Journal of Public Health and Development
Vol. 15 No. 1 January-April 2017

ORIGINAL ARTICLE

Health hazard exposure and healthcare-seeking behavior among child farmers in the livestock farms in Bukidnon, Philippines

Romulo F. Nieva, Jr[1]

[1] *RN, MHSS, De La Salle University- Manila, Philippines*

Corresponding author: *Romulo F. Nieva, Jr.* ***E-mail:*** *romulonieva91@gmail.com*
Received 13 November 2016 Revised: *11 April 2017* ***Accepted:*** *13 April 2017*
Available online: *April 2017*

Abstract

Nieva, Jr
Health hazard exposure and healthcare-seeking behavior among child farmers in the livestock farms in Bukidnon, Philippines.
J Pub Health Dev.2017;15(1):33-48

Child agricultural work is a global phenomenon. Children account for up to one-third of the global agricultural labor force. While working, they are exposed to the same hazards as adults that may yield various health problems. A cross-sectional study was carried out to describe the health hazard exposure and health-seeking behavior among child livestock farmers. One hundred purposively-sampled rural children were interviewed in Bukidnon, the Philippines. Sociodemographic data was described using frequency and percentages. Mann-Whitney and Spearman correlation were employed to determine association of socio-demographic variables and levels of health hazard exposure.

Most of respondents (92%) were aged 12 and older. More than half (60%) were male and more than two-thirds (76%) were attending school. Most of them had been working in the farm for 5 years. Findings indicated that the livestock farming activities among these child workers varied; while some were involved in high-risk livestock farming activities, such as administering vaccines to livestock, others were involved in less risky activities, such as feeding and disposing animal wastes. Age (p=0.004), sex of the child (p=0.001), sex of household head (p=0.0019), and household size (p= 0.002) predicted the level of health hazard exposure among child farmers. As to health consequences, data revealed that these included multitude of health problems such as fatigue, cough, strain, and parasitism. Furthermore, the results highlight the largely self-treatment and informal relational healthcare-seeking behavior among child workers in response to the health consequences.

Strengthening the Information, Education and Communication (IEC) activities and health check-up camps with emphasis on improvement and promotion of health can help this vulnerable child farmers. Lastly, initiating dialogue with the community and household levels to raise awareness about the health consequences is crucial.

Keywords: livestock farms, farmers, children, health problems, healthcare-seeking behavior

Introduction

Child agricultural work is a global and diverse phenomenon. It occurs in traditional and modern, developing and developed countries, on family farms and commercial plantations. The production of various agricultural outputs employs combinations of the production resources such as land, capital, and labor and of which labor is very important and is supplied by men, women and children[1]. In many poor countries, children may begin working alongside their parents from 4 or 5 years of age. Some of these children choose to work; others are forced to do so, often as bonded laborers in repayment for a loan taken out by a parent or care-giver[2]. This is especially true in the rural communities, where family units have been the major source of farm labor[3]. On a global scale, far more children work in rural than in urban areas, which means that the activities most working children perform are in fields and on farms which may include caring for livestock and doing many other tasks[4].

In absolute terms, children account for up to one-third of the global agricultural labor force, a historically and traditionally under-regulated sector, and livestock raising forms as a considerable subsector with global demand for animal products rising[5,6]. In the Philippines, it is estimated that around 5.5 million children aged 5 to 17 years are working and about 54 percent of them are in agriculture[7,8]. Agriculture has been identified as one of the hazardous sectors in terms of work-related fatalities, accidents and diseases[9]. It accounts particularly for almost half of all workplace fatalities in adults and children6. Hazardous work in the sector comprises fishing, forestry, livestock herding and aquaculture[7]. Specifically, health risks in the livestock farms are brought about by close contact with the animals and livestock farming activities[10]. In the livestock sector, it is clear that children's work activities largely take place in rural settings where the boundary between working and living conditions is blurred[5]. More significantly, "hazardous work cannot be acceptable for children because of basic biology. Children are not simply smaller than adults; they are physically and mentally different"[7].

