Childcare and school readiness of children in selected disadvantaged areas in the Philippines

by

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Introduction

School readiness has been shown to be important for children to survive and be more productive later in life. Studies for example, have shown that school readiness is associated with academic success in early school years (Kagan 1992) which in turn has been associated with success in older ages (Sanford, Offord, McLeod, Boyle, Byrne and Hall, 1994). In contrast, the lack of readiness may lead to increased risk of problems in early school years, which may persist even till adulthood (Kupersmidt, et al, 1990).

Studies on the factors associated with school readiness have been varied. Low birth weight, nutrition, and health have been shown to be associated with learning difficulty (Doherty, 1997). Apart from these, parents also play a crucial role in the development of children. While most studies in the Western world have shown the importance of paternal and maternal factors on the school readiness and health of children (Reyes et al., 2004, Wamami et al, 2004) there is very limited information on countries from the developing world, much more so in poor areas where the environment may be different.

Apart from the home environment, attendances to preschool or daycare centers also play a crucial role in the development of school readiness. High quality and adequate preschool opportunities prepared children for formal schooling and enabled them to perform better in a range of achievement tests (Nash, 1997). Similarly, local studies in the Philippines have also shown that children who had previous early childhood education experience fared better (Save the Children, nd). Children from urban areas, who were living in non-marginalized areas, with access to learning materials and exposed to better opportunities were more ready for formal schooling (Save the Children, nd). Although these studies have shown the importance of childcare, other studies (e.g. Crosnoe, 2007) revealed that family background was a more important factor associated with school readiness.

This study takes into consideration the underlying conceptual framework of early childcare and development concepts where development of children is influenced with their interaction with the environment. In line with Bronfenbrenner's ecological model (1979), we examined the environment where the child's learning and development occurs. These include the child's own attributes, her/his family, and her/his community.

Major Objective
The major objective of this study was to determine the influence of formal childcare (early child education) and parental childcare on the school readiness of children in disadvantaged areas in the Philippines.

Methodology

Data
This study focused on a sample of 1,067 pre-school children who were not yet enrolled in formal school. The sample included five to six year old children living in the barangays (villages) where the Early Childhood Development Project (i.e Western and Central Visayas) was introduced. These barangays were those identified to be at risk and in need[1] by the Philippine government's Department

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[1] Those in need include populations with children aged d 0-5 who are at risk of dying or populations with children 6-12 years old who have dropped out of elementary school or who are underweight (less than 75% of the standard). Those at risk

of Social Welfare and Development (Council for the Welfare of Children, 1999). Thus, the sample children from these *barangays* provide a different insight into the school readiness of children living in a disadvantaged setting.

Variables

Outcome Variable: Whether the child was ready or not for Grade 1

The major outcome variable of this study was whether the child was ready or not for Grade 1. The child's readiness was based on whether a child's overall assessment score was above or below a cut-off score, which was based on the normed overall assessment scores. The overall assessment score was drawn from an assessment tool used by the Department of Education for the main purpose of knowing whether preschool children are prepared to pursue formal education. The 2005 round of the ECD survey was the first time the school readiness assessment was administered to children who were at least five years old and who were not yet enrolled in formal schooling (Grade 1). Children were administered a set of assessment forms that measured the different skills including cognitive, receptive, gross motor, fine motor skills as well as socio-emotional development. School readiness in this study referred to the achievement of solidly based abilities anchored on age appropriate development milestones that indicate preparedness to fulfill grade 1 Philippine Elementary Learning Competencies and manage the demands of the learning environment.

Exposure Variables: Parental childcare and Formal Childcare

- In this study, we measured parental childcare by the number of hours each parent (mother, father) spent with the child in certain activities like reading, telling stories, exchanging stories, playing, taking the child to daycare or preschool and taking the child outdoors for walks. Also included, as parental care, were the mother's style of discipline in instances the child misbehaves and how the mother responded to a child's good behavior.

- Formal childcare was measured whether the child attended preschool or daycare

Covariates: Individual, household and community attributes

- We also considered other individual, household and community attributes that may influence a child's development. These included the following individual, household and community factors:

  Individual level attributes:
  - The child's characteristics included age, sex, health status (whether she/he had worms, anemic or healthy/normal), nutritional status (whether she/he was stunted or not) and whether the child was exposed to television programs.
  - Parental characteristics included father's age, education and mother's age and education.

