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Towards Sustainability of Future Generation: Exploring Children's Perceptions, Attitudes and Preferences towards Natural Environment

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ABSTRACT

The past few decades have shown that children are facing a trend of 'Nature Deficit Disorder' due to rapid urbanization. This phenomenon affects their current quality of life and in their adulthood later. Therefore, it is crucial to reconnect children with nature to ensure the sustainability of future generation. In order to reconnect children with nature, it is imperative first to understand children's perceptions, attitudes and preferences towards natural environment. This paper presents a review of literature regarding children's perceptions, attitudes and preferences towards natural environment. This review forms a foundation for future interdisciplinary research.

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INTRODUCTION

Previous studies have found that contact with nature during childhood affects their attitude and behaviour towards natural environment in the adulthood later. Frequent experience in nature during childhood influences adult environmental career choices, environmental concern and interest in nature related activities [1], [2], [3]. Rapid urbanization across the world including Malaysia, however, has reduced children's direct experience in nature and has caused the effects known as 'Nature Deficit Disorder' [4]. Children's alienation from the natural world will further disconnect them from nature in their adulthood.

The phenomenon of disconnection with the natural world affects children's perceptions, attitudes and preferences towards natural environment. Children have misconceptions and lack of knowledge on the environment [5]. They expressed negative feelings or biophobia towards natural environment [6], [7] and rated wilderness as the least of their preferences [8]. If today's children show fear towards nature, then how will they manage and protect nature in the future? A generation that appreciates nature, environment, green areas and landscapes will cease to exist if the trend of Nature Deficit Disorder among today's children continue. They will treat nature as something to be controlled rather than protected or preserved.

Thus, it is crucial to explore how today's children perceive nature to ensure the sustainability of future generation. Understanding children's perceptions, attitudes and preferences towards natural environment are vital as a forecast of their attitude and behaviour as an adult later [9]. Children's attitude towards nature is often been measured as connectedness to nature that emphasized on the cognitive and affective attitudes.

This paper aims to integrate literature on children's perception, attitudes and preferences towards natural environment to elucidate new insights on this research area. Children's perceptions, attitudes and preferences towards natural environment, as well as the gaps in previous studies and their relationship, will be explained. The review advocates the importance to study children's perception, attitudes and preferences towards natural environment as they will be the future guardian of the earth. They are the future decision makers, planners and designers.

Methodology:

Journals related to children's perceptions, attitudes and preferences towards natural environment were first identified from online databases; ScienceDirect, SAGE, JSTOR and Taylor. Combinations of keywords used for

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the searches were; children, attitudes, connectedness to nature, connection to nature, perceptions, preferences and natural environment. The selected journals consisted of different disciplines; environment and behaviour, environmental psychology, landscape and urban planning, children's environment and environmental education.

Children's perceptions, attitudes and preferences towards natural environment:

(i) Perceptions and preferences towards natural environment:

Perception is one's attach meaning, value and responses on something, whereas preferences means liking one subject better than another [10]. Children's value on nature has often been explored through their perception. Previous studies have examined children's perceptions towards nature quantitatively using Children's Environmental Perception Scale [11]. The instrument includes cognitive and affective aspects. On the other hand, qualitative studies on children's perception and preferences on nature have explored children's knowledges, attitudes, feelings and behaviours related to nature [7], [8], [12].

The relationship between children's perceptions, attitudes and preferences can be seen from previous studies. Children who have positive perceptions towards nature expressed positive attitudes and feelings towards nature. They also have high preferences to involve in outdoor activities. Children in this group have frequent experiences in nature. Meanwhile, children who have less experience in nature have defined nature in general and vague terms. They expressed fear or biophobia towards nature [7]. Other studies found that children appreciated natural elements that afford them to play in an organized form. They rated wilderness as the least of their preferences of place and conveyed negative feelings [8] than appreciating, caring or enjoyment towards the natural environment, especially with wild nature [12]. Children also perceived nature as dangerous when they have limited experiences in nature [13].

(ii) Connectedness to nature as attitude towards nature:

Attitude is a deep mental perspective towards objects or events [10]. Attitude towards nature is a psychological one and has been explored as connectedness to nature that includes cognitive, affective and behavioural aspects [14]. Other scholars have defined connectedness to nature as an individual's emotional and affective attitudes towards nature and feeling of being a part of nature [15], [16]. The connectedness to nature concept can be explained by Biophilia Hypothesis and Environmental Identity concepts. Biophilia Hypothesis explains that human have an innate affinity for nature and need nature for psychological well-being, while Environmental Identity describes nature as a part of individual's self concept [6], [17].

Recently, researchers from different disciplines have shown interest in the study of children's connectedness to nature, and argued it to have an important role to mitigate environmental crises [11], [18], [19]. They also suggested that children's connectedness to nature influences their interest to participate in nature-related activities [18].

Researchers have previously developed instruments to measure children's connectedness to nature quantitatively. Previous instruments are Connection to Nature Index and Connectedness to Nature Scale [18], [21]. Connection to Nature Index uses a multi-dimensional approach to measure affective aspects; children's enjoyment of nature, empathy for its creatures, sense of oneness, and sense of responsibility [18]. Meanwhile, Connectedness to Nature Scale uses a single-dimensional approach to measure children's affective attitude towards nature [21]. Recently, another researcher has argued that the connectedness to nature scales was a belief of people's connection to nature, not an emotional relationship with nature [20].

Discussion:

Perceptions, attitudes and preferences are closely related to each other. Attitude towards nature influences preferences on liking one object, event or place better than another and plays a significant role to influence behaviour such as the involvement in nature-related activities [10]. However, few studies explained the relationship between children's connectedness to nature and their perceptions and preferences towards natural environment.

Familiarity with natural environment affects children to have positive perception and attitudes, as well as, high preferences towards natural environment. Hence, it is vital to explore how children perceive nature in different environment. Moreover, studies have been conducted on urban children and little is known on the differences between rural and urban children's connectedness to nature, as well as their perceptions and preferences towards natural environment. Other than that, most studies have been conducted in the Western and findings may be different with children in Malaysia.

Different methods have been used to measure how children perceive nature. Both quantitative and qualitative approaches have their own advantages and disadvantages. Even though quantitative instruments provide a solid foundation to determine children's connectedness to nature level, the instruments only measure cognitive and affective attitudes. There is a need for a future study using a mixed method approach to yield more comprehensive and holistic overview on how children perceive nature [22].

The findings urge researchers to investigate further on how children perceive nature, especially in Malaysia, where limited study has been conducted on this research area. The determination of children's connectedness to nature and their perceptions and preferences towards natural environment could ensure ecological friendly rural and urban spaces in the future. Positive level of nature connectedness, perceptions and preferences are important to ensure the future generation of Malaysians that care for the environment and will develop the country in a sustainable way.

Conclusion and implications in Malaysian context:

A study on this research area can contribute to the government's priority in ensuring Malaysians enjoy a high quality of life and making Malaysia a better place to live, work and play, as stated in the Tenth Malaysia Plan. The study is also in line with Malaysia's commitment to enhance Malaysian's quality of life to become a sustainably developed nation. The findings can be applied in green schools design and green space planning to increase the level of children's connectedness to nature.

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