A number of studies have already been conducted to understand the health and social conditions of child workers[8,2,11]. However, these studies do not give focus on children's involvement in the livestock sector. Furthermore, studies on child work in livestock farming have been conducted in few countries[5,12] and have provided a very thin strand of information. Apart from the said research hiatus, only scant of information have been generated so far about health consequences associated with child work especially in livestock farming[13]. It is also very significant to understand the phenomenon because health risks faced by child farmers are derived from the fact that they often work in informal and family unit which account for a disproportionately high percentage of all working children with health problems[11,13].

It is a common misconception that child agricultural work takes place within traditional family farm settings, forming part of the household and community division of labor, where children are unlikely to come to any harm. The majority of agricultural tasks are potentially hazardous when carried out by young children, for long periods, under difficult conditions, or in the vicinity of hazardous substances or equipment[2]. Hence, looking at the phenomenon from the health and social science lenses,

this study seeks to describe the health hazards exposure encountered by child farmers while working in the farm and their health-seeking behavior in response to the health consequences.

Methods

Research Design

This study presents major findings derived from a descriptive study involving 100 child farmers actively participating in small –scale child livestock farming activities in the province of Bukidnon, the Philippines. The study was quantitative in nature and data were collected through face-to-face interviews using an interview schedule.

Population and sampling

The respondents were selected through a purposive sampling technique as guided by the following inclusion criteria: (1) they must be aged below 18 years (a child is defined as a person under the age of 18 years, a definition adopted by United Nations and International Labor Organization) during the conduct of the study; (3) they must have regular participation in major or supporting role in livestock farming and other related activities; and (4) they were currently involved in the farm during the conduct of the study.

Research instruments

The study utilized survey interview schedule. The instrument was originally drafted in English. The researcher sought someone well-versed in Cebuano (a local language commonly understood by people in the research site) to help him in the translation of the interview schedule. It later back translated into English for validity.

The interview schedule contains 4 major parts: (1) sociodemographic profile; (2), children's participation in low and high-risk livestock farming activities; (3) health problems experienced and (4) healthcare-seeking behavior. Part 1 comprised the sociodemographic profile of the respondents. Part 2 was about children's participation in livestock farming activities which cover the types of tasks performed, level of participation and reasons for working in the livestock farm. The level of participation was answered through 4-point Likert scale: 1=non-participation, 2=occasionally, 3=frequently, 4=very frequently. Part 3 consisted of the specific health problems commonly encountered in the livestock based on literature. Respondents were asked if they encounter the listed health problems. And part 4 included the healthcare-seeking behaviors related to health consequences among child farmers: informal personal, informal relational, traditional and professional. The interview schedule was constructed based on the variables and indicators found in the review of related literature.

The interview schedule pretested to five child farmers who had similar characteristics as those outlined in the inclusion criteria for validation of the instrument and coding of answers. Pre-test participants were individually scheduled for interviews in their most convenient time and guided to avoid rushing in answering the questions. The pre-testing provided pertinent revisions in the form, style, and wording of the questions. Then the instrument was adjusted accordingly.

Data collection procedure

The researcher initially asked permission from the concerned local leaders. The researcher scheduled the children for interviews with their most convenient time or interviewed them immediately. The interview approximately lasted from 15 to 25 minutes per respondent. Data regarding demographic profile, livestock farm tasks performed by them, the common health problems while working in the farm and their health-seeking behavior were recorded. Data collected were tabulated and analysis was done.

Data Analysis

The data gathered were sorted according to the variables. The data were encoded using the Statistical Package for Social Sciences (SPSS). For the socio-demographic characteristics, descriptive statistics such as frequency was obtained together with the means and ranges. The levels of health hazard exposure was answered through 4-point Likert scale: 1=non-participation, 2=occasionally, 3=frequently, 4=very frequently. Then, their scores were interpreted as high with a mean score of 3.1 to 4, moderate with a mean score of 2.1 to 3 and low with a mean score of 2.0 and below. Mann-Whitney and Spearman correlation tests were employed to determine association of socio-demographic variables and levels of health hazard exposure.

