

# Sustainable Planning Approaches: The Need for Child Friendly Urban Environments

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## Abstract

The world health organisation recommends 60 minutes of moderate to vigorous intensity of physical activity every day for children. (WHO, 2010). Urban spaces on the contrary are challenged in supporting or encouraging children's outdoor physical activities which have an impact on their health and wellbeing. This paper presents a review of transdisciplinary literature, pointing out the challenges faced in the urban scenario, the influences of the built environment on the development of children and the need to actively confront these challenges to bring child friendliness into the built environment. It illustrates examples of child friendly environments implemented in various urban contexts. The paper also lists out the policy frameworks and the urban design initiatives put forth by the Indian government. It analyses them and stresses on the need for further and in-depth research of child friendly environments in the Indian context for it to make inroads in policy levels.

## Key words:

Child friendly environment, urban spaces, child development, Indian policies

## 1 Introduction

The World Health Organisation states in its preamble that "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [1]. Decision makers and Planners through their policies and design can govern how one interacts with the environment. As a result, the surrounding physical environment has a significant impact on the mental, social and physical health of all citizens including children. Therefore, the authorities have an important responsibility of making space child friendly. And for the making of a child friendly community, integration of access, green spaces and safety become critical. This can help achieve better social interactions helping sustain natural spaces, thereby improving the quality of life and encouraging healthy lifestyles [2].

## **1.1 Fundamental rights and Global Initiatives**

In the present moment Children's health and future faces uncertainty and threat from environmental degradation in which the capacity of the environment to fulfil social and ecological demands has been compromised. The United Nations recognised the need to invest in the Child's mental and physical well-being and striving to bring in better living standards, adopted the Convention of Rights of Child (UNCRC) in 1989. As a widely ratified and legally binding instrument, India signing up the agreement in 1992, the articles of UNCRC set out Children's rights and how the governments must strive to provide children's basic needs to help them achieve and perform to the fullest of their capabilities at a city level. In upholding the basic and fundamental rights, the right to rest, leisure and to engage in play and recreational activities has been underlined by Article 31 in the UNCRC. The member governments have an obligation to support, provision and promote the implementation of recreational and play spaces which become an important constituent contributing to the betterment of Children's mental and physical health. Aligned with the Sustainable Development Goals, the UNCRC calls for a healthy, safe and sustainable environment for every child. In the act of spurring on cities to commit to improve the quality of life of children, UNICEF came up with the Child Friendly Cities Initiative (CFCI) encouraging the local governments to make decisions in the best interests of children to promote a culturally rich environment.[3], [4]. In addition to a dearth of planning children are not involved in decision making in the community level. Empowering children through community engagement can positively influence the measure of physical activities, improving their social, physical and mental health.[5].

## **2 Why focus on Children?**

### **2.1 Play as a natural disposition**

Children are naturally disposed towards play. Children exhibit a playful personality which goes beyond context, situations and tasks. Children primarily participate through play. And it is the right of a child to play. These playful encounters are motivated from within, with self-imposed goals as children assign their own meaning to objects and behaviour. [6]. Children will play as long as basic survival needs are met. But Children live and play in adult controlled environments. Urban settings are generally not child responsive. There exists a spatial inequality in terms of insufficient play spaces, environmental and physical barriers for a child to play. Children have a right to play, and this is subject to spatial justice. A child's right to play is recognised when provisioning for it. This space for play organises, controls and structures a child's play experiences while offering the right kind of situation to support their mental and physical development. In supporting a child's participation through play by effectively managing time and space in the urban set up through making and preserving children's territories, an optimistic approach is developed in making a better city [7]

## **2.2 Vulnerability and invisibility**

Children have been rendered invisible and powerless in families and societies and their voices have been often neglected or overlooked as a result of age and immaturity [8]. The most vulnerable period of life is childhood. To fulfil their basic needs children are dependent on others to a high degree which makes them vulnerable. The most notable source that makes them particularly vulnerable is that Children are dependent on the decisions others make for them. While adults are enfranchised and independent, children are a disenfranchised group and hence vulnerable and dependent. [9]. Developmental vulnerability can arise from the influence of the surrounding environment like access to schools, parks, playgrounds, housing density and recreational opportunities. Children are dependent on the qualities of neighbourhood which has an effect on child health and developmental outcomes over time. Children, who are developmentally susceptible, are at peril in achieving their true capabilities over time [10]. Supportive mechanisms in a neighbourhood can promote child development in a positive way. in their research found that a good amount of home yard space and reduced traffic levels are associated with reduced levels of developmental vulnerability.

