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Child Labor and Its Effects on Schooling, Health and Recreation of Filipino Children

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Abstract

This study used a novel log linear analysis to identify the factors that enhance and hamper working children's effort to receive education, stay healthy and engage in recreational activities. The study looked at a sample of working children aged between 5 and 17 years in a nationwide study in 1995 and 2001 by the National Survey on Working Children (NSWC). It was found that the dropout rate from school decreased when the number of working hours and frequency of heavy physical work lessened. Working for a relative, and when the child is an unpaid worker did not affect their schooling as compared to children who engaged in heavy physical work. In 1995, the adverse effect on health among working children in the agricultural sector was due to heavy physical work and exposure to parasites and bacteria. In 2001, it was found that most children working in the industrial sector were affected by exposure to extreme temperatures and harmful chemicals. Long working hours meant less time for recreational activities. The identification of these specific factors are useful for policy makers in the Philippines who aim at reducing the incidence of child labor.

Keywords

Child labor; Filipino children; school attendance; health; recreation

Introduction

According to the International Labor Organization, there were 215 million child laborers in 2011. Child labor endangers the health and safety of children as well as their personal development. Additionally, it leaves them with less time for schooling and for engaging in leisure activities (Huebler, 2006). Fassa et al. (2000) found that in developing countries, children who start working at a very young age, are malnourished, unpaid, at risk from work hazards, despite the fact that they are essential for survival of their family. The Philippines is one such country where many children are engaged in the productive sector. Figures 1a, 1b, and 1c show the distribution of child labor in the Philippines by gender, age and residence based on the 1995, 2001 and 2011 survey.

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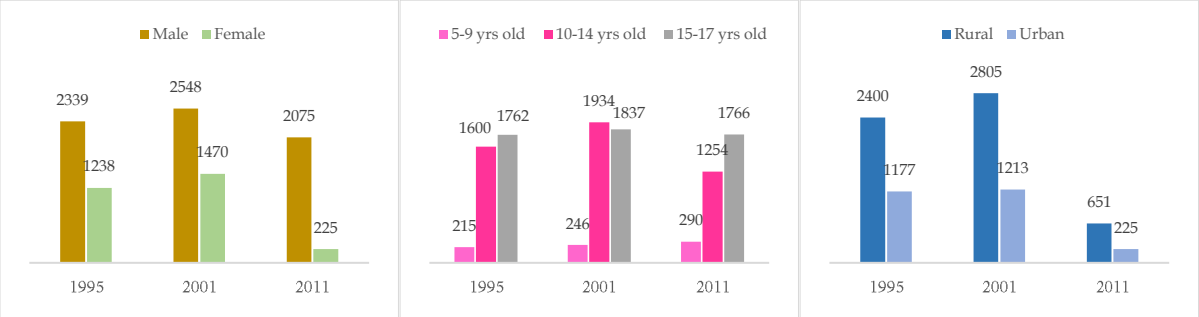
Population (thousands)



Sources: Aldaba, Lanzona, and Tamangan (2004); Philippine Statistics Authority Labor Force Survey (2011).

Figure 1: Child labor in the Philippines by gender, age and residence

As of 2011, there were a total of 2.1 million Filipino children aged between 5 and 17 years who were paid labor, constituting 2.6% of the total 26.6 million Filipino children in the same age group (PSA, 2011). The highest child labor incidence was in 2001 and the lowest in 2011. This decreasing trend of working children is positive, however, gender, age and residential (rural – urban) differences prevail, which is especially evident between 2001 and 2011. More males (difference of 2,179) were employed between 1995 and 2001 while the male outnumbered the female working children by 1,929 between 2001 and 2011. Interestingly in 2011, male child laborers had decreased by 16%. Most of the working children were those aged between 15 and 17 years in all the three periods studied: 1995, 2001 and 2011. There was an increasing trend of child labor in rural areas but there was a threefold decrease in this number between 2001 and 2011. The predominance of rural child workers may be attributed to their father's employment in agriculture or small-scale jobs in the rural areas (Camacho, 1999). In summary, the child labor trend in the Philippines showed that most of them were males and rural residents and were aged between 15 and 17 years.

The two-pronged reasons for the high incidence of child labor in the Philippines are poverty, where 26 million Filipinos are considered poor (PSA, 2016), and the rapid growth rate of the population, where the median age is 23.4 (NSO, 2012). In an economically poor country with a young population, families having many children are left to carry the burden of providing for their basic necessities since very little help can be expected from the government. The children in poor, and especially in large, families are then forced to work at a young age to supplement their families' income.

Many studies indicate that children work for a variety of reasons depending on the sub-cultural context (Khatar, Malik and Malik-Saroj, 1998; ILO, 1999; Ersado, 2005; Webbink, et al., 2012). The literature on child labor reveals at least 4 dominant perspectives related to economic and socio-cultural factors.

