



ATTITUDES OF THE SRI LANKA PRESCHOOL CHILDREN PERTAINING TO THE ENVIRONMENT

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ABSTRACT

Perceptions of the environment that young children acquire in their early childhood function as a base for their holistic development. The studies convey that there is a convincing positive relationship between childhood experiences in nature and the formation of pro-environment beliefs and lifestyles later in life. Literature also depicts if children do not develop a sense of respect and caring for the environment during their early years, they are at risk of never developing such attitudes later in life. Hence, there is an urgency to assess young children's attitudes pertaining to the environment to find out whether they hold favorable attitudes towards it. However, there is a lacuna of research on this topic in local as well as global context.

The present study explores the preschool children's attitudes pertaining to the environment using a two point pictorial rating scale (12 statements in 6 pairs). Participants were 34 preschool children ($M = 4.09$; $S.D = .588$), 13 boys ($M = 3.91$; $S.D = .539$) and 21 girls ($M = 4.19$; $S.D = .602$), from Colombo, Sri Lanka. The research was conducted, adhering to the ethical standards of test administration for young children. After listening to their preschool teacher instruction the children were requested to put stickers against the appropriate picture which indicated their preference. Results conveyed that majority of the children displayed pro-environmental attitudes ($M = 5.412$; $S.D = 0.821$).

Keywords: preschool children, environment, protection, attitudes

INTRODUCTION

Along with their global counterparts, the majority of the Sri Lankan children also live in concrete, virtual, textual and digitalized worlds. As a result, they spend more time in front of television, computers and traveling in cars than spending their time outdoors (Hudson, 2001) playing or enjoying the nature. Even after pre/school, a child's opportunity to explore a natural environment is becoming severely limited. Young children's exposure to the environment becomes even more limited with an increase in apartments due to urban spreading. Further, natural open spaces available for young children to play freely without the restrictions of a human-organized outdoor environment are becoming fewer.

Research conveys there is a convincing positive relationship between childhood experiences in nature and the formation of pro-environment beliefs and lifestyles later in life (Chawla & Cushing, 2007; Palmer, Suggate, Robottom & Hart, 1999). Literature also conveys that if children do not develop a sense of respect and caring for the environment during early childhood, they are at a risk of not developing pro-environmental attitudes later in life (Stapp, 1978; Tilbury, 1994; Wilson, 1994). As Cohen (1984) points out, if children developed negative attitudes toward the environment during their early years, such attitudes are likely to become deeply entrenched.

Therefore, the importance of early years as a critical factor in the formation of the pro-environmental attitudes pertaining to the environment and its protection (Tilbury, 1994) has been globally accepted the concept (UNESCO, 1976).

Environmental Education in Early Childhood

Belgrade charter (UNESCO, 1976) views the ultimate goal of environmental education as the development of an environmentally literate citizenry. Early childhood is considered as a critical period in human development with young children as active and inquisitive entities. Hence, environmental education provided during the early years would create a powerful impact in the lives of young children. Environmental education based on life experiences is a necessity and should begin during the very earliest years of life. Mainly due to the fact that such experiences play a critical role in shaping lifelong attitudes (Wilson, 1994; Pratt, 2009), values, and patterns of behavior within preschool children to preserve and cherish natural environments (Davis, 1998).

However, unlike structured and organized approach used in formal schools environmental education during early childhood requires to be more about free discovery and spontaneous learning involving activities to suit the developmental milestones (The North American Association for Environmental Education, 2010; Nazmi Ahmadi, & Bazargan, 2015) on each child's own terms free discovery on each child's own terms (Wilson, 1994). Moreover, goals of environmental education for early childhood stress the importance of holistic knowledge of the natural world as well as the emotions (Wilson, 1994; Harlan and Rivkin, 2008), personal perceptions, attitudes, and connections with nature (Pratt, 2009; Wilson, 1994) dispositions and skills (Wilson, 1994; Gardner, 1999). Hence, providing opportunities for the growth and development of the whole child (Nazmi et al., 2015), opportunities to develop a sense of wonder about nature, and earnest engagement in discovery about the real world can be considered as key elements of environmental learning during early childhood. Therefore, research support multidimensional curriculum planning on the formation of environmental literacy in preschoolers (Nazmi et al., 2015)