## **2.3 Children's Population in the world and in India**

The number of people living in cities and urban areas has increased noticeably in the last century. Populations of many cities have become more than that of small nations. Rapid and uncontrolled growth has crippled the ability of urban authorities to meet basic physical and social needs pertaining to infrastructure [11]. With a 0.92 rate of urbanisation between 1950 and 2018, an estimated 55 percent of the world's population became urban [13]. The trend is expected to continue where more people are set to be urbanites in the future. This accentuates that the planning and design of urban spaces are critical to achieve efficient functioning of cities. Inclusive planning would be of utmost essence for the wellbeing of all including Children. According to [8], India holds the largest children and youth population in the world. With 365 million young people and 30 percent of the country's population in the age group of 10-24 years, India is the youngest nation in the world.[14]. Children form a large sector of the population living in cities, yet they become a neglected democratic group who are ignored in the planning of our cities. This large sector of the youth population's rights can no longer be neglected. The country needs to invest in its youth for long term benefits. The environmental need of the increasing youth population needs to be taken into consideration when designing the urban spaces. Understanding how children experience urban environments therefore becomes of paramount importance. Many researchers have pointed out the developmental benefits of designing environments that are more suitable to the needs of children.[15] [16] [18][17] [19].

### 3 Middle Childhood

#### 3.1 The age for exploration

The age range of 6 to 12 years is called middle childhood where the child’s world expands to a great degree as they enter school. Increasing physical and motor skills enable children to play games of complex skills like bicycling and other organised games. By age nine they explore the environment and the necessary through bikes to distant points and may use public transportation. [20] [22]. Children are more likely to explore the neighbourhood during the time of middle childhood [23] .

#### 3.2 Places children go in the neighbourhoods

In a survey by [24] the most commonly named destinations were Parks, playgrounds, fields and courts as it allowed children the affordance of friends, climbing trees etc. followed by eateries. Other destinations like friend’s and relative’s houses especially the backyard part of the house was important. Nature destinations like the beach, forest offered affordances like climbing and running and were also mentioned. But there is a lot of literature which shows that Children’s Independent Mobility children’s right to move freely in the environment, walk or cycle and use public transport to reach destinations without adult supervision is challenged in urban areas. [25].

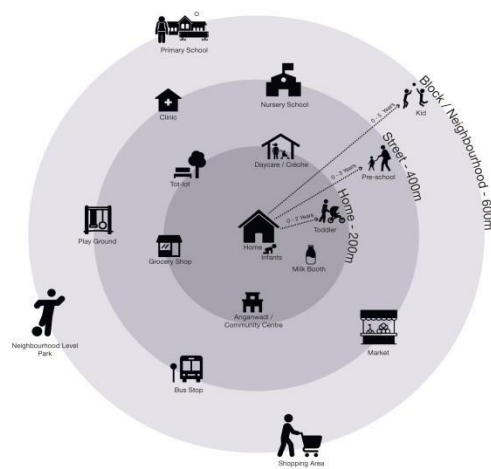


Figure 1: Walking and access range by age (Source: ITCN,2019)

### **3.3 Need for a Child centered approach**

But children are rarely in control of their environments as they live in adult centric and adult regulated cities [26]. Cities when designed have neglected children's needs into account. It has become essential to design environments taking into consideration children's needs and interests so as to support and promote children's abilities and strengths and where child friendliness is an overall quality of a city. Child centered approaches through designing for Children shapes liveable environments making the city more human centric [27]. Though children are recognised as citizens and have their own rights, the arduous search for a childhood city has not been realized.[28].