  Household level attributes included the following: sibling size, presence of other relatives in household, presence of electricity in the household, house and land ownership.

  Community Level attributes referred to whether the community was classified as urban or rural, and access to public daycare facilities or private daycare facilities

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include populations with children aged 0-5 who are living in households with limited information, in households with low income per capita income or in a community with limited social services (Council for the Welfare of Children, 1999).

Tools for Analysis

Several statistical techniques were used in the analysis. Measures of central tendency and cross tabulations were used to explore the characteristics of the sample children, their attendance to day care or preschool, their parents' interactions with them which all measured childcare in both formal and home settings. Logistic regression models were carried out to determine the effects of the exposure on the outcome variable and of the other covariates and determine which of these childcare variables, individual; household and community variables would be significantly associated with school readiness considering them altogether. STATA Statistical Software was used to carry out the statistical analyses.

Results

Findings shown in Table 1 revealed that majority of the children were ready to enter formal schooling and about seven of every ten of them attended preschool or day care.

Data on parental care revealed that only a third of the children were not punished but were engaged in discussions by their mothers while the others were punished, threatened or deprived of something. However, in instances of good behavior, most of the mothers gave praises and hugged their children. In terms of time allocation, more mothers, being the primary caregiver of these children, spent time with their children in the different activities compared to the fathers.

The children in this study were on average more than five years old, with about equal proportions of boys and girls. A majority of the children were unhealthy, having parasites, and anemic. More than half of these children were malnourished being too short for their age.

Parents of these children were found to be in their mid and late-thirties and about the same proportion of mothers and fathers had some college education.

As expected, most of the sample children lived in a disadvantaged environment. More than two thirds of the children lived in households with no electricity but about eight of every ten of these children have been exposed to television (probably their neighbors'). Although many of their parents owned their houses only about a third owned the land where their house stood. The sample children had on average 3 to 4 siblings and only a few of them had relatives living with them.

Although only a small proportion of these children resided in urban areas, majority had access to government day care. Private day care centers, as expected, were not accessible to these children who lived in disadvantaged areas.

Initial results shown in Table 2 revealed the how parental childcare, formal childcare as well as other individual; household and community factors influence the school readiness of children. As shown in adjusted model (Model 2), formal childcare like preschool and daycare increased the odds of being ready for schooling and was more important than parental childcare. Although, fathers' time spent in playing with children was also shown to be significant, this was in the reverse direction. Other attributes like being older, being a girl and being normal (not stunted) and watching television were associated with being ready for school. Similarly, living in more advantageous households with fewer siblings and the house stands on one's own lot were associated with school readiness.

While these results revealed the influence of living in disadvantaged households, the results also underscore the importance of preschool and daycare as interventions to improve school readiness and prepare children (even those in disadvantaged households) for their future. In work underway, we are exploring how robust these results are to alternative assumptions (like childcare arrangements are treated as endogenous by using instrumental variable methods with community characteristics among the instruments) and whether they vary by gender and age.

Table 1. Characteristics of children, childcare, parental, household and community characteristics in selected disadvantaged areas in the Philippines

Characteristic	Mean	S.D	N
Children ready for schooling	0.83	0.38	1067
Formal care			
Attended preschool	0.72	0.45	1067
Parental care			
Disciplinary action for misbehavior			
Punishes, threaten and deprives child	0.70	0.46	1062
Talks to the child	0.30	0.46	1062
Response to good behaviour			
Does nothing	0.16	0.36	1065
Rewards children	0.17	0.38	1065
Praises and hugs children	0.67	0.47	1065
No of hours mother plays with child	0.82	0.81	1066
No of hours father plays with child	0.69	0.821	904
No of hours mother take to bring child to school	0.36	0.77	1067
No of hours father take to bring child to school	0.15	0.60	904
No of hours mother read stories to child	0.27	0.53	1067
No of hours father read stories to child	0.18	0.46	904
No of hours mother exchange stories with child	1.30	0.83	1067
No of hours father exchange stories with child	1.28	0.92	904
No of hours mother take child out for walks	0.73	1.08	1067
No of hours father take child out for walks	0.57	1.04	904
Co-variates			
Child attributes			
Age of child	5.80	0.50	1067
Sex of child	0.51	0.50	1067
Presence of worms	0.77	0.42	1061
Anemia status	0.79	0.41	1038
Nutritional status (stunting)	0.56	0.49	1058
Child watches television	0.84	0.37	1067
Parental characteristics			
Mother's age	35.23	6.75	1061
Father's age	38.44	7.47	1029
College educated mothers	0.13	0.33	1067
College educated fathers	0.14	0.35	1067