Hence, Davis (1998) lists two goals of environmental educational programs: 1. provide children with direct experiences within their environment fostering positive feelings and attitudes about that environment and 2. provide practical outdoor hands-on experiences designed to help develop earth-wise attitudes. Chapman and Sharma, (2001) states that objectives of the early childhood environmental education, should also exist in the moral-social continuum to foster the sense of responsibility for the state of the environment observed in all aspects of their personal and social behavior within children for them to learn practical skills in how to monitor the environment, protect it, improve it and foster nature.

Early Childhood Education in Sri Lanka

Majority of the early childhood education institutes providing ECCD services for preschool-aged children (i.e. children between the 3 to 5 years) are managed by private bodies or religious/non-governmental organizations (Wijetunge & Wickramarathna, 2003); paid by parents or sponsored by local and international non-governmental organizations; conducted more or less as a small business or charity (Pathirana, 2015).

In spite of its high literacy, the national education systems to this date recognize the child from the age of 6 years conveying the reluctance to allocate sufficient resources for early childhood educational activities of the Sri Lankan children (Pathirana, 2015). However, Sri Lanka is in the process of making varied commendable commitments to reinvigorate the development of its young children (UNICEF, 2005). It also includes being a signatory to the child rights charter, acknowledging importance of early childhood in its development efforts (Pathirana, 2006;

UNICEF, 2005; The World Bank, 2005) and devoting considerable resources to implement standards, guidelines for preschools/ day care centers (Wijetunge et al, 2003) and implementing capacity building programs, food/ nutrition and other developmental programs (Ministry of Women and Child Affairs, 2016).

Environmental Education for Preschool Children in Sri Lanka

Activity/Play based environmental education has been successfully incorporated into the early childhood education programs in Sri Lanka for decades (Ministry of Women and Child Affairs, 2016; UNICEF, 2011; Pathirana, 2011). In accordance with the environmental educational objectives of the UNESCO (1976; 1998), environment education programs also mobilized preschool and school communities to take collective action by developing their own plans and strategies such as increased access to safe drinking water and basic sanitation facilities, improved rubbish disposal practices and protecting school environments (UNICEF, 2011). Further, Child-Friendly School (CFS) have increased community understanding of the importance of creating conducive and eco-friendly environments for children, along with other activities such as school gardens (UNICEF, 2013).

In addition, some Sri Lankan preschools, especially ones in rural areas have child-friendly play spaces made up of reused materials (i.e. swings made of used tires and coconut husks..), popularly known as 'Sellam Midula' ('Play Garden'). A windfall of funds which reached Sri Lanka after Tsunami also added improvements to preschools in Tsunami affected areas. Among the quality added, culturally sensitive items to these preschools was a child-friendly play spaces or improved versions of 'Sellam Midula' provided to preschools (i.e. Made up of reusable items such as old tyres repainted in bright colors). Not only were these play spaces cost effective but it created a sense of unity and empowerment within the disaster affected communities since the communities including parents of the preschool children came together to build these play spaces (Pathirana, 2012).

Early childhood education division of the Central Environmental Authority in Sri Lanka also conducts training programs for preschool teachers, has developed preschool teachers training manuals, resources for children and initiated pilot projects to promote sustainability within the preschools (Pathirana, 2011).

However, all Sri Lankan preschool do not have these child-friendly play spaces. Especially, the inner-city preschools in urban economically deprived areas; with children being confined to indoors, limiting their access to the natural environment. Sri Lanka as a country also does not have an adequate waste separation or management system and strategies in place. Therefore, Sri Lankan preschool children may not be familiar with three pillars of sustainability; the vision of sustainability (i.e. seeking to balance human and economic wellbeing with cultural traditions and respect for the environment that links economic well-being with respect for cultural diversity, the Earth and its resources' (UNESCO 2007, p.6).