## **4 Associations of built environment and Children's Outdoor activities**

### **4.1 Socialisation and Interaction**

As stated by [29] Interaction is the basic quality of a city and city life and not just place. Children love it when the city allows them free movement through space [30]. Children explore their surrounding physical environment and the planning and design of their neighbourhood can affect them [24] . Acting as their immediate physical surroundings, neighbourhoods can significantly influence skills like motor development and social and emotional wellbeing [11]. Children have less mobility than adults and spend more time in their immediate surroundings and thus neighbourhood can influence behavioral issues like physical or sedentary activity and diet [31]. Children like to interact with and explore rich and varied environments and play with interesting materials. Not only does the immediate environment act as a primary medium for learning but allows them to socialise. Exposure to physical settings leads to understanding social norms and regulates behaviour. Rich and diverse built settings provide opportunities for growth and their exploration is crucial for cognitive, social and physical development [32].

### **4.2 Diversity and increased playability**

According to Moore's study the more diverse the physical setting is the more is the interaction between the child and his environment [33]. According to [34] there is an association between the degree of playability and the opportunities that the physical environment provides for learning in an exciting and challenging way. Neighbourhood destinations provide room for children to be physically active and to engage in play. Access to destinations like park and playgrounds encourage physical activity in a positive way, while accesses to other destinations like fast food outlets and convenience stores have resulted in an unhealthy diet. [35]. An understanding of how Children access and regard their neighbourhood, their likes and dislikes

and their uses of destinations would help planners and urban designers build a better environment that can encourage healthy behaviour [26]).

### **4.3 Obesity**

(Booth et al, 2005) found that obesity in children are linked to parameters like land use, sprawl and reduced activities like walkability, play and level of deprivation. Interventions required at the neighbourhood level were to focus on elimination of barriers and create accessible neighbourhoods. Accessibility to recreational centres, food stores and human centric neighbourhoods not designed around cars were some of the approaches that were recommended. [36].

### **4.4 Mental Health and built environment**

Built environment can affect mental health and has an influence on behavioral factors like social relationships, personal control, and restoration from stress and fatigue. Better health is associated with control over surroundings. Feelings of ownership over a territory are associated with a fear of crime and crime levels.

Scarcity of safe play spaces, cage children in their homes. These restrictions discourage play opportunities and social interactions with others, and encourage interfamilial conflict [37]

### **4.5 Physical activity and the built environment**

The built environment can affect a child's physical level of activity. When walking, biking and play is supported by the built environment, it promotes child development in various ways. Environments achieved through strategically locating schools, parks and sidewalks in a neighbourhood can help children reach the recommended levels of physical activity. Street grids connecting many intersections can provide many route options. Dense communities with higher land use mix and less car dependency, sidewalks that connect streets, green spaces, and accessible recreational spaces and can be adopted to increase walkability and biking to destinations.[38]. Repurposing spaces to include play along the way strategies, pop up play spaces, bicycle parking, spaces to socialise can increase possibilities of children's physical activity[39].

## **5 Barriers to Children's outdoor activities**

### **5.1 Urbanisation**

Urbanisation has an impact on many aspects of living, especially health in terms of overcrowding, pollution and stress related illness [40] and economy [41]. Urbanisation has affected and limited children's movement at a global level creating so called pattery and overprotected children [42] and the bubble wrap children who fail to have the resilience and skills to use the environment competently and independently [43]. Children's freedom to move about and roam has been decreasing in the urban areas. Factors like traffic, pollution, density and unresponsive environmental conditions which occur as a result of urbanisation have drastically changed the way children move outdoors. [23, 25].

### **5.2 Car dependency**

Increase in car use has decreased the amount of walking and cycling activities by children. Long term car usage can affect the health of children. Increase in car ownership and increase in car use can result in lesser physical activities in children [44, 45]. Studies show that an increasing number of children are taken by car to schools. Studies in Europe like Britain, Scandinavia and Italy show the same tendency for both lower and upper grade children.[44]. Activities like sports, music and dance classes post school hours where leisure time is institutionalized and organised is an increasing trend while children hardly have time for free play. It was found in a study that the main mode of transport for these activities is the car. Parents who owned a car tended to use the car for transport. The distance at which these activities took place was an important variable influencing the usage of cars as a means of transport [46] .

### **5.3 Parental perceptions of risk**

Parental perception about public spaces not being safe for children increased significantly in the late 1990s. As a result of these concerns, Children's mobility was restricted, and their outdoor activities were increasingly being supervised [47]. Safety concerns of parents were influenced by incidences of traffic accidents and strangers' attacks on children. [25]. Due to the increase in car ownership and traffic, there were fewer pedestrians (Children and adults) on the streets, making the streetscape abandoned and lonely, encouraging strangers to carry out anti-social activities. The busier the roads became, the lesser was the play territory for children as parents restricted their independent mobility [25]. Play eventually was centered around home and independent mobility to school diminished by a significant degree. [47].