According to the labor market perspective, work is harmful to children because it invariably makes them vulnerable to abuses. Child labor is, therefore, a clear market violation. Maltreatment by employers coupled with poor working conditions underscore the many work-related problems of children in the labor force. The working conditions of children are especially important as these may hamper their physical and mental development. It has been shown that physical growth, for example, is affected by the nature of activity during a child's growing up years (Fassa, et al., 2000). This is especially true when children are employed in labor at an early age. According to Rosati et al. (2015), the main reasons for school dropout are disability and illness. The same study shows that 84% of child laborers are exposed to

hazardous risk, 26% work for long hours, and 16% work at night. These have an impact on the child's development as it restricts their opportunities for growth and learning. The persistence of child labor is partly attributed to its growing demand, especially in the business sector, where it is cheaper to hire children. Moreover, children are easily controlled and are not likely to form unions or go on strikes. In the third world countries, children make up most of the labor force and thus, children employed in industries are more likely to be exploited.

In developing countries, child labor is related to human capital development and poverty alleviation. The human capital perspective regards child labor as a product of under development and emphasizes that the solution for child labor is to eliminate poverty and its causes. Moreover, there is an effect of child labor on schooling as these children have restricted access to education, which in the end limits the development of their skills, attitudes and other human capital capacities. Bhalotra and Tzannatos (2003) found that in the trade-off between child labor and schooling, it is important to consider the characteristics of the household and the community as it can be a source of employment and schooling opportunities. Age and occupation of household head, employment status of parents, community infrastructure, and relationship of child to household head are the other important demographic considerations. Ersado (2005) found that poverty influenced school attendance. Access to good schools and institutional efforts to support adult wages were recommended to decrease poverty incidence. Holgado et al., (2012), on the other hand, found that nature of work, intensity of the activities, and labor work in the morning negatively affect academic performance. Children whose parents did not possess formal education were more likely to work and less likely to attend school. Household income is also strongly linked with school attendance (Huebler, 2006; Soares et al., 2012; Bornstein & Putnick, 2015; Admassie, 2003). There are, however, some important questions that arise, namely whether education and development of children should be oriented primarily towards economic goals.

The social responsibility perspective, for example, regards child labor in the context of social rather than economic development. This perspective emphasizes "social capital" more than the "human capital," which underscores the fact that the root cause of child labor is not poverty but social irresponsibility and abuse of children by adults. The solution, therefore, does not merely lie in "technological fixes" like formal education but in improving basic services such as health and non-formal education, i.e. "street education". Yildirim, Beydili, and Gorgulu (2015) showed that the conservative structure of the educational system has been the push factor for children to join the labor force. From the social work perspective, there is a greater need for awareness of the child labor problem in the country as well as for social workers to influence social policies in the country. Chakrabarty, Grot, and Luchters (2011) examined how social labelling motivates a child to attend school and how it discourages child labor. Their study determined that children who were 'retrenched' from firms due to social labelling have a higher probability of entering school than children who lost employment for other reasons. Chanda (2014) found a functional use of child labor in his qualitative study in Lusaka City in Zambia. He showed that child labor is a means for children to pay for their expenses on school materials and tuition fees. Furthermore, those working in the informal sector, with very little pay, teach children the value of money.

The "child-centered" perspective promotes children's rights, welfare and development without the direct role of adults. This perspective is aligned with the 1999 UN Convention on the Rights of the Child (CRC) which presents a compendium of diverse rights contained in about 40 articles. The objective is centered on child development rather than on child rescue. It views children as agents of their own development and facilitates social transformation of society. The narrow focus of this approach is problematic as it disregards broader social and economic problems.

These varying perspectives on child labor will be used in this study to explain the results of a survey on child labor in the Philippines.

There are very few studies that have looked at the effects of work on the health of children and their recreation activities. This study provides the specific variables that would increase and decrease the odds on the effect of child labor on three important dimensions: the children's schooling, their health and their recreation.

Methodology

Data used in this study were from the 1995 and 2001 National Survey on Working Children (NSWC). Both years yielded the highest incidences of child labor in the Philippines compared to the most recent survey in 2011 (see Figure 1). It was in this six-year period that the absolute number of child laborers grew over 12 percent. Although statistical comparison of the two data sets was not done, comparing the two can show changes over time on the effects of child labor on schooling, health and recreation of working children. The most current data on child labor was not used which is a limitation of this study.

The survey was conducted nationwide to collect data on the demographic and socio-economic characteristics of working children aged between 5 and 17 years old. The survey considered the urban/rural areas of a province or city as domain, and used a stratified two-stage design with the barangays as the primary sampling units (PLUS) and the households as the secondary sampling unit (SSUS). A household was selected with probability of selection that is inversely proportional to the barangay's size. In the 1995 survey, there were 44,738 children aged 5-17 among the 25,500 interviewed households (i.e. approximately two children aged 5-17 in every household), while 6,728 children aged 5-17 (approximately 2 out of 10 children) were found to have worked for at least one hour during the reference period of the survey (i.e. from August 1994 to July 1995 and from August 1999 to July 2001). In the 2001 survey, there were 4,018,000 children aged 5-17 who worked in the past 12 months. Of the 15,481,000 households with children 5-17 years old about 3,471,000 households had working children 5-17 years old. In 2001, the survey on Children (SOC) had adopted the new sample design of the Labor force survey (LFS). The multi stage sampling resulted in a national sample of 26,964 households and 17,454 working children 5-17 years old. The survey was conducted by the National Statistics Office (NSO) in coordination with International Labor Organization's International Programme for the Elimination of Child Labor (ILO-IPEC) in October 2001.

