Understanding Social Determinants for Children in Difficult Circumstances: An Indian Perspective

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Abstract: *Background:* Socioeconomic factors play an important role in predicting the health of people of a nation. Inequity in income and distribution of materials and services, and social exclusion make a nation hollow from within. Benefits of national facilities and supply do not reach many communities of uneducated and low-profile population. Recognition of social determinants of children's health, and acting upon the issues through legislation and policies would promise to build a healthy nation with people of standard health.

Method: Information has been collected from the literature available on social determinants and child health, and key challenging areas have been identified for opportunities of intervention.

Result: Persistent poverty and lack of education pose significant negative impact in segregation and marginalization in society, schools and workplaces. Children of such underprivileged class are either deprived of food, education and parents' care, or leave home for sheltering on street in quest of facilities for meeting their daily needs. In such inadequate circumstances, these children often become victims of violence, crime and abuse. Girls are trafficked and sold for prostitution. Though such children develop a strong survival spirit, their health is seriously affected by extremes of societal and environmental conditions.

Conclusion: Improvement in income and education can control intergenerational inequity in life-course and professional achievements. Integration of social pediatrics for measuring the impact of social determinants, which is already prevalent in many developed countries, would be important to lower the extent of illness. This present report describes societal factors affecting children's health in India, government policies conceived and their success-to-date in curbing the figures of child morbidity and mortality.

Keywords: Children's health, adverse environment, inequality of income/education, social pediatrics.

1. INTRODUCTION

"The conditions in which people are born, grow, live, work, and age, including the health system" are the social determinants defined by World Health Organization (WHO) [1]. The key indicators such as insufficient food, unsafe drinking water, inadequate housing, lack of access to education and health care, exposure to conflict or other adverse conditions of social environment, etc. can have a devastating impact on children and their families. The importance of social context of family-health, particularly in children, was understood by Virchow [2] and Jacobi [3]. However, revolution on social determinants of health was initiated in 1977 by the European Society of Social Pediatrics [4]. The Commission on Social Determinants of Health, WHO, has addressed crucial issues such as prevention of mortality and morbidity, improvement of health status, and mitigating inequalities in health outcomes and utilization of health services [1].

Social variables that impact health are called social determinants of health. Social epidemiologists consider that social and cultural variables, including socioeconomic status (SES), race/ethnicity, gender, immigration status/acculturation, poverty/deprivation, social networks/support/cohesion, social discrimination, psychological work-environment, income, education etc. have documented association with health at multiple stages of life-course and through robust interaction of variables [5]. Children of families at the unfavorable end of the spectrum experience a number of challenges including interpersonal violence, family-turmoil and environmental hazards that increase risk of injury. They engage in more health compromising behavior, report lower subjective well-being, and exhibit more social-skill deficits, and emotional and behavioral problems such as fear of stigmatization and marginalization [6, 7].

Disparity in income, goods and services results in unsatisfactory health condition of the economically and socially deprived sections. "Children in difficult circumstances" is characterized by their specific social, economic and geo-political situations [5]. The health condition of these children can be substantially altered only by a social determinants approach, which may improve their daily living conditions, help to tackle inequitable distribution of power and resources, and adequate government policies to address the developmental challenges [8]. The United Nations

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Millennium Development Goals have considered the dimension of social determinants in all health forums. In India, government policies, establishment of non-government organizations (NGO) and public-private partnership programs have implemented actions at the grass-root levels. Through comprehensive health and development projects, these agencies aim to uplift the socio-economic and health status of vulnerable communities which constitutes up to one third of the population living in remote, difficult and underprivileged areas where daily basic needs are not available. However, despite several efforts and achievements, India's development plan has not changed the standard of life of this population. The continuing poverty of the rural-poor and street-population are mainly due to disparities in income, education, health-care and gender-equity [9]. Children growing up in these circumstances continue to face diverse and severe challenges.