## **5.4 Traffic**

Noisy, crowded and dangerous settings inhibit social interactions. Children who live near traffic prone areas are associated with compromised social networks and lesser play. Their social and motor skills are also affected. Shared green spaces and gathering spaces are known to promote informal contacts and strengthen social support. Walkable human scale neighbourhoods with shared spaces like parks and tree lined streets encourage healthy behaviour and promote social ties [48].

## **5.5 Air quality**

Air quality and air pollution have been associated with mental health outcomes. Presences of toxins in the air have neurological and cognitive impacts. According to Global burden of disease 2017, elevated levels of air pollution in addition to causing acute respiratory problems, lead to death, reducing life expectancy [49]. According to UNICEF, almost 300 million children live amidst the most toxic levels of Air pollution which has been violated six or seven times than permissible levels. Air pollution threatens lives and is the cause for death of 6 lakh children every year. Vehicle emissions among other sources tend to be a major factor causing air pollution. Young children breathe faster than adults taking in air more according to their body weight [50]. In India, emerging economies and increasing urbanisation have contributed to a hike in ambient air pollution levels in urban spaces, increasing the risk of respiratory ailments in children. Violations of permissible limits of suspended particulate matter are common in many cities in India where key pollution sources are vehicular traffic and burning fossil fuels. There is an urgent need for improving the quality of air when planning urban spaces. Policies need to target reduction in air pollution levels to see a significant improvement in children's health [51].

## **6 Theoretical frameworks regarding Child Friendly Environment:**

These frameworks broadly follow two approaches.

### **6.1 Rights based approach:**

This focuses on Child rights and urges local governments to promote the rights of children by making decisions in their best interests. Article 12 of the United Nations Convention on the Rights of the Child (CRC) made a clear commitment regarding respecting and hearing Children's rights. Following this the 1992

Earth summit's priority areas included children's participation in their living environments and introduced Agenda 21 that focused on strengthening the role and rights of children.[52]. Child friendly Cities Initiative



(CFCI) programme of the UNICEF, has driven child's right and promoted Child's participation in a global way, connecting Children's right movements with the Children's environment [53]. Launched in 1996 along with other agendas like Growing up in Cites (UNESCO) and safer cities (UNHABITAT), CFCI came up with Indicators like health, care, protection, education and inclusivity, to be included to achieve a nondiscrimination, stimulating and culturally rich environment [54, 52]