This study seeks to know whether children who are working face obstructions that impede their schooling and affect their well-being due to poor health and limited time for recreation. The study explores the complex interrelationships among schooling, health and recreation variables. Specifically, the objective is to determine the effects of work and work conditions on:

a. education or schooling of working children;
b. health and physical well-being;
c. recreation and leisure activities of working children.

The above variables were chosen since studies have claimed that child labor is more harmful when it occurs at a younger age since it interferes with schooling, recreation and rest. As a consequence, children's health conditions suffer. (Fassa, et al., 2000; Soares, 2012; Chanda, 2014; Holgado, et al., 2012). The effects of working status and work-related factors on schooling, health and leisure status of working children in the Philippines were studied by estimating log linear models. The log linear model is represented by a linear logistic model of the form

$$\text{logit}(\Pi_{hi}) = \alpha + X'_{hi}\beta + \varepsilon_i$$

where

Π_{hi} = the probability that an individual belongs to a control(specified) group
α = log odd for the control (specified) group
X'_{hi} = the matrix of explanatory variables
β = increments in log odds for an individual belonging having the ith explanatory variable will be fitted
ε = error vector

Multinomial logistic regression models were fitted for dependent variables with more than two categories while binary logistic models were fitted to dichotomous dependent variables. To facilitate interpretation of results, odds ratios (OR) (defined as exp {β}) were computed. A stepwise selection procedure was implemented in all logistic regression analyses. The OR and RRR or Relative Risk Ratio are both measures of the relative effect or the outcome of one group relative to the other variables. Basically, the odds ratio pertains to the ratio of two odds while the ratio of two probabilities is known as the relative risk ratio. The values of the odds are an indicator of the change in odds resulting from a unit change in the predictor. The relative risk ratio, on the other hand, can be described as the measure of association between child labor and a particular factor (i.e. schooling) and the risk of a certain outcome. For both measures, a value of 1 indicates that the estimated effects are the same for both interventions.

In 1995 and 2001, four response variables that characterize the education status of working children were modeled: present school attendance, dropping out of school, reasons for dropping, and difficulties encountered in school. For present school attendance, a child was asked if she is currently attending school. Independent variables included work characteristics such as whether or not the nature of employment is casual/short-term, the number of working hours per week, the number of working days per week, the number of working hours per week where one unit equals 10 hours, and whether or not the child was supervised by an adult relative. Casual/short term employment includes short term/casual labor, seasonal/school vacation labor and day-to-day/week-to-week labor as opposed to permanent employment.

The variable "Normal working hours" indicates whether normal working according to the Labor Code of the Philippines were followed (normal working hours mean "8 hours a day, 6 days a week").

In order to determine the underlying factors of school drop outs, the reason for dropping was modeled in 5 categories. The five categories of the dependent variable are as follows: (i) did not drop, (the base category), (ii) dropped in order to work, (iii) dropped due to financial difficulties, (iv) due to physical illness and (v) dropped for other reasons. The reasons for dropping out of school were also modeled using work related characteristics.

The difficulty encountered on schooling are poor academic performance, irregularities in school attendance and other difficulties. Poor academic performance is defined as low grade and difficulty in catching up with school lessons. Meanwhile, irregularities in school attendance includes absenteeism/ tardiness due to the distance of school from child's residence.

There are three response variables that characterize the health status of working children. These are injury and illness experience at work, injuries suffered from work and illnesses suffered from work. Results are from both 1995 and 2001 data. The health status of working children was determined through three questions that were asked: (i) did you experience injury or illness at work? (ii) did you suffer injury? (iii) did you suffer from illness at work?

The major sectors where child work took place in both 1995 and 2001 were as follows: agriculture, industry and services. There are some aspects of work that are risky such as being prone to vehicular accident, burning, falling, loss of sight, loss of hearing, physical mutilation or diseases and other dangers, all of which were included as independent variables. Furthermore, hazardous conditions are classified as physical (exposure to noise extreme temperature or humidity, and exposure to radiation and ultra violet rays), chemical (dust, harmful liquids, mist and fumes) and biological (exposure to virus, bacteria, fungus and parasites).

For injuries experienced at work, the children were asked whether or not they had suffered injury at work, such as contusions, burns, cuts, wounds/punctures, loss of body parts, crushing injuries, dislocations, fractures or sprains.

Two response variables characterize the recreation of working children. These are (i) the presence of free time or days-off and (ii) whether recreational and/or rest activities were pursued during free time. The activities they engage in during free time were modelled on selected work characteristics using rest or sleep or no activity as base reference.

Results

Table 1 shows the log linear analysis results for school attendance, school dropping, reasons for dropping and difficulties encountered in 1995 and 2001.