The present report will highlight the Indian perspective of the magnitude of multiplexed social determinants, including education, income, abuse, health and environmental status. The report will focus on challenges and opportunities for intervention including social pediatrics, with supporting evidence presented from publicly available literature in this area. The purpose of this review is to present the current health and development scenario of children living in difficult circumstances. In this direction, the discussion on social determinants of tribal and street-life in rural and urban setting of India has highlighted the root cause of vulnerability of children of the two diverse populations with commonalities of deprivation [7]. The deepening in the SES-health relationship, measured in terms of child health and infant mortality in the 21stcentury, is the first sign of a continuing inequality trap. Further understanding and investigation are required to intervene through corrective actions and take preventive action for driving down inequality in SES and health, especially for the under-privileged population. Furthermore, we hope that the insights presented here into inequalities driven by societal and demographic segregation and their impact on child-health will attract policy makers and government to direct improvement actions towards the future lives of today's children and tomorrow's nation.

2. MATERIALS AND METHODS

The present report has been generated based on the strand of literature available in government reports, respective departments' websites or as a public document, and other freely accessible publications, such as the MEDLINE and PubMed databases on reports pertaining to social determinants of health on children living in difficult circumstances. Web search was conducted on this particular theme using the following keywords: "social determinants of health", "child labor", "child abuse and crime", "child morbidity and mortality", "health effects of inequality in income and education", "challenges and opportunities" and "social pediatrics". All downloadable records available in English language were consulted for drafting this manuscript.

3. RESULTS AND DISCUSSION

3.1. Social Determinants

Education and income are the yardsticks of measuring health status of a society. Poor education can fetch a job with low income for a family, which will eventually establish a trend for generations. Societies with such low-income families suffer from multitude of complex health problems, which culminate in high mortality. Inequality in education and income not only determine the health of a society but also inculcate abuse and crime among the children living in distressed condition. Therefore, understanding the impact of poor education and income status on health of a society may promise to establish facilities for improvement of the overall health of a society and in turn, the GDP of a nation.

3.1.1. Inequality of Income and Education

Income, education and health are interdependent. SES of the parents has always been one of the strongest factors affecting the child's educational attainment [10]. Education is one of the most reliable tools by which a society can improve the lives of its less advantaged youths and their families, and their chances at becoming productive and self-reliant adults, and therefore, contributing members of the society. Income disparity plays a key role in expanding the gap in the ability of low- and high-income parents to support education and enrichment activities of their children. Understanding the consequences of children's educational attainment and cognitive skills and developing a feedback mechanism on these traits may help decreasing persistence of inter-generational inequality [11].

Children from affluent families of the society always enjoy greater benefits and advantages of education, healthcare and skill development than those from low income families. At a time of spiraling income inequality, schooling can significantly improve

the life-chances of children of low-income families. Greg Duncan and Richard Murnane [12] concluded that targeted interventions and support can significantly level the playing field between poor children and their more fortunate peers, whereas the educational inequality may result in losing students' opportunity for upward economic mobility that has been a defining feature of developed nations. The United States of America (USA), known to be the land of opportunity, is also going through the stress of inequality and quality of education [13], which proved that money matters in a variety of ways for children's long-term success. In addition to growing differences in the resources available for children of poor and rich families, declining family resources has accentuated maternal stress, mental health, and parenting in low-income families.

Globally, increasing income-inequality has led to greater disparities in education-quality and schooling opportunities between the rich and the poor. The educated and high-income parents' thought on their selection of residences and schools is practically supported by their income and awareness to help their children acquire skills and knowledge beyond school syllabi, whereas uneducated low-income parents lack the resources to extend similar support for their children. Furthermore, differences between schools serving children of high- and low-income group reinforce the trend towards greater inequality in outcome. Income-based segregation of neighborhoods and schools due to growing inequality of family-income has affected the children's educational attainments in developed nations too [14]. Technology-based virtual education has accentuated the inequality even further due to inability of low income group parents [15]. The UNICEF report looks at the bottom-end inequality of income, educational achievement, self-reported health and life-satisfaction**,** which demonstrated Denmark at the top of the overall league table with the lowest inequality among children, while Israel ranked lowest across all domains [16].