Hence, the challenge for Sri Lankan early educators would be to develop educational systems, curriculum and pedagogic practices that promote sustainable actions with respect to each of these pillars.

Further, in spite of increased interest in environmental education provided during early childhood, research in this area within the Sri Lankan milieu, is almost non-existent. However, this is a limitation which Sri Lanka shares with the world. For instance, Davis (2009) writes that during the period 1996–2007 less than 5% of published papers in global early childhood research journals involved studies concerned with environmental education and early childhood. Inarguably, Sri Lanka would immensely benefit from research on environmental education in

early childhood. A reason for this lacuna could be due to the fact that it is extremely difficult to assess the knowledge, beliefs, and attitudes of very young children on complex concepts of environmental protection.

Assessing environmental practices of preschool children

The terms monitoring, evaluation, and early childhood rarely appear together in everyday reading and conversation. By comparison, these seem to be a rigid concept that conjures up visions of formalized testing inappropriate for young children. Hence, assessing children should be a sensitive process carefully designed to yield optimum results. Literature carried out to assess young children's knowledge of concepts pertaining to the environment has used rating scales (Guide for Recycle, 2003) from the process.

Though environmental education has been provided to the children in Sri Lanka from their early childhood, studies carried out to explore the children's knowledge and skills pertaining environmental protection seem to be almost non-existent. The present study aims to explore the environmental protection knowledge and awareness of the preschoolers, in order to bridge this gap.

METHOD

The aim of the present study was to explore the Sri Lankan preschool children's attitudes, pertaining to the environment by studying a selected group of young Sri Lankan children from Colombo (capital of Sri Lanka).

Children were assessed using pictorial rating scales to investigate the inquiry, pertaining to young children's knowledge on environmental protection such as saving energy, disposing of litter ...).

Participants

For this section of the study, participants were 3 to 5 year old, 34 preschool children ($M = 4.09$; $S.D = .588$), 13 boys ($M = 3.91$; $S.D = .539$) and 21 girls ($M = 4.19$; $S.D = .602$), from three sample setting in Colombo, Sri Lanka.

Tools

The pictorial rating scale, sticker chart, stickers and statements to identify children's awareness of environmental protection were used as tools for this study. The primary data source was a pictorial rating scale corresponding to 12 sentences in 6 pairs. The pictorial rating scale comprised of 12 pictures in six pairs. Each pair depicted issue in which children were either depicted to be protecting/conserving the environment (e.g. Some children like to pick up trash and throw it away) or destroying/harming it (Other children do not like to pick up trash). These picture cards corresponded to a two point rating scale. The children were requested to place a sticker against the choice of their preference which existed in a continuum of protecting the environment to polluting/harming it.

of the same age group. Instructions were explained to the children in a child-friendly manner. In order to identify whether the children understood the instructions a sample sentence ("I have seen birds") was read out and the children were asked to put a sticker under the appropriate column ("true", or "false").

After making sure that the children understood the instructions, the remaining 12 statements (06 pairs) on issues concerning environmental protection were read out and children were requested to put stickers or circle on the corresponding picture to indicate their preferences. These simple to comprehend statements contained sentences such as "Some children like to plant things" vs

“Other children like to destroy plants and crush flowers”, and, “Some children love animals” vs. “Other children leave the water running when they brush their teeth”.

PROCEDURE

The pictorial rating scale was piloted initially with a panel of preschool teachers (n = 05) and experts of early childhood education (n = 02). During this process preschool teachers and experts were requested to gauge the pictorial rating scale for its age appropriateness and measuring environmental awareness of preschool children.