Present School Attendance

In 1995, the factors that were found significantly affecting a child's present school attendance at the 5% error level were as follows: casual nature of employment, number of days work in a week, hours work in a week, adult relative supervising the work of the child, frequency of being exhausted from work and frequency of heavy physical work. It was found that the log odds of finding a child laborer who is attending school increases by 0.57 when the nature of employment is casual/short term or less permanent. The odds ratio of 1.75, indicates that as the nature of employment becomes less permanent, the odds of school attendance increases by 75%. As expected, number of days work and length of hours working has a negative effect on school attendance. The log odds of school attendance decreases by 0.16 and 0.67 when there is an increase in one day and when hours increase by one level respectively. The odds of school attendance are decreased by 50% when work is increased by 10 hours in a week where 1 scale in hours of work equals to 10 hours. Another interesting factor that affects the schooling of the child worker is the relationship of the child with the adult supervisor. When supervisor of the child is not a relative, the logs odds of school attendance decreases by 0.38. This indicates the importance of the child working with a relative which mitigates problems in the child's schooling. Moreover, when the working child comes home from work less exhausted the logs odds of school attendance increases by 0.45. Also, an increase in the long odds probability of 0.30 when the child is doing less heavy physical work. Thus, the odds of school attendance increases by 35% when the child sometimes do heavy physical work as against a child who always have to do heavy physical work.

It is interesting to note that in 2001, the casual nature of employment, working days per week, normal working hours per week and doing heavy physical work also affect school attendance. These factors have the same effect on the child's school attendance similar to the 1995 data on working children. Other factors found to significantly affect schooling for the 2001 child workers were activity during free time, and status of employment. The odds of schooling for a child who needs to sleep and rest during free time is one-fifth (≅21%) compared with the

working child who needs to rest only. The odds of school attendance for a paid worker is almost one-third (≅0.32) that of a non-paid worker. The children in 2001 showed that those who do not engage in heavy physical work has 171% more chance of attending school than those doing heavy physical work.

Dropping out of School

In the 1995 data, the explanatory variables that were found significant were occupation, status of employment, casual nature of employment, number of working hours in a week, normal working hours per day, adult relative supervising the work and frequency of doing physical work.

Children working in the agricultural sector increased their odds by 0.77 in dropping out from school as compared to non-agricultural workers or 117% higher than non-agricultural workers. The status of employment indicates that paid worker increase their odds of dropping out by 63%. On the other hand, as their work becomes less permanent, the log odds of school dropping decreased by 0.30. Further, longer hours of work in a week and more than normal working hours per day increases the log odds of dropping out by 0.35 and 0.22 respectively. This would indicate that each one working day increase per week, increases the odds of dropping out of school by 43% while one level increase in working hours will increase the odds of school drop out by 25%. Again, the role of adult person supervising the child becomes important. The farther away the relationship of the child with his adult supervisor, the odds of dropping out is increased by 21%. Furthermore, as the frequency of doing heavy physical work becomes less, the chance of school dropout rate decreases.

For the 2001 working children, dropping out is related to the same factors found among the 1995 working children. As the number of working days and hours per week, increased, the odds of dropping out from school also increased. The relationship of the adult to the child worker is an important factor for leaving school. The probability that the child would drop out from school increases by 0.24 when the child's supervisor is not a relative. The impact of heavy physical work is greater in among the 2001 working children than in 1995, log odds of school dropout decreased by 0.84 as the child's work becomes less heavy as compared to a decreased of 0.28 in 1995 working children.

Reasons for dropping

Among the working children in 1995, the factors that significantly affected work-related reasons for dropping, at the 5% error level, were hours of work and frequency of heavy physical work. The variable hours of work was not found to be significant for physical illness-related reasons for dropping out as well as engaging in heavy physical work. Based on the Relative Risk Ratio (RRR), when hours of work is increased by one hour, there is a 69% increased risk of finding a school dropout. When the level of heavy physical work changes from always to sometimes, the risk of finding a drop out in order to work is decreased by 38% (1-0.62). The chance of dropping out due to financial difficulties increases as the hours of work 65%). Also, the probability of dropping out decreases by 35% when the frequency of doing heavy physical work becomes irregular. No work-related factors were found to have significant effect on dropping out due to physical illness. At 5% error level, only weekly hours of work significantly affect risk of school dropout due to other reasons.

For 2001, the results of working children is the same as the children working in 1995 except that the decrease in the probability of drop out, due to work when heavy physical work is reduced is higher (62%) among children in 2001 than in the 1995 working children. Dropping out as a result of physical illness was also not related to any of the variables tested. The other

reasons for dropping out have an effect on the number of hours work per week and frequency of heavy physical work. The risk of dropping out due to other reasons for children who do less frequent heavy physical work is half (≅0.52) the risk of children who always does heavy physical work. An increase of 10 hours of work a week will increase the risk of dropping out due to "other reasons" by 86%.