Ethical Consideration

The confidentiality of respondents in this study was fully adhered to by not mentioning the names of study subjects and not availing personal information of study subjects to anyone not involved in this study. Since the selected respondents were minor (aged below 18), they were visited in their households for informed consent from their parents concisely explaining the study's primary purpose, commitment at ensuring confidentiality of data and anonymity of the participants. Ethical clearance was obtained from the department and the approval from the local government unit and local authority in the province of Bukidnon, Philippines.

Results

Table 1 shows the socio-demographic characteristics of the respondents. Of the 100 children interviewed, most were aged 13 and older. More than half were male.

Table 1 Distribution of child farmers by sociodemographic characteristics

Socio-demographic characteristics	Percent
Age groups (in years)	
8-9	6
10-11	2
12-13	9
14-15	20
16-17	63
Respondents' sex	
Male	60
Female	40
Educational status	
Currently enrolled	76
School dropout	24
Sex household head	
Male	52
Female	48
Household size	
3-5	48
6-8	42
9-11	10
Mean= 6, S.D.=1.9, Min=3, Max=11	
Monthly Household Income	
P1,000- P5,000	65
P5,001- P10,000	25
P10,001- P15,000	5
P15,001- 20,000	5
Number of years involved in the livestock farm work	
1-3	45
4-6	29
7-9	6
10-12	20
Mean=4.8, S.D.=3.3, Min=1, Max=12	

When queried regarding their educational status, majority (76%) were attending school while others had dropped out from school. Respondents were asked about the educational attainment of their parents. A little more than half of the respondents' fathers were elementary graduate (53%) and most of mothers were able to finish high school (46%). Furthermore, the average household size was 6. More than half (65%) of the respondents had a total monthly household income range of P1, 000- P5, 000; the rest reported varying income levels. Finally, the average number of years working in the livestock farms was close to 5 years.

Health hazard exposure among child farmers in the livestock farms was measured in this study. There have been indications that children were active on different livestock farming tasks that can be classified as low and high-risk activities. However, it has been argued that knowledge on these forms of children's involvement is limited. A different set of tasks or farming activities were performed by child livestock farmers as shown in the study (Table 2).

Table 2 Distribution of child farmers by levels of hazard exposure

Levels of health hazard exposure	Frequency*	Mean Score	Interpretation
Low-risk activities			
1. Disposing animal manure	100	3.80	High
2. Maintaining sanitation	100	3.98	High
3. Feeding and watering	100	3.98	High
4. Herding	96	3.88	High
5. Tethering of animals inside shed at night	94	3.76	High
Subtotal	**98**	**3.88**	**High**
High-risk activities			
6. Assisting birth of animal	81	2.11	Moderate
7. Attending to sick animals	81	2.50	Moderate
8. Deworming	78	2.65	Moderate
9. Administering vaccine	77	3.00	Moderate
10. Slaughtering	74	3.00	Moderate
11. Milking the livestock	23	1.55	Low
Subtotal	**69**	**2.47**	**Moderate**
TOTAL	**83.5**	**3.11**	**High**

Legend: *Multiple responses (n=100) 2.1- 3: Moderate level of participation

≥ 3.1: High level of participation ≤ 2.0: Low level of participation

It is noted that all the child livestock farmers performed three livestock farm-related tasks namely: disposing animal wastes (100%), maintaining sanitation (100%), and feeding and watering of animals (100%). These activities require basic skills and less supervision from adults. On the other hand, ninety-six (96%) and ninety-four (94%) respondents performed two common tasks such as herding and tethering of animals inside shed at night, respectively. Moreover, 81 respondents were able to assist on birth of livestock and take care of sick animals; over three-fourths of the respondents claimed that they did deworming (78%) and vaccine administration (77%). The least performed livestock farm activity as reported was milking on the animals. This pattern of role assignments has been equated with the complexity of the nature of the said livestock activities. Some of these tasks highly require extensive skills and supervision.