In India a significant ratio of children are deprived of education mainly due to poverty and less accessibility to educational services, and that forces them to be looped into the social evils of child labor and crime. The Indian education saw significant improvement during 11thPlan (2007-2012) with substantial increase in the number of primary and upper primary schools. Every child has a right to elementary education of satisfactory and equitable quality which fulfills certain essential norms and standards. However, many children remain illiterate because primary education has not been made 'compulsory', and many, though have completed primary section, are very poorly educated due to inadequate facilities. The net enrollment ratio in upper primary level is also not satisfactory [17].

Besides SES and family income, parents' educational attainment plays a pivotal role in children's educational achievement and success. Parents' education greatly determines the family income. Education and parenting practices are also central predictors of children's accumulation of cognitive and socio-emotional skills throughout the life-course, which directly shape up children's schooling and future employment opportunities. Parents with higher levels of education have more socioeconomic resources and can spend quality time with children, as compared to parents who are unskilled and do labor-intensive work which binds them back from doing so. The affluent parents with higher education are better aware to orchestrate children's overall skill at the tender age, which explains key differences from their parent-child daily routines as compared to low-income group. Collectively, lack of parents' education may be considered as the most important cause of their wards' inattention in schools and general apathy towards education.

Low level of an individual's education leads to employment in low-wage group and furthers the inequality in SES. Low family-income is a key factor for children attending a school of low profile having teachers with poor skill. Practically, good teachers leave such schools due to limited educational gadgets such as computers, low wages and the poor cognitive skill of the children attending such schools. Material resources/supply affect children's life chances, especially in a context of increasing labor-market competition and rising tuition fees for school/university education. The children from high income group attend schools equipped with better infrastructure/accessories required for catering good education. Children from low SES neither get toys/books at home nor in schools for their cognitive/intellectual development. The material resources available in these schools are highly insufficient for motivating children born to illiterate parents, which results in low enrollment and high drop outs [7, 18]. Although rapid urbanization has improved the living-standard of so-called low-income groups, attending a good school with better facilities is still beyond capabilities and dreams of such children due to constraints of higher tuition fees and conveyance expenses.

Furthermore, children accompanying parents at workplaces do not enroll in schools, and rather develop interest in similar work playfully, and get involved into similar occupation of low-income, and thus intergenerational low SES continues. In India, massive drive towards real estate development and construction work has drawn a large section of such marginalized families, both parents and their children towards labor work, in a similar way. In the era of DNA-fingerprinting and tailoring individualized therapies based on gene expression, finger prints/thumb impression is the only way of authentication of documents/money-exchange applied to uneducated labor-groups. Policy-sketching and development-programs are yet to be brought in by the government, which shall be attached to/implemented by the public/private employers for educating such labor-group. Evening/night schools were introduced for the illiterate adults in the very 1st five-year plan in India. In 1988, implementation of National Literacy Mission (NLM) facilitated 127.45 millions' literacy by the end of 10th Plan [19]. The Government of India (GOI) has introduced *Saakshar Bharat* and *Scheme for Support to Voluntary Agencies for Adult Education and Skill Development*, during the 11th Plan. Although the 2011 census revealed remarkable strides with 8.14% literacy growth, the overall quality of education is still held back due to poor educational attainment of children from low-income families.

Children growing up in affluent families score higher on many dimensions of school education. As children tend to be completely dependent on their families to provide what they need for healthy development, lack of access to opportunities of multi-dimensional learning builds a gap in the foundation stage itself [20, 21]. Parents spending more (quality) time with children help in building their self-confidence [22]. Thus untangling the precise effects of a multitude of family-related factors such as income and expenditures, family-ties, time, and language-use would certainly minimize the disparities in children's readiness and success in school. An income supplement would significantly improve the early academic achievement and school attendance in families of low SES.