Difficulties encountered in school

In the 1995 survey working children, two variables were consistently found to be related to school performance and irregularities of school attendance: place of work and frequency of doing heavy physical work. Children working in an office or factory (place of work) face poor academic performance (log odds=0.78) and irregularities in terms of school attendance (log odds=0.92). Engaging in menial jobs rather than heavy physical work improves academic performance of children partly because attendance in school becomes more regular. The 2001 survey working children, on the other hand, found some aspects of their work which significantly contributed to poor academic performance. The risk of poor academic performance increases by 288% for those who are engaged in risky works. Also, risk experienced at work increases the chance of other difficulties encountered at school by nearly 200%.

Table 1: Odds Ratio and Relative Risk Ratio of Child labor and Schooling, 1995
n=22,386,517; 2001 n= 24,850,943

1995	Coefficient	OR/RRR	T
1. Present school attendance (Yes=1)			
Casual/short term nature of employment (Yes=1)	0.57	1.75	6.17
Number of working days per week	-0.16	0.85	-5.31
Number of working hours per week	-0.67	0.51	-13.23
Adult relative supervised (Yes=1)	-0.38	0.68	-7.89
Exhausted from work (Yes=1)	0.45	1.57	4.48
Do heavy physical work (Yes=1)	0.30	1.35	2.70
2. School dropping (Yes=1)			
Agricultural worker (Yes=1)	0.77	2.17	6.09
Paid work (Yes=1)	0.49	1.63	3.26
Casual/short-term nature of employment (Yes=1)	-0.30	0.74	-4.31
Number of working hours per week	0.35	1.43	8.42
Normal working hours (Yes=1)	0.22	1.25	2.85
Adult relative supervised (Yes=1)	0.19	1.21	3.69
Do heavy physical work (Yes=1)	-0.28	0.76	-3.22
3. Reason for dropping			
Work-related (Yes=1)			
Number of working hours per week	0.53	1.69	11.38
Do heavy physical work (Yes=1)	-0.47	0.62	-4.65
Economic-related (Yes=1)			
Number of working hours per week	0.50	1.65	14.21
Do heavy physical work (Yes=1)	-0.44	0.65	-4.98
Health-related (Yes=1)			
Number of working hours per week	0.01	1.01	0.15 ns
Do heavy physical work (Yes=1)	-0.37	0.69	-1.78 ns
Other reasons (Yes=1)			
Number of working hours per week	0.17	1.18	2.11
Do heavy physical work (Yes=1)	-0.09	0.91	-0.46 ns
base category = Did not drop in school			
4. Difficulties encountered on schooling			
Poor academic performance (Yes=1)			
Work outside home (Yes=1)	0.78	2.18	4.28
Do heavy physical work (Yes=1)	-0.62	0.54	-6.05
Irregularities on school attendance (Yes=1)			

1995	Coefficient	OR/RRR	T
Work outside home (Yes=1)	0.92	2.50	3.88
Do heavy physical work (Yes=1)	-0.39	0.68	-3.31
Other difficulties (Yes=1)			
Work outside home (Yes=1)	-0.19	0.82	-0.92 ns
Do heavy physical work (Yes=1)	0.02	1.02	0.11 ns

2001	Coefficient	OR/RRR	T
1. Present school attendance (Yes=1)			
Casual/short-term nature of employment (Yes=1)	0.40	1.48	3.74
Paid employment (Yes=1)	-1.12	0.32	-4.12
Number of working days per week	-0.35	0.71	-5.51
Do heavy physical work (Yes=1)	0.91	2.71	4.90
Activity during free time (Yes=1)	-1.58	0.21	-2.98
Normal working hours per week (Yes=1)	-0.72	0.48	-5.89
2. School dropping l (Yes=1)			
Number of working days per week	0.24	1.24	4.21
Normal working hours per week (Yes=1)	0.48	1.61	3.09
Adult relative supervised (Yes=1)	0.24	1.29	2.96
Do heavy physical work (Yes=1)	-0.84	0.42	-6.24
3. Reason for dropping			
Work-related (Yes=1)			
Normal working hours per week (Yes=1)	0.70	2.31	6.13
Do heavy physical work (Yes=1)	-0.76	0.38	-3.73
Economic related (Yes=1)			
Normal working hours per week (Yes=1)	0.36	1.73	3.94
Do heavy physical work (Yes=1)	-1.04	0.33	-6.41
Health-related (Yes=1)			
Normal working hours per week (Yes=1)	0.32	1.46	0.78 ns
Do heavy physical work (Yes=1)	-0.03	0.69	-0.66 ns
Other reasons (Yes=1)			
Normal working hours per week (Yes=1)	0.63	1.86	2.46
Do heavy physical work (Yes=1)	-0.64	0.52	-2.60
Base category = Did not drop in school			
4. Difficulties encountered during schooling			
Poor academic performance (Yes=1)			
Some aspects of work are risky (Yes=1)	1.45	3.88	2.51
Irregularities on school attendance (Yes=1)			
Some aspects of work are risky (Yes=1)	0.91	2.69	1.79 ns
Other difficulties (Yes=1)			
Some aspects of work are risky (Yes=1)	0.875	2.98	4.45
Base category = None			

Note: OR, Odds Ratio - binomial dependent variable
RRR, Relative Risk Ratio - multinomial dependent variable

Effects of Children' Work on Health 1995 and 2001

Table 2 shows the results of the effects of work on children's health which include injury and illness experienced at work, injury and illness suffered at work.