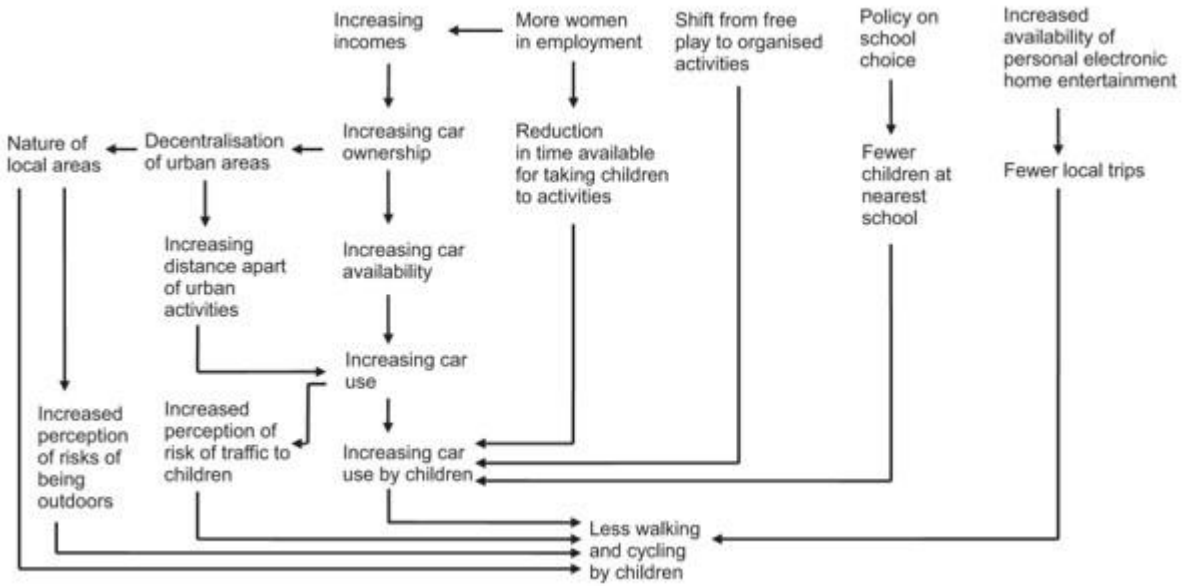


Figure 2: Factors contributing to decrease in walking and cycling levels of children

## 6.2 An Approach which is Environment based

Focusing on physical and social environments, researchers, through academic and theoretical research have tried to understand and define criteria for certain frameworks for the concept of Child friendly Cities. In the project growing up in cities [56] providing basic physical and social services, diversity in activity settings, and the ability to move freely without physical dangers were mentioned by children. asserted that variety in environmental resources and opportunities to play and explore are two criteria for child-friendly areas.[58] came up with the Buller by model which was based on improving mobility for better development of children and evaluation of child friendliness of the environment by two important criteria: Children's possibility for Independent mobility and realisation of environmental affordance [59]. , proposed a theoretical concept on place friendship which is based on the comprehensive interdisciplinary review of literature on environmental Child friendliness. The six dimensions of place friendship as proposed by Chatterjee are Care and respect, Meaningful exchange with places, Learning and Competence through place experience, Creating and Controlling Territories, Having secret places and Freedom of expression in place.

A framework for assessment of Environmental Child Friendliness was developed by Dr. Horelli. Acknowledging how the built environment influences Children's [57, 33] development, the framework included ten normative dimensions which are Housing and dwelling, Basic services, Participation, Safety and security, Family, peers and community, Urban and environmental qualities, Provision and distribution of resources and poverty reduction, Ecology, Sense of belonging and continuity, and Good governance. [60].

## **7 Best practices**

The following examples show key findings of how cities have tried to achieve sustainable and inclusive child friendly environments

### **7.1 City level best practices**

#### **7.1.1 Rotterdam:**

Rotterdam, a city in the Netherlands, experienced an out migration of middle-class families and realised the need for cities to be attractive to young families and children. As a result, the Government set up a Child Friendly City program in 2007 in which an urban Planning method called "Building Blocks for a Child friendly Program was developed". It aspired to improve the city as a place where families can reside by building up the economy and improving the quality of life for children. The programme identified four building blocks housing, public space, amenities and routes to achieve a family Friendly city. Interventions like better parks, better routes for walking and cycling, wider sidewalks and child participation process resulted in an place that families found attractive to live in. [61, 52]

#### **7.2 aProCh**

A Protagonist in every CHild, Design for Change, Gujarat, India: A community-based initiative started in Ahmedabad, Gujarat, aProCh encourages creation of Child Friendly spaces where a child has many opportunities to explore and play. Main initiatives are addressed are: Street smart: Where the streets block vehicular movement for a day, Moving experience: Where the project partners with other facilities to accommodate spaces for poor children, City on cycles: to promote cycling, Parents of the park where adult take initiatives to engage children with creative activities and City as my Landscape : Where Children are encouraged to design and be visible.[52, 62].

## 7.3 Urban scale initiatives:

### 7.3.1 Thailand

” The walking Neighbourhood” in Thailand where the Child as a guide takes participants around curated spaces in the city. Thailand’s strategy on Child Friendly Local Governance provides directions to local governments and urban authorities on how to address issues on child rights. Indicators are provided to realise a child Friendly city.

### 7.3.2 Global Design Guidelines and indicators

Worldwide, a number of organizations have come out with design guidelines and indicators of Child friendly cities. One of them is The National Association of City Transportation Officials - NACTO which has come out with guidelines on ‘Designing Streets for Kids’. Capturing global policies, programs and best practices, the guide promotes enjoyable and safe streets for both Children and caregivers [63].



Figure 3: Ten actions to improve streets for children

### 7.3.3 Indian Initiatives

In Karnataka an Indian NGO “The Concerned for Working Children” came up with India’s first “Children Ward Sabha” which allowed school, working and migrant children a platform to express their issues to urban and local administrators. In Orissa a campaign titled “Humara Bachpan” encourages healthy environments which are not only safe but also creates platforms for children to vocalise their issues.

