubs94/94340.pdf>) This work presents and summarizes information about the quality of data collected from SASS. As NCES frequently states that their main objective is to provide high quality data to US Department of Education, the Congress and other governmental agencies the importance of quality analysis work cannot be overstated. The first quality analysis helped to improve quality of the data further in the future by suggesting and making changes in the design, procedures and instrumentations used for SASS surveys. Sources of error were discussed and some of them were: coverage error, non-response error, measurement error, sampling error. A second quality analysis report was prepared on 2000. This second version updated the information that was on the first one (the one of July 1994) and analyzed the quality of the data that were collected after the first report.