So far the arguments cited above indicate a significant relationship between a family's position in the income spectrum and their children's academic achievement. Children from affluent families with better educational attainment and achievement will more likely become rich, which may produce risk of an even more unequal and economically polarized society. Therefore, it is clear that increase in family-income inequality will contribute to increasing gaps in educational attainment between children growing up in low and high-income families. Some of the mechanisms concern family life directly, while others concern growing isolation of low-income children in high-poverty schools [23].

3.1.2. Child Labor

Child labor is the practice of engaging children in economic activity. According to the International Labor Organization (ILO), "born to parents who themselves were uneducated child workers, many child workers are forced to continue a tradition that leaves them chained to a life of poverty" (ILO, United States Policies to Address Child labor Globally, 2010). As per a recent report, India has the largest number of child workers under age 14 [24]. These children are forced to work for nearly eighteen hours a day, and often suffer from malnutrition, impaired vision, deformities from sitting long hours in over-crowded work places and other deadly diseases [25]. They are often forced to lead solitary lives away from their families, deprived of meaningful education and training opportunities that could prepare them for a better future. In addition, nearly 85% of child labors are hard-to-reach, invisible and excluded, as they work largely in unorganized sectors of rural and urban settings, within the family or in household-based units, agriculture, hazardous industries, small scale workshops, etc. Migration and rapid urbanization have forced a very large number of children onto the streets, who survive by begging, vending, scavenging, rag picking, etc. [7].

Child labor denies the child of his/her basic right to education and pushes towards future employment in unskilled jobs with exploitative wages. This leads to the creation of an unskilled adult labor force which causes early physical decay, economic insecurity, poor life-course and ultimately high poverty [26]. GOI has multiplied its efforts to address the needs and rights of exploited children. Still, the issue remains grave and demands more rigorous measures to eliminate the social evil of child labor and poverty, and promote educational opportunities for all such children.

3.1.3. Abuse and Crime

"Safety and security don't just happen, they are the result of collective consensus and public investment", as was stated by Nelson Mandela [27]. Unfavorable environment in the family and society often creates violence, which thwarts hopes of economic and social development. Children who are deprived of the basic

rights to live with dignity are subjected to various exploitations such as rape, corporal inflictions, trafficking, drug abuses, violence and forced prostitution, to name a few. These children are more likely to become juvenile delinquents and develop anti-social behavior [28, 29]. Psychological abuses also result in developmental delays, memory lapses and inability to control anxiety [30, 31]. Physical abuses due to family violence may prompt the child to leave the family forever. The magnitude of the problem of child abuse and exploitation is so gigantic, the causes so complex and confounding, the resources so limited, the indifference and unconcern so wide-spread and the states' unwillingness to act in a determined manner so obvious, that there is an all-round disappointment and despondency [7, 32].

Sexual abuse of children has been defined as the involvement of dependent and immature children in sexual activities they don't fully comprehend and to which they are unable to give informed consent. Sexual abuse increases risks for psychosis, anxiety, substance abuse, and personality disorders in children [32]. Clinical disorders at adulthood and childhood remained significantly higher among children with a history of sexual abuse, with greater risk for psychopathy. Sexual abuse may even cause recurrent miscarriage, birth with genetic impairment, and/or early onset of malignancy in gonad.

In India, there has been an alarming rise of crimes against children in difficult circumstances including violence, trafficking of minor girls, buying and selling of girls for prostitution. Incidence of juvenile crimes such as theft, hurt, burglary, and gambling and other prohibited acts are also increasing. The percentage shares of juveniles apprehended under the age groups 7-12 years, 12-16 years, 16-18 years are 3.3%, 32.5% and 63.9% respectively. About 57% of them belonged to families with low annual income. Out of the total juveniles involved in various crimes, 18.1% were found to be illiterate and 37.8% had primary level education [17].