## **8 Policy framework in Indian context**

Though Children are a significant part of the population, they form an under-represented part of our demographics. Until recently the concept of children as stakeholders and contributors to society has been grossly underestimated.

### **8.1 National level policies**

#### **8.1.1 National Policy for Children 1974**

The Government of India declared Children as the ‘nation’s supremely important asset’ while drafting the National Policy for Children in 1974 . The policy committed to secure the rights of Children and endeavors to place the programme for children in a prominent way in all national plans.

#### **8.1.2 National Policy for Children 2003**

This policy promotes multi sectoral, sustainable, Inclusive and long-term approach, which is essential for children’ safety and their healthy development [64].

#### **8.1.3 National Charter for children 2013**

Trying to ensure the healthy growth of children and their development the charter also protects them from all forms of abuse and violence [65].

#### **8.1.4 National Plan of action for children 2005, 2016**

This plan promotes Survival, Health and development, protection and participation [65, 66].

#### **8.1.5 National Policy for Children (2013)**

According to this policy, anyone under 18 years of age is regarded as a child. The policy realises that children have needs different from others. It also realises the need to provide equal opportunities for the development of children and calls for collective action across levels and sectors of governance to achieve children’s needs.

## **9 Urban Development Programme in India**

Child friendly Smart Cities Initiative (CFSC) 2014: The guidelines for this Mission look at Urban Planning and Urban Policy to design a city, involving children. Some of its features include Creation of destinations which are walkable, preserved open spaces that could also be developed, housing and Inclusivity.[52] Atal Mission for Urban Rejuvenation and Transformation (AMRUT) aims to develop basic Infrastructure in 500 cities. It also endeavors to create green spaces, parks and recreation centers which can be upgraded,

especially for children [67]. Swachh Bharat Clean India Mission: Aims at improving sanitation facilities at City level and State.[50]. Hriday: This looks at Heritage conservation linking it with the city's infrastructure. Pradhan Mantri Awas Yojana (PMAY): Looks at projects like Affordable housing and basic Infrastructure. National Urban Livelihood Mission (NULM) has guidelines to provide shelter with essential services to the urban homeless. Infant, Toddler, Caregiver-friendly Neighbourhood [68] has come up with many parameters to achieve ITC friendly neighbourhoods which include Policy frameworks, Design Guidelines, Policy workbook and Evaluation and Monitoring metrics. Design guidelines have been provided for tot lots, streets, playground, home zones and the neighbourhood.[70]. The Nurturing Neighbourhood Challenge, 2020 an initiative of the smart cities mission, encourages designing neighbourhood-level improvements promoting health and well-being of the young and their caregivers. [70, 69].

## **10 Discussion**

In the policies that were released initially, the aspects of the built environment have gone unobserved with regard to health and development of a child. Children were considered part of the homogeneous group and their voices were not taken into account. The recognition of their needs and rights was broadly confined to the health, education and nutrition sectors. They lived in an environment created and maintained by adults and decisions were made for them. But of late the influences of the physical surroundings on the developmental outcomes have been recognised and there is an effort in policies to issue guidelines on the same. There have been efforts to achieve Child Friendly Governance in our country. But these processes are in a nascent stage. Through urban development programs like Child Friendly Smart Cities (CFSC), AMRUT and PMAY there is an emerging understanding as to how built environments are instrumental in shaping childhood developmental outcomes. [70]. There is a promise of ideas and mechanisms cities are employing to make children an integral part of urban development. Parallely there is a burgeoning need for data on the parameters related to the issues of children in Indian cities. And there is a dearth of research that needs to be undertaken to understand aspects regarding quality of life in the Indian context. Different influence variables need to be assessed. Gathering and assessing comparative information of child friendly parameters across cities in India could throw up meaningful insights. Longitudinal and cross-sectional studies can establish cause effect relationships. Effective research can have an impact on a paradigm shift in urban strategies across the country. The insights found could be used as a tool for policy making which can support the development of local urban strategies [52]. Partnership at various levels including involvement and coordination of various actors and sectors for comprehensive research can lead to positive outcomes.

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