The activities performed by child livestock farmers with high level of exposure include disposing animal manure (mean score of 3.8), maintaining sanitation (mean score of 3.98), tethering of animals inside shed at night (mean score of 3.76), herding (mean score of 3.88) and feeding (3.98). These activities do not highly demand for skills and safety. On the other hand, attending to sick animals (mean score of 2.5), assisting birth of animal (mean score of 2.11), deworming (mean score of 2.65) and administering vaccines (mean score of 3) were the tasks performed by respondents with moderate level of participation. Most of these livestock farming activities were tedious and complex. Lastly, milking the livestock was the least task done by all respondents with low level of exposure (mean score of 1.55). This livestock task is mainly performed by adult requiring utmost care.

Hazard exposure was compared among the socio-demographic characteristics of the respondents. Table 3 confirms that there is a statistically significant difference between girls' and boys' levels of health hazards exposure (p=0.001). It can be further concluded that male were more highly involved in both low and high-risk livestock farming activities.

Table 3 Factors affecting hazard exposure among child farmers

Characteristics	Statistical test	Coefficient	Significance level (p-value)
Sex of child	Mann-Whitney	U=103	0.001**
Educational status	Mann-Whitney	U=908.5	0.670
Age	Spearman correlation	Rho=0.29	0.004**
Sex of household head	Mann-Whitney	U=907.5	0.002**
Household Size	Spearman correlation	Rho=0.31	0.002**

*p < 0.05 **p < 0.01

Stratum of data also reveals that there is a significant difference between the levels of exposure to hazards of child livestock farmers from female-headed and male-headed household (p=.002). Between the two categories, rural children from female-headed household category were more active in doing livestock farming activities than their group counterpart. Moreover, the analysis shows that there is a positive relationship between respondent's age and their levels of health hazards exposure (p= 0.004). Hence, the older the child, the more involved they are in the high risk livestock farm activities. Similarly, respondent's household size and their level of health hazards exposure (p= 0.002) are directly correlated. The bigger their household size, the more involved they are in the high risk livestock farm activities.

Health problems of child farmers was explored. Depending on the extent of their participation in activities in a certain sector, children often encounter health problems at varying degrees. The respondents were asked about the common health problem they experienced while working in the livestock farms. Table 4 specifically shows the different health problems encountered by child farmers.

Table 4 Percentages of child farmers by health problems

Health Problems	Percent *
Fatigue	98
Back pain	97
Cough	94
Headache	93
Fever	91
Diarrhea	91
Abdominal cramps	90
Eye irritation	90
Dehydration	81
Strain	78
Parasitism	71
Wound due to animal bite or attack	69
Sleep problem	51
Skin rashes	47
Fractures	10
Difficulty of breathing	10
Work-related anxiety	9

*Multiple responses (n=100)

Table 4 shows that most respondents experienced ergonomic-related health problems such as fatigue (98%), strain (78%) and back pain (97%). Other common health complaints are chemically-induced such as cough (94%), headache (93%) and eye irritation (90%). Data also indicated that biological-related health consequences were encountered by working children like fever, diarrhea and parasitism. It is also noted that they experienced more serious health conditions such as skin rashes, fracture and difficulty of breathing.

The respondents were asked about their health-care-seeking behaviour (Table 5). The choices included (A) self-treatment such as self-first aid, rest, and self-medication (informal personal), (B) seeking help from trusted individuals such as siblings, parents and friends (informal relational), (C) seeking help from folk healer, (D) seeking medical help from professional such as nurses, doctors and midwives among others and (E) no intervention.

Table 5 Percentages of child farmers by types of healthcare-seeking behaviors

Health Problems	Healthcare-seeking Behaviors*				
	A	B	C	D	E
Fatigue	90	8	--	--	--
Back pain	87	10	--	--	--
Cough	22	52	20	--	--
Headache	20	50	23	--	--
Fever	9	72	10	--	--
Diarrhea	10	61	12	8	--
Abdominal cramps	20	33	10	15	12
Eye irritation	76	14	--	--	--
Dehydration	5	35	28	13	--
Strain	39	22	17	--	--
Parasitism	8	27	17	19	--
Wound due to animal bite or attack	15	24	16	14	--
Sleep problem	40	11	--	--	--
Skin rashes	10	20	10	7	--
Fractures	--	1	2	7	--
Difficulty of breathing	--	1	5	4	--
Work-related anxiety	9	--	--	--	--