Trustworthiness, Confidentiality, and Objectivity- Permission was requested from the administrators of each institution to visit the preschool and administer the instruments to the children. Verbal permission was also requested from parents of all participating children through the head teacher at the preschools. In addition, the researcher kept the names of the children confidential. To ensure privacy and continued anonymity, pseudonyms were used, if and when necessary. The researcher was the only person who had access to the real names of the children. Peer and expert debriefing were used to ensure that personal biases, which may have taken place during the research process, would be identified and eliminated.

The preschool teachers from each location were met and the procedure of the study was explained to them. Then, each preschool teacher was requested to introduce the researcher to the children in a child-friendly manner. Next, the preschool teacher met with each group of children and informed them that they would be playing games and doing activities with the researcher and teachers. Then, a simple game was carried out to form the rapport, followed by a paper pencil task. In the following phase, children were provided sticker charts¹ and instructions on how to use them for the study. The children were encouraged to ask questions and clarify if they did not understand the procedure. After making sure that child participants understood the instructions, a sample sentence was read out to clarify their comprehension of the instructions provided. Next, 12 sentences to assess preschool children’s knowledge, and attitudes pertaining to environmental protection were read one by one, and children were instructed to put stickers in the appropriate column in which they had to select one option out of the two options provided. It was hypothesized that choices of the children would illustrate their knowledge and attitudes pertaining to each sentence on environmental prevention. A period of two months was assigned for this task.

RESULTS

Table 01: Attitudes of the Sri Lankan preschool children pertaining to environment

Statement	YES				
	f	%	M	S.D	P
1. Some children leave the water running when they brush their teeth	6	17.6%	1.824	0.387	0.00
But other children always turn the water off when they brush their teeth (+)	28	82.4%			
2. Some children love animals(+)	31	91.2%	1.088	0.288	0.00
Other children hurt animals	03	8.8%			
3. Some children like to play inside a room/ preschool	11	32.4%	1.676	0.475	0.40
Other children like to play outside(+)	23	67.6%			

¹ Child-friendly data collection tool in the form of a rating scale, which requested the children to paste stickers on to an appropriate answer box to record their knowledge on child protection.

4. Some children like to pick up trash and throw it away(+)	32	94.1%	1.059	0.239	0.00
Other children do not like to pick up trash	02	5.9%			
5. Some children like to plant things (+)	31	91.2%	1.088	0.288	0.00
Other children like destroy plants and crush flowers	03	8.8%			
6. Some children leave the lights on when they leave a room	06	17.6%	1.824	0.387	0.00
Other children turn the lights off when they leave a room(+)	28	82.4%			

Results of table 1 convey the attitudes of the children who participated in the study. Accordingly majority of the children have said that they do not leave the water running when they brush their teeth (28, 82.4%), love animals (31, 91.2%), like to play outside (23, 67.6%), pick trash (32, 94.1%), like to plant things (31, 91.2), turn the lights off when they leave a room (28, 82.4%).

Table 02: Total score of boys and girls

Score	Girls	Boys	Total
3	1	0	1
4	1	3	4
5	5	4	9
6	14	6	20
Total	21	13	34

Minimum = 03; Maximum = 06; Median = 06; M = 5.412; S.D = 0.821

The total score procured by each child for the pictorial rating scale was calculated based on a scoring criterion developed on ECCD expert opinion. When children's attitudes of the environment have calculated the scores ranged between 03 to 06 ($M = 5.412$; $S.D = 0.821$). The mean ($M = 5.412$) was close to the maximum score ($n = 06$). The majority of the children in the study had procured the maximum score ($n = 20, 58.8\%$; *girls = 14, 41.2%*; *boys = 06, 17.6%*) conveying that majority of the children have pro-environmental attitudes to environmental protection ($p < .05$). Therefore, it could be said that on the whole that preschool children carry positive attitudes pertaining to the environment.

DISCUSSION

The aim of the present research was to explore the preschool children's attitudes pertaining to the environment. Children's attitudes pertaining to saving energy, keeping the environment clean and caring for plants/animals were explored using a pictorial rating scale corresponding to 12 sentences in 6 pairs. Results conveyed that the majority of children who responded to the pictorial rating scale displayed pro-environmental attitudes.