3.2. Health-Impact of Income-Inequality

An association between SES and health has been observed for centuries across different societies for a diverse range of health outcomes as an independent effect or in combination with education, income and occupational status [33, 34]. In his work, Michael Marmot [35] states "Inequalities in health arise from inequalities in SES. Small differences in society result in small health inequalities; large differences result in large health inequalities". Parent's education, income and occupation mutually influence and interact with one another over the life-course to shape up children's health outcomes [36]. Therefore, improvement in education is important to enhance the health prospects of disadvantaged children [37].

It is experienced that the occupational gradient vanishes once education and wealth are controlled for, and that acts as a preventive measure for health habits and nutritional status which are more important to control in infant mortality than medical services [38]. The probability of being stunted, wasted or underweight depending on ethnicity and place of residence is found insignificant when socioeconomic characteristics and geographic conditions were considered, which demonstrated that the racial and ethnic disparities in access to health care can be fully accounted for by the fact that minorities are worse off in almost every socioeconomic dimension as applied to analyzing self-reported health status [34, 39, 40]. The status of housing, education and labor-characteristics of the people live at rural area indicate an index of wealth and their SES, and health disparities.

The plausible disparities in income and estimated elasticity, contributions or correlation of different tentative explanatory variables on health are well known. The factors that affect access to health facilities have changed to parent's education, wealth and the presence of health insurance in the present era. However, the degree of child health inequalities due to income inequality will be persistent in the future, which will mechanistically affect the future labor-status and educational attainment [40]. Developing economies have tried to gauge to what extent SES influences health through racial or regional disparities on some health achievements.

In India, many of the low-income groups have no legal status/identity, as they are mobile and belong to cyclically disadvantaged communities. Without legal status, they are often denied health care at public hospitals. A substantial impact of social networks and social support on physical and mental health outcomes by conferring generalized host resistance to a broad spectrum of illness to functional outcomes including cardiovascular disease, cancer, psychiatric disorders and neuro-endocrine regulation has been documented [41-43]. Major illnesses such as depression or HIV can be a potent trigger of changes in social networks and social support, which can be further augmented by circumstantial family-violence.

3.3. Morbidity and Mortality

The level and quality of education have direct link with mortality and morbidity [44, 45]. It has been reported that low-income parents may get addicted to alcoholism and smoking to buffer themselves from poverty-related stress and depression [46]. Psychosocial stresses caused by income inequality leads to social comparisons of the inability to participate fully in the society to attain normative standards of consumption [47]. At the workplace, the psychological work-environment, including job-security, job-demands and stress, and decision latitude, is synergized by occupational exposure to chemical toxins, radiation, physical injuries, and abuse by supervisors. It is suggested that persistently low occupational status measured at multiple time-points is associated with worse health outcomes [48].

Increased malnutrition levels are noticed in every nation among its indigenous and the poorest quintile. Prevalent malnutrition is reported among indigenous populations where strong socioeconomic disparities resulted in prevalence of stunting, which was at least three times as high in the poorest deciles as compared to the top decile [49]. Malnutrition in children living in disadvantaged families leads to high morbidity and mortality. In India, ~26 million children are born every year of which 48% under age 5 are stunted; 19.8% wasted; and 43% underweight for their age. The percentage of underweight children in the lowest wealth index category (56.6%) is nearly three times higher than that in the highest wealth index category (19.7%) [17]. Anemia is one of the crucial health problems among mothers and children of underprivileged families. High rates of maternal under-nutrition measured by low BMI and anemia adversely affect the health and survival of the newborns. Percentage of children with severe anemia among severely anemic mothers was nearly seven times higher than that of non-anemic mothers. Micronutrient deficiency is another important contributor to childhood morbidity and mortality [50].