Legend: A- Self-treatment
B- Informal relational
C- Traditional
D- Professional
E- No intervention

It can be noted that most of the respondents employed self-treatment to handle the health consequences experienced. Most of the ergonomic and biological-related health consequences were reported to be self-managed through application of first aid, rest, self-medication, and hydration. Similarly, some health complaints that are minor in severity were reported to be managed through self-treatment or seeking help from significant others. Furthermore, folk healer and professional health workers were also consulted for the treatment of those more serious health problems.

Discussion

The results reveal that children were major source of farm labor in the livestock farms, supporting previous studies[5,12]. As emphasized by some authors, children represent a critical social-economic group in this sector and can play a myriad of roles in agricultural activities[1]. Additionally, all child livestock farmers in the study participated in less risky farm activities such as feeding and herding and some were active in high-risk farm activities such as assisting birth of animal, deworming and administering vaccines. The low level of participation in these latter activities is evidently due to the high demand of the activities in terms of strength, skill and safety. Within the livestock farm, herding seems to be a common activity performed by children. Besides the actual act of herding, boys and girls involved in herding also take up various other activities with regard to livestock care (cleaning animals, caring for sick animals, etc.). This pattern of role assignments implies that most of the children could have the ability and capacity to be involved in practical livestock farming activities and rigorous tasks that require supervision to some extent.

Determinants of health hazards exposure among rural children was examined. To have a deeper grasp about child work as a social phenomenon, it is significant to investigate the determinants associated with children's exposure in the livestock farm. The study showed that for sex-disaggregated role assignments, the study reveals that exposure differs between male and female children for livestock farming activities. The results indicated higher levels of exposure for male children than their female counterparts, corroborating earlier findings[5,12]. More specifically, male dominance in herding depends on the type and size of livestock within their domain[14]. In the study, most of animals raised were larger such as cattle, horse and carabao. Handling large animals is the domain of men in most societies, and children's tasks in livestock handling often follow these gender lines[15]. These results further indicate that among those activities substantively participated in by children, male children are usually involved in those that are more laborious (e.g., herding, slaughtering) or demanding in terms of skill (e.g., deworming, administering vaccine to livestock), such significantly higher level of participation of male children points to the fact of the age-long domineering role of male over female in agriculture[16,17] which represents a manifestation of the build-up from childhood. In addition, the typical roles of boys in terms of activities that require more skills are exclusively the domain of men for socio-cultural reasons[14]. Another factor that predicted children's levels of health hazards exposure was age. Although all child farmers in the study participated in less risky farm activities such as feeding and herding, older children were more active in high-risk farm activities such as assisting birth of

animal, deworming and administering vaccines. The high level of participation of older children in these latter activities is evidently due to the high demand of the activities in terms of strength, skill and safety.

Beyond child's sex and age influence shown earlier, this study also reveals that the overall level of health hazards exposure in agricultural activities does not differ between children in different educational level categories. Based from the past studies, children who had left school worked more than children in school but also more than children who never went to school[18]. However, this is not supported by the current study. The results accentuate that whether rural children were studying or not, it does not determine their level of exposure in the farm. It can be explained by the fact that rural children are more likely to be involved in agricultural activities than urban children[4]. When talking about child work in pastoralist communities, it is important not to disregard the historical sociocultural traditions related to the division of labor within the household. The findings further emphasize that child livestock farmers from male-headed and female-headed households were both active in livestock farm activities that do not demand further strength, skills and safety (e.g. feeding, disposing manure) while children from female-headed households were more involved in skills-demanding tasks (e.g deworming, administering vaccine) than their group counterpart. Past studies account that absence of male family heads may contribute to the added responsibilities of children on family farms[19,20].