Exploring environmental attitudes of young children can be considered an important variable within the milieu of early childhood environmental education. Especially when developing positive attitudes pertaining to environmental protection (Pratt, 2009). Therefore, exploring the existing attitudes of the young children can be considered an investment that adults should be making to deal with present and future environmental problems of the globe (Biriukova, 2005; Nikolaeva, 2008).

Hence, this study contributes to the existing literature in several ways. First, a careful review of the literature on Sri Lankan children's attitudes pertaining to environment conveys that this is the only study systematically carried out to assess such. Second, it generated an evaluation tool to assess young children's environmental attitudes. Since a major limitation of studying attitudes of young children exist in the field of availability of tools, it is envisaged that this quantitative child-friendly measure would be an asset to future researchers conducting research on similar topics.

However, the present research had several limitations. First, the study was primarily limited by its sample size. Second, the quality of the present study could have been enhanced by including children from varied ethnic, religious and socio-economic backgrounds. Third, the number of children could have been evenly distributed across gender. Fourth, interviewing child participants to explore their attitudes pertaining to environmental protection along with the pictorial rating scale would have generated additional insights to the topic, adding important qualitative data and greater insights into the children's thoughts and opinions. Fifth, the study could have achieved greater sensitivity through the maintenance of gender equality in its pictorial depiction (e.g. the pictorial scale lacked gender equality in two pictures with girls being depicted in the role of a protagonist while boys depicted as antagonists). Therefore, it is recommended that future studies also require maintaining gender balance when depicting children antagonists and protagonists of environment protection/destruction when exploring attitudes of the young children.

Further, the study was limited by its early approaches to environmental issues such as saving energy. However, literature conveys that even pre-schoolers possess a sophisticated understanding of waste issues (Pratt, 2009; Palmer, Grodzinska-Jurczak, & Suggate, 2003). Literature also conveys that young children are aware of various environmental problems (e.g., pollution, litter, hazardous wastes) and can reliably distinguish environmental problems from one another (Cohen & Horm-Wingard, 1993). Therefore, future studies carried out in the Sri Lankan milieu need to concentrate in detail specific environmental practices of young children such as their awareness pertaining to waste management (i.e. waste separation, reusing and recycling of waste) as well as their knowledge and attitudes pertaining to environmental pollution.

Further, a significant feature of early childhood environmental education involves children experiencing and acquiring various environmental concepts through play (Edwards & Cutter-Mackenzie, 2011; Cutter-Mackenzie, & Edwards, 2006). Even though preschools in Sri Lanka use varied environmental concepts in its early childhood education, the pedagogy of it has not been systematically explored. Hence, the present research also stresses the importance of conducting research on the optimum ways of imparting environmental education to young children.

Globally, postdevelopment research into play-based learning and the role of environmental education in early childhood curriculum have largely evolved independently of each other during the past two decades (Edwards et al, 2011). However, the importance of it to each other and the future of Sri Lanka are unquestionable. Hence, the present study urges the importance of and

urgent need for research on these topics in the Sri Lankan milieu (i.e. practice of early childhood environmental education and ways it can be provided through play-based learning).

Finally, it could be said that practices pertaining to environmental protection thrive on consistency and teamwork. Policy makers, educationists, and preschool teachers should work together in regular professional interactions for the common good of the children and the preschool. If and when possible, evaluations should be carried out in a scientific manner to explore the knowledge, attitudes, and skills pertaining to the environmental protection of young children. Preschool teacher training programs should incorporate culturally appropriate and economically feasible evaluation tools. Evaluation should be ongoing and contain strategies to promote the environment education within young children.

The outcomes of the present study convey that majority of the children in the study displayed pro-environmental attitudes. Hence, the present study could be described as an exploration which outlined the general picture of young Sri Lankan children's attitudes pertaining to the environment.

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