Underprivileged children largely live with HIV/AIDS/other infections in difficult circumstances such as foster residence or as victims of domestic violence and abuse/sexual abuse/natural disasters. The overall number of HIV infections has decreased from 2.44 millions in 2008 to 2.40 millions in 2009 as evidenced from the 2008/09 HIV estimates. However, the percentage of HIV infections for 0-15 year olds has increased from 4.20% in 2008 to 4.36% in 2009, indicating increased number of HIV infected children, which is mostly influenced by lack of awareness and education among disadvantaged people [17]. Nonetheless, life of the street-dwellers is highly compounded by automobile-exhaust, non-availability of water for washing and safe-drinking, non-availability of sanitary hygiene and absence of safe venues for physical activity, which not only jeopardizes an individual's immediate personal environment, but also affects the future children and pregnancies [51].

Early childhood, that is the first six years, constitutes the most crucial period in life, when the foundations are laid for cognitive, social and emotional language, physical/motor development and cumulative lifelong learning. Children under three years of age are most vulnerable to the vicious cycles of malnutrition, disease/infection and resultant disability. Protein energy malnutrition and micronutrient deficiencies directly affect children's physical and cognitive growth, and increase susceptibility to infection and genetic diseases [52-55]. The poor-rich risk ratio is 2.5 for infant mortality, 2.8 for under-five mortality, 1.7 for underweight children and 2 for total fertility rate [56].

Although there have been substantial advances in life-expectancy and disease-prevention in the 20th century through implementation of vaccination at primary health centers, these systems provide little protection against financial risk, and most importantly widespread inequality for the underprivileged population in many countries, who have much higher levels of mortality, malnutrition and fertility than the rich. Failure to protect children has serious consequences for the physical, mental, emotional and social development of the child, with consequences of a loss in productivity and quality of human capital for the nation. In order to achieve effective child protection there is a need for lateral linkages between the government and non-government agencies for defining the strategies towards betterment of child development. Major shortcomings and gaps have been revealed in existing child protection schemes and their implementation at all levels of the Ministry of Women and Child Development policies and programs in India. Inadequate outreach and funding resulted in marginal coverage of children in extremely difficult situations. Ongoing large scale rural-urban migration and inter-state/intra-state transfer of children especially for their restoration to families creates an enormous variety of problems related to social dislocation, lack of shelter and rampant poverty. There has been very little interventions for children affected by HIV/AIDS, drug

abuse, militancy, disasters, abused and exploited children and children of vulnerable groups like commercial sex workers, prisoners, migrant labors/ population, etc., and for children with special needs, particularly the mentally or physically challenged [57].

4. CHALLENGES AND OPPORTUNITIES FOR INTERVENTION

Children represent the future of society, and their health is an important yardstick for sustainable development of a nation. Children's health achievement is positively associated with family income, education, urbanization and medical and public resources. In the recent computer-driven technological era, the mathematics, science, and language skills of poor economic groups lag far behind in every country. Moreover, the rising economic and social inequality produced by techno-logy and globalization has weakened neighborhoods and families in the developed nations, where student-composition from high and low-income groups does matter for success. Association of school-children from the respected income-group poses another concern of achievement. The weak cognitive skills and behavioral issues of many low-income children have a negative effect on their classmates' learning. Therefore, educational institutions have to be challenged to enhance their facilities and resources for poorer children if they are to lead productive and fulfilling lives in the society. More resources on high-quality health-care, education and other enrichments will have significant impact on future life-course.

Improvement on educational outcomes of dis-advantaged children is crucial for the pluralistic democratic development of every nation. The inequality of family income jeopardizes child health and education, and finally upward socioeconomic mobility of the country [58]. For most of its history, the United States has followed the route of relying on its public schools to solve difficult social problems. The basic reading and mathematical skills helped children of low income group attending public schools fill the large number of assembly-line and back-office clerical jobs that the economy was producing [59]. In China, prioritization of promoting children's health and diminishing health inequality has improved average health of children [60].