Table 1 continued…

Characteristic	Mean	S.D	N
Household environment			
Number of siblings	3.67	2.49	1067
Presence of household electricity	0.66	0.47	1067
Presence of relatives in household	0.18	0.39	1067
Ownership of house lot	0.36	0.48	1067
Ownership of house	0.89	0.32	1067
Community environment			
Urban residence	0.12	0.33	1067
Public day care within walking distance	0.91	0.29	1067
Private day care within walking distance	0.12	0.33	1067

Table 2. Odd ratios showing the relationship of the exposure variables and other co-variates on the school readiness of children in selected disadvantaged areas in the Philippines

Independent variables	*Unadjusted*			*Adjusted*		
	Odds Ratio	*C.I.*		*Odds Ratio*	*C.I*	
Formal childcare						
Attendance to day care /preschool	*7.08*	*5.02-9.98*	**	*2.93*	1.86-4.61	**
Parental childcare						
No of hours mother spend playing with child	0.84	0.7-1.01		1.02	0.75-1.37	
No of hours father spend playing with child	0.73	0.60-0.89	**	0.62	0.47-0.83	**
No of hours mother spend in taking child to school	2.47	1.63-3.74	**	1.27	0.82-1.98	
No of hours father spend in taking child to school	1.88	1.03-3.41	**	1.38	0.82-2.31	
No of hours mother read to child	1.09	0.80-1.48		1.12	0.69-1.57	
No of hours father read to child	0.82	0.58-1.17		0.92	0.53-1.58	
No of hours mother tell stories	0.92	0.76-1.11		1.15	0.84-1.57	
No of hours father tell stories	0.89	0.74-1.07	.	1.15	0.85-1.54	
No of hours mother take child out	0.97	0.83-1.11		1.13	0.89-1.46	
No of hours father take child out	0.93	0.80-1.07		0.82	0.64-1.04	
Talks to child for discipline	1.20	0.84-1.71		1.21	0.77-1.97	
Rewards child for good behaviour	0.93	0.62-1.41		0.54	0.26-1.12	
Praises child for good behaviour	1.10	0.94-1.31		0.71	0.39-1.27	

Table 2 Continued…

Independent variables	Model 1 (Unadjusted)			Model 2 (Adjusted)		
	Odds Ratio	C.I.		Odds Ratio	C.I	
Covariates						
Individual level						
Age of child	2.84	2.00-4.03	**	3.53	2.19-5.71	**
Sex of child (male)	0.55	0.39-0.75	**	0.59	0.38-0.91	*
Presence of worms	2.03	1.43-2.87	**	1.47	0.93-2.34	
Anemia Status	1.14	0.77-1.67		1.60	0.94-2.71	
Stunting status	2.54	1.83-3.52	**	1.57	1.02-2.41	*
Television viewing	3.05	2.11-4.42	**	1.76	1.05-2.96	*
Mother's age	0.97	0.95-1.00	*	1.01	0.96-1.07	
Father's age	0.98	0.95-1.00	*	1.00	0.96-1.05	
Mother's college education	2.85	1.46-5.54		0.96	0.37-2.41	
Father's college education	4.33	2.08-8.98		4.12	0.89-19.09	
Household level						
Number of siblings	0.81	0.76-0.86	**	0.82	0.74-0.92	**
Presence of household electricity	2.65	1.92-3.66	**	1.49	0.88-2.21	
Presence of relatives	1.52	0.96-2.39		1.23	0.66-2.28	
Land Ownership	1.72	1.20-2.45	**	1.79	1.11-2.90	*
House Ownership	0.75	0.44-1.29		0.69	0.32-1.50	
Community level						
Access to public day care	1.41	0.85-2.33		1.41	0.67-2.96	
Access to private day care	1.27	0.76-2.11		0.87	0.45-1.71	
Urban residence	1.81	1.01-3.22	*	1.37	0.63-2.98	

*significant at 95% level of confidence
** significant at 99% level of confidence*
Model 1- shows the results of the logistic regression for each variable (unadjusted)
Model 2- shows the results of the logistic regression when all factors are considered altogether (adjusted for all other factors)

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