There has been growing body of evidence that mother's education has an influence on child work and the size of this effect is often greater than that of the father's[21]. However, the result of this study is not consistent to the outcome of the past researches. This deviation from the previous findings can be attributed to the unique characteristics of the respondents since the vast majority of the child livestock farmers worked on predominantly family- run farms, which own land and livestock. This is because if households have possession of land and livestock, there can be higher labor demand within the family and children are often required to help[22,23].

There is consistent evidence that household size has an influence on the degree of involvement of children in the farm. With regards to this determinant, results of this study show that children from a bigger household size tend to be more active at work regardless of the nature of the tasks (those that require less supervision and those that demand high skill and strength). Significantly, this positive association between household size and child work can be attributed to the susceptibility of the big household to compensate for the needs of family members. This is derived from the fact that bigger households are more likely to give their children to work in order to earn income for the family and to suffice higher schooling costs as a consequence of resources per person being smaller in larger households[24,25].

Health dimensions of child work in the livestock farms was varied. The different health consequences that children may face when working with livestock largely depend on context specific working or environmental conditions as well as health risks inherent to the sector. The rural nature of farm work exposes children to extreme climatic conditions, agrochemicals, physical hazards, animals and insects, parasites and infection[2]. The study reveals that one common frequently experienced type of health consequence

was ergonomic which includes fatigue, back and joint pain. These findings are similar to the study in Mongolia where many child workers in livestock sector reported to experience fatigue and tiredness[12]. These conditions can be associated to the heavy physical nature of the tasks and some ergonomic factors such as heavy lifting and poor posture that may raise the chances of musculoskeletal discomforts since many of the children were highly engaged in roles that highly demand for strength[11,2].

Additionally, chemically-induced health consequences were also frequently encountered such as coughing, eye irritation and headache after work. As shown, child livestock farmers were involved in tasks that highly demand in terms of skills and safety like deworming and administering vaccines among others. Dealing with toxic chemical matters for livestock care is considered a risky task for children in animal husbandry that may cause human reactions like allergy and cough[26,12]. It has also been emphasized that children not only work, but also often live in close proximity to animals. Furthermore, child workers are perceived to be less likely to distinguish and complain about risks in their work[5].

Regarding healthcare-seeking behaviour among child farmers, in this study, rural children chose self-treatment to handle the health consequences experienced such as fatigue, dehydration, and diarrhea among others. Since children lived in isolated rural communities, travel to health facility is a burden, thus, only the more extreme injuries would likely result in a visit for health facility corroborating earlier studies[27,28]. Additionally, such behavior can also be attributed on their perception on illness based on the type of symptoms that is largely influenced by belief prevalent in the communities.

Furthermore, other health consequences encountered (back pain and sprain) were commonly treated through seeking help from traditional healer. Folk healers usually approach healing in a holistic way, dealing with a person's physical, emotional, and even spiritual problems[29]. This is especially true in the rural communities where traditional healers were viewed as co-equals of professional healers like doctors and nurses. Also, it has been shown that trends in utilization of a health care system, formal or non-formal, by and large, vary depending on factors such as economic status[27]. As shown in the study, the monthly household income of their family was not high reflecting their low economic capacity. In the developing nations like Philippines, medical pluralism, or the existence of several distinct therapeutic systems in a single cultural setting, a wide range of therapeutic choices is available, ranging from self-care to folk and formal health sector[30].

One limitation of this study was the nature of data collection on the health problems encountered by child farmers. They were asked to remember the types of health consequences experienced. An aspect of these young respondents' understanding of the questions could have an influence on their responses. Moreover, this study did not utilize a strict clinical or medical approach to determine their health problems. Thus, laboratory findings and other health indicators or anthropometric measurements of the children such as height, weight and body mass index among others were not assessed in the study. The presence of parents, family members and significant others living with the children during entire interview have an effect on the children's answers or responses to each question. Lastly, the sampling method was

non-probability utilizing the purposive technique so it did not represent the population of child livestock farmers in Bukidnon.