Childhood experiences to social and economic disadvantages in early life can perpetuate disadvant-aged condition across generations; however, the impacts can be mitigated by introducing Government policies and programs to improve children's wellbeing. Although there are many factors that may affect achievement gap and education completion, income inequality jeopardizes the sustainable access to learning and a chance for a better future. Policies and programs for changing the status of parent's education, income and time divesting for children's education and health would definitely be of importance [61]. Economic support to this sub-section of the nation for improving the quality of schools, and policies to attract more children from low income groups to attend schools should be considered in national agenda. Implementation of Child Tax Credit, the Earned Income Tax Credit, cash assistance programs, and the Supplemental Nutrition Assistance Program in USA resulted in successful achievement [62]. Financial support from the government and political clout of the wealthy will improve the economic and human resources for betterment of institutions in poorer neighborhoods.

In East Asia Pacific, China has achieved unparalleled success in economic growth and poverty reduction by considering education among the most important policy instruments and focused harmonious developments to share its prosperity more equitably [63]. In rural China, children from educated families and non-farm occupations were better placed in professional career with a higher pay-package compared to the children born to uneducated farmers due to insufficient investment in education and low educational attainment. UNICEF's "Report Card 13" stated that across the OECD, children's economic security has declined in the past 30 years in New Zealand, and that directs reinforcing the need for all Governments to ensure that children's rights and their best interests guide policy decisions so that equity is placed at the heart of child well-being agendas. The report revealed that migrant children in the United States, Germany, Iceland and Spain suffer greater dissatisfaction in their lives than children with long-established family-ties in those countries [16, 64].

Childhood health is an important mechanism of transmission of education and economic status, and is correlated with capital accumulation and labor outcomes in adulthood [65, 66]. Thus, policy makers may tradeoff improvements in equality against improvements in the distribution channels. They should take into account how far the society is prepared to accept greater health inequality in order to achieve greater mean health status. In addition, parent's background, in the form of their education level, social

class and health status are important conditions, especially for antenatal care and child birth. Focus on child health across different groups, sectors and individuals of the population might be a cost-effective way of breaking inequality traps and boosting human capital accumulation.

The degree of health inequalities can be decomposed into their causes, changes in means and the degree of inequality in each of its determinants. Understanding to what extent a distinctive measure of health is associated with SES or other characteristics of individuals, or how indices of morbidity and mortality change with SES would directly measure the degree of health inequality and explain the changes in the average levels of SES or other socioeconomic characteristics and the degree of inequality of those determinants. Health disparities are largely accounted for by inequalities in availability of infrastructure, socioeconomic position, area of residence and large inequalities in the use of immunization services [67, 68]. In India, Goli reported that inequalities in education and access to health care are critical variables in assessing health [69]. All health surveys found that stunting disproportionately affected the poor and the SES-inequality of malnutrition appears larger in Latin America compared to Africa or Asia [70].

5. INTERVENTION OF 'SOCIAL PEDIATRICS'

Intervention of social pediatrics can direct tailoring of the facilities to meet the needs of the disadvantaged communities living with multidisciplinary inequalities. Canada has set the best example in this field [8]. Such studies can establish community-based social pediatric model, which will help in forming institutional partnerships for making policies and legislation. This approach recognizes the effects socially-rooted inequalities have on mental, physical and developmental health of children born to at-risk vulnerable and socially deprived families [71-76]. The multi-dimensional measurement of pediatric and laboratory investigation of vital systems, nutritional parameters and spontaneous genetic damage can highlight the direct and residual effects of socio-economic and environmental exposure on culturally marginalized populations.

Social pediatrics is a whole-family and whole-community approach to children's medical problems and their prevention. It was pioneered in Montreal by a group of doctors who took the African proverb: "it takes a village to raise a child". Social pediatrics considers the health of the child within the context of their society, environment, school and family. It integrates physical, mental and social dimensions of child health with development as well as care, prevention and promotion of health and quality of life. Social pediatrics acts on three aspects of child health problems such as social causes, social consequences and health care in society. The task is accomplished in four areas of child health care such as curative pediatrics, health promotion, disease prevention and rehabilitation in corroboration