Injury and illness experienced at work

The 1995 survey of working children show who are classified in the services industry, are less prone to injury or illness work. The odds of experiencing injury for children who work in service type of industry is lower by 42%. In like manner, those who do not engage in heavy physical work have lowered their risk of experiencing injury by 38%. It was also found that when some aspects of work involved exposure to high temperature and parasitic diseases as

well as working without face shield, the working children are 300% more at risk of experiencing injury and illness.

The 2001 survey working children who work in industry or in non-agricultural industries such as in trade, construction and communication show a higher probability of experiencing injury and illness. This finding is in contrast with the findings of the 1995 survey. However, similar to the findings in the 1995 survey working children, it was found that work that involves risk, the odds for having injury and illness is high (254%). This study emphasizes that various risks affect the health of the working children.

Injury and illness Suffered at Work

The 1995 survey shows working children suffer from injuring related to working in the agricultural sector. They are also 100% more odds for suffering injuries due to heavy physical work and also for contracting parasites and bacteria. In contrast, the sources of injury in 2001 for working children are from industries that are non- agricultural. Physical hazards (noise, extreme temperature and air pressure) and to biological hazards (bacterial infection) are contributing factors to injuries experienced by the 2001 working children. In 2001, the risks of suffering injury at work is more than 100% higher among working children who are in industry

Illness is another debilitating factor for children who are working. They were asked whether or not they had suffered illness while working, and if they did, they were urged to identify the type of illness they suffered. There were however, no significant results on the type of illness they suffered.

The non-agricultural workers in the 1995 survey showed that most children, commonly fall ill. However, the more they sleep and rest (activity during free time) the less they become ill. Moreover, the less they become exhausted from work the less likely they suffer from illness. There was 100% risk for children to suffer from illness when they do not use gloves and when exposed to extreme temperature, radiation, bacteria and parasites. The illnesses of children in 2001 were fewer and are limited only to body aches and pains. Working children in the industry such as working in trade, manufacturing, and construction are likely to get ill.

Table 2: Odds Ratio and Relative Risk Ratio of Child labor and Health, 1995 n=22,386,517; 2001 n= 24,850,943

1995	Coefficient	OR/RRR	T
1. Injury/illness experienced at work (yes=1)			
Service sector (Yes=1)	-0.54	0.58	-5.52
Do heavy physical work (Yes=1)	-0.48	0.62	-6.87
Some aspects of work are risky (Yes=1)	0.84	2.31	8.30
Other *safety gadgets* (Yes=1)	0.73	2.06	3.99
Temperature *(phys. hazard)* (Yes=1)	0.43	1.53	3.47
Face shield *(safety gadget)* (Yes=1)	1.36	3.90	4.09
Parasite *(bio. hazard)* (Yes=1)	0.84	2.32	4.83
2 injuries. Suffered (yes=1)			
Farming and fishing sector	0.76	2.14	6.44
Do heavy physical work (Yes=1)	-0.42	0.66	-5.31
Some aspects of work are risky (Yes=1)	0.92	2.52	8.92
No used *of safety gadget* (Yes=1)	-0.64	0.52	-4.86
Parasite *(bio. Hazard)* (Yes=1)	0.75	2.11	3.91
Bacterial *(bio. Hazard)* (Yes=1)	0.52	1.68	2.91
3. Illness suffered *(yes=1)*			
Service sector	-0.56	0.57	-4.65
Activity during free time (Yes=1)	0.39	1.48	3.33
Exhausted from work (Yes=1)	-0.52	0.60	-5.53

1995	Coefficient	OR/RRR	T
Some aspects of work are risky (Yes=1)	0.84	2.31	6.58
Gloves *(safety gadget)* (Yes=1)	0.72	2.05	3.25
Temperature *(phys. hazard)* (Yes=1)	0.62	1.86	4.82
Radiate *(phys. Hazard)* (Yes=1)	0.69	1.99	3.09
Bacterial *(bio. Hazard)* (Yes=1)	0.71	2.03	4.12
Parasite *(bio. Hazard)* (Yes=1)	0.82	2.27	4.52

2001	Coefficient	OR/RRR	T
1. Injury/illness experienced at work (yes=1)			
Industry sector (Yes=1)	1.34	3.10	7.30
Some aspects of work are risky (Yes=1)	0.94	3.54	6.87
2 Injuries. Suffered (yes=1)			
Industry sector (Yes=1)	1.02	2.78	7.02
Other Physical Hazards (Yes=1)	0.62	1.86	3.34
Bacteria *(bio. Hazard)* (Yes=1)	1.08	2.93	6.26
Some aspects of work are risky (Yes=1)	1.09	2.97	5.91
3. Illnesses suffered from			
Other illnesses (Yes=1)			
Do heavy physical work (Yes=1)	0.09	1.09	0.17 ns
Industry sector (Yes=1)	0.17	1.19	0.21 ns
Body aches and pains (Yes=1)			
Do heavy physical work (Yes=1)	-1.83	0.16	-2.06
Industry sector (Yes=1)	2.74	15.51	2.29

Effects of Children's work on Recreation

Children who play is a normative behavior rather than children who work. Table 3 shows the findings of the effect of work on recreation.