Conclusion

The foregoing presents the health susceptibilities and consequences among child farmers due to their active involvement in the livestock farm and associated factors. The Philippine government has already made an institutional and legal mechanism in the commitment for global campaign in ending child labor in the country like R.A. 9231. However, a hiccup in the foregoing strategy is traceable. One palpable lacuna in the roadmap is lack of concrete data and mechanism for data collection for policy making. Even for the industrialized countries, work-related injuries and illnesses are systematically under-reported, due to weakness in the safety regulations and enforcement, health services close by, and mandatory reporting and surveillance systems.

Initiating a dialogue at the community and household levels to raise awareness about the health consequences for children must be laid up. For example, devising methods to reduce the duration and strenuousness of children´s work with regard to livestock handling (e.g. herding) is one important mechanism to cushion the negative impact on their overall safety and health. Finally, awareness campaigns through partnership with sectoral associations, authorities and community leaders must be developed for an industry-wide approach to effectively address the issue.

Recommendations

Based on the findings and implications of the study, the researcher proposes the following:

Research level

1. The study mainly investigated personal characteristics of the respondents. Further research can also be undertaken looking at other factors influencing children's participation in livestock farming such as parental attitudes towards child work and community characteristics.

2. Undertaking qualitative research through in-depth case studies that will provide better understanding among the variables of the study. These can help in establishing deeper insights on the very working conditions of child livestock farmers.

3. Carrying out a similar study that will employ a bigger sample size utilizing probability sampling technique. This will increase the reliability and validity of the statistical results which can be generalized for the child livestock farmers' population.

4. Conducting a similar study but includes child livestock farmer's knowledge and practices on safe and precautionary measures. This will further reveal whether there is difference between their knowledge and practices regarding precautionary measures in the livestock farm.

Program level

1. It is within communities and within households especially, that decisions are taken if children go to work in the farm. Therefore, these direct stakeholders have a considerable influence on reducing risky child work in the livestock sector. Thus, there is a need to initiate dialogue at community and household levels

to raise awareness about the health consequences for children. Devising methods to reduce the duration and strenuousness of children´s work activities with regard to livestock (e.g. herding) is more significant.

2. Awareness campaigns through partnership with sectoral associations, authorities and community leaders to develop an industry-wide approach to address the issue. This mechanism may support and help design educational training for working children, and their parents.

3. It was emphasized in the study that household size is one of the determinants of health hazard exposure in the farm which can be highly economic in nature (e.g. to generate income). A specific goal to address economic needs must be laid up by the government and partner agencies through poverty alleviation strategies.

Acknowledgments

Key findings from the author's graduate thesis for Master of Health Social Science program at De La Salle University-Manila Philippines were utilized for this study. The thesis was undertaken with the support from DLSU-Manila through Ford Foundation Endowment Scholarship. Special thanks are given to the author's mentor, Ms. Cristina Rodriguez, chair of DLSU-Behavioral Sciences Department, Dr. Romeo Lee and respondents and their parents.

References

1. Ajoke, O., Olaide, S., Oluwakemi. Children's participation in agricultural activities in the adopted villages of the Institute of Agricultural Research and training, Nigeria. Journal of Rural Social Science. 2011;26(2): 126-36.
2. Gamlin, J. and Hesketh, T. Child Work in Agriculture: Acute and Chronic Health Hazards. Children, Youth and Environments.2007;17(4): 1-23.
3. Adisa, R., Adekunle, O. Role duality among school-age children participating in farming in some villages in Kwara State, Nigeria. Africa Development. 2007; 32(2): 108-20.
4. International Labour Organization (ILO). Child Labour: A Textbook for University Students. International Programme on the Elimination of Child Labour. Geneva, Switzerland: International Labour Office; 2004.
5. FAO (Food and Agriculture Organization). Children's work in the livestock sector: Herding and beyond. United Nations; 2013.
6. International Labor Organization (ILO). Bitter Harvest: Child Labor in Agriculture. Geneva: ILO/ Bureau for Workers Activities; 2002.
7. International Labor Organization (ILO). Children in hazardous work: What we know, what we need to know. International Programme on the Elimination of Child Labour. Geneva, Switzerland: International Labour Office;2011.
8. Barna, S. Is work in the agricultural sector more hazardous for child laborers in Ghana than work in other sector? Master's Thesis, Georgetown University, Washington;2012.
9. Edet, G. and Etim, N. Child labor in agriculture among poor rural households: Some issues and facts. European Journal of Physical and Agricultural Sciences. 2013; 1(1): 1-7.
10. Battelli, G., Baldelli, R., Ghinzelli, M., Mantovani, A. Occupational zoonoses in animal husbandry and related activities. Ann Ist Super Sanita. 2006;42(4): 391-6.

11. Fassa, A.G., Facchini L.A., Dall'Agnol M.M., Christiani D.C. Child labor and health: Problems and perspectives. International Journal of Occupational and Environmental Health. 2000; 6(1): 55-62.
12. International Labour Organization (ILO). Assessment of occupational and employment conditions of children working in livestock sector of Mongolia. International Labor Organization and Ministry of Food, Agriculture and Light Industry of Mongolia; 2009.
13. Understanding Children's Work (UCW). Child labor and health: evidence and research issues. Report on child labour and youth employment. Country report; 2002.
14. International Fund for Agricultural Development (IFAD). Mainstreaming a Gender Perspective in IFAD's Operations: Plan of Action, Prerequisites of Gender-sensitive Design. Rome; 2003.
15. De Lange, A. Gender dimensions of rural child labour in Africa. Paper presented at the FAO-IFAD-ILO Workshop on Gaps, trends and current research in gender dimensions of agricultural and rural employment: Differentiated pathways out of poverty, FAO Regional Office for Africa, Accra, Ghana; 2009.
16. Onemolease, E. A. and S. O. Alakpa. Determinants of Adoption Decisions of Rural Youths in the Niger Delta of Nigeria. Journal of Social Science. 2009; 20(1): 61–6.
17. Taj, Sajida., Khalid. M. Aujla, Muhammad Sharif, and Zarina Yasmin. Gender Dimensions of Labor Participation in Vegetable Farming Systems in District Attock of Punjab. Journal of Agricultural Research; 2009; 47(1); 91–100.
18. Thorsen, D. Children Working in Commercial Agriculture: Evidence from West and Central Africa. UNICEF West and Central Africa Regional office; 2012.
19. Abumere, S. I., Okafor, S. I. and Oluwasola, O. Rural Infrastructure and the Development Process in Rural Nigeria. Research Report No 36, Ibadan: Development Policy Centre; 2002.
20. Stloukal, L. Rural Population Ageing in Developing Countries. Issues for Consideration by FAO. Sustainable Development Department; 2004.
21. Rickey, L. The determinants of child labor and schooling in the Philippines. Department of Economics, Standford University; 2009.
22. Cigno, A., F. Rosati, and Tzannatos, Z. Child Labor Handbook. Social Protection Discussion Paper 0206 Washington: The World Bank; 2002.
23. Goulart, P. and Bedi, A.S. (2008). Child Labour and Educational Success in Portugal. Economics of Education Review. 2008; 27(5): 575-87.
24. Emerson, P., and Souza, A. Birth Order, Child Labor, and School Attendance in Brazil. World Development. 2008; 36(9): 1647-64.
25. Similer, K. R., Mukherjee, S., Dava, G. L. and Datt, G. Rebuilding after War: Micro-level Determinants of Poverty Reduction in Mozambique. IFPRI Research Report; 2004.
26. Farm and Ranch Safety and Health Association. A health and safety guide for handling farm animal and poultry; 2006.
27. Shaikh, B. and Hatcher, J. Health seeking behaviour and health service utilization in Pakistan: Challenging the policy makers. Public Health (Oxford). 2005; 27: 49-4.

28. International Labour Organization (ILO). Rooting out child labour from cocoa farms. Paper No. 2: Safety and health hazards. International Programme on the Elimination of Child Labour (IPEC), Geneva: International Labour Organization; 2007.
29. Kleinman A. Patients and healers in the context of culture. Berkley: University of California Press; 1980.
30. Ahmed et al. Gender, socioeconomic development and health-seeking behaviour in Bangladesh. Soc Sci Med. 2000; 51: 361-71.