Presence of Free Time/Day Off

Free time means that the child does what pleases him most. In the 1995 data on working children, the factors that significantly affected the working children's free time are hours of work per day, having an adult supervisor, boredom at work and exposure to dust. Longer working hours would decrease their odds of having free time by 31%. A non-relative supervisor on the job would also decrease their odds of having free time by 19%. The 41% decrease in free time was also noted among children exposed to dust. In the 2001 data on working children, the odds of having a free time is decreased by 80% for children who work more hours during the day. Similarly, children working in industries who were not provided enough light and did not wear aprons for protection seemingly decreased their free time.

Sleeping is mostly the choice of working children, especially those in the agricultural sector. Unlike those working in the industrial sector, those who work in the farms, fishing, mining and forestry have more irregular hours than their counterpart in the industries who were had more recreational activities. However, those in the industrial sector may likely have a non-relative for their supervisor, are more exposed to poor lighting (illumination) and other physical and chemical hazards like dusts.

Activity during Free Time

The children's activity during free time as shown in Table 3 shows children who work in farming, fishery, forestry and mining, who will do nothing or merely opt to rest or sleep is higher by 36% than those working in other industries. It can also be noted that children working in agricultural-related work almost do not have time (0.81) for recreational activities.

When a working child is exhausted from work, it is less likely for it to engage in recreational activities. Thus, the odds to rest increased by 15% when he comes from work more exhausted. In the 2001 data on working children, those exposed to physical hazard like illumination and non-use of safety gadgets like wearing of apron and overalls increased their odds to rest or are not likely to engage in recreational activities.

The effect on work on the recreation of children has provided evidence that the child who works whether in the agricultural or industrial has reduced playing time or engaging in recreational activities. Due to many work related factors, children opt to sleep than play or to engage in recreational activities.

Table 3. Odds ratio and Relative Risk Ratio of Child labor and Recreation, 1995 n=22,386,517; 2001 n= 24,850,943

1995	Coefficient	OR/RRR	T
1. Had free time/day-off (yes=1)			
Normal working hours per week (Yes=1)	-0.37	0.69	-2.99
Adult relative supervised (Yes=1)	-0.21	0.81	-3.23
Bored with work (Yes=1)	0.46	1.58	2.80
Dust (*chem. hazard)* (Yes=1)	-0.53	0.59	-2.66
2. Activity during free time			
None(Yes=1)			
Industry sector (Yes=1)	-0.45	0.64	-3.13
Exhausted from work (Yes=1)	-0.30	1.35	3.22
Recreational (Yes=1)			
Industry (Yes=1)	0.81	2.25	2.77
Exhausted from work (Yes=1)	-0.23	1.26	1.15
Recreational/Rest (Yes=1)			
Industry sector (Yes=1)	0.09	1.09	0.84 ns
Exhausted from work (Yes=1)	0.14	1.15	2.56
Base category = no recreational activity (rest or sleep)			

2001	Coefficient	OR/RRR	T
1. Had free time/day-off (yes=1)			
Illumination *(phys. hazard)* (Yes=1)	-3.24	0.04	-4.38
Overall/Apron *(safety gadget)* (Yes=1)	-2.76	0.06	-3.42
Number of working hours per week	-1.62	0.20	-5.50

Note: OR, Odds Ratio --- Binomial Logistic Regression
RRR, Relative Risk Ratio --- Multinomial Logistic Regression

Discussion

In the Philippines, school and work are not mutually exclusive. The findings of this study support those of previous studies that child labor adversely affects schooling, reduces time for rest and recreation and has harmful effects on children's health especially those who work in hazardous conditions (Hesketh et al., 2012; ILO, UNICEF and World Bank, 2012). Children, in general, devote their time to three kinds of activities: school, work and leisure activity. The more time is spent on working, the less time is spent on schooling and leisure, which will likely have adverse effect on their health.

The effect of child labor on the children's educational status has been well studied. According to the human capital perspective, work hampers school attendance. In this case, work and schooling are in a trade-off relationship. Generally, the results of earlier studies showed that the majority of the working children attend school. However, many working children who attend school, incur absences which is a triggering factor for dropping out (Rivera, 1985;

Huston, 1994; ILS-DOLE, 1994). There are two ways of looking at the findings: focusing at the majority who manage to stay in school in spite of having to work and looking at the minority who drop out. Factors that help a child to stay in school are when it is engaged in a less permanent job, the "boss" is a relative, its work is less exhausting, and its work does not require heavy physical work with less working hours. In a closely knit Filipino family where the poorer relatives are employed by the well-off relatives, the family as an institution functions as a safeguard against maltreatment and exploitation of young workers. As emphasized in the social responsibility perspective, the extended Filipino family then takes on the role of socializing the child through work. In this situation, as shown in this study, the child who works for a relative faces less problems in terms of access to schooling and health. Studies are not hampered if a child works for free (unpaid worker) and is in less permanent jobs. All these factors mean that a child works as part of his socialization process. Thus, work can be an important component of education, especially in household–based production systems (Rodgers & Standing, 1981:33; Grootaert Patrinos, 1999:193; Siaens, 2005).

Children who drop out have a hard time studying and working at the same time. The main reason cited for dropping out of school is financial difficulty. Some would work to cover the cost of schooling. Others, who experience working and earning an income, lose interest in going back to school. The latter are mostly engaged in the agricultural sectors, in informal jobs and whose work is characterized by long hours, involving heavy physical work. The findings of this study confirm that of Holgate, et al. (2012) where weekly hours dedicated to work and work scheduled in the morning were also found to affect academic standing of child laborers. Aldaba, Lanzona and Tamangan (2005) found that drop out decreases as the children complete 10 years of schooling or graduate from high school. The parents are a factor here as they are more willing to invest in children who have already reached a good level of education. A survey conducted in the Tanga region of Tanzania in 1993 using time log data showed that increasing the number of work hours adversely affected the development of children's reading and mathematical skills (Akabayashi & Psacharopollous, 1999). In sum, the reason for dropping out have an inverse relationship to the factors that help them to stay in school. Thus, the findings of this study support the perspective that children whose work is meant for adults may forego schooling and are vulnerable to abuse and exploitation. However, the findings also show that when a child works for a relative the child's schooling is less affected and in this situation, work then is part of their socialization to adult roles.

Do children who work have health risks? The majority of the studies confirmed adverse health effects among working children such as respiratory ailments, anemia and diarrhea, fever, cough and cold (Del Rosario & Bongga, 2000; Veneracion, 1992; Huston et al., 1994; Maslang, 1991). This study used two data sets, although there was no attempt to compare the data from the two surveys simply because non-comparable variables were used in both surveys. Even in the absence of comparison between the two data sets, it proved that child labor is dynamic. For example in 1995, children who worked in the agricultural sector were found to be have higher health risks while in 2001, children engaged in the industrial sector were exposed to health risks such as parasites and bacterial infection, exposure to noise, extreme temperature and pressure. It can be surmised that exploitation and abuse affect health of working children in the industrial sector as they are involved in physically demanding work and long hours, thus, increased urbanization aggravated this situation.

Child labor is a social problem (Del Rosario & Bongga, 1986; 2000; Lopez-Gonzaga et al., 1990; Apt, 1996; Fassa, et al., 2000; Rosati et al., 2015). Child labor in the Philippines is a result of poverty and used to ensure the survival of the household. The children are encouraged by their parents to work because the latter do not have regular income. The parents too must have started working at a very young age and by the time they reach early adulthood they are

too weak to engage in physically exhausting work. (National Source book cited in Del Rosario and Bongga, 2000). It is therefore in this light that the labor market perspective is partly supported by this study.

Moreover, a child who works, but does not have much time to engage in recreation, may be deprived of the joy of being a child. Work makes a child mature faster but when a child loses its childhood its physical growth may be stunted. During free time, working children prefer to sleep rather than play. Thus, children who work mature faster but may miss out on the joy of childhood often associated with playing. The impact of child labor on recreation is an issue that needs further research.

In a poor country where the government cannot provide welfare assistance and services for the poor, child labor compensates for this ineptness and inefficiency of the government. The Philippine government has however made big strides in promoting human capital development that would directly and indirectly affect Filipino youths. The Department of Social Welfare and Development (DSWD), a government institution, was created to develop and implement a comprehensive social welfare programmed for protective, remedial and development welfare services for children and youth (DSWD Legal Bases). Over the last five years, DSWD had been involved in a program called the "*Pantawid Pamilyang Pilipino Program*" also commonly known as 4Ps which is a human development program that provides cash grants to children aged between 0-14 years old who come from the poorest households in the municipalities. The program latently target children who work and who come from the poorest households. Some children have to work not for survival but to finance their schooling. With the *Pantawid Pamilyang* program a child need not work to support his education. Thus, this project is premised on the fact children must study and not work.

Moreover, the Philippine educational reforms called "K to 12 programmes" introduced in 2011 lengthened the duration of basic education from 10 years to 12 years. This educational reform promises to provide better opportunity for Filipino youths even without going to the tertiary level. These two reforms, 4Ps and K to 12 programmes, are institutional support provided for the poor in order for them to stay longer in schools. Increasing educational levels means learning new skills and generating more income. But more than teaching new skills, schools need to provide quality of education that should adhere to cultural norms to serve as guide in the appropriate treatment towards children. As seen from the human capital perspective, schooling remains a reliable vehicle towards promoting marketable skills that would prepare them for better quality of life and at the same time prevent them from entering the labor force at a young age when they are vulnerable to abuses and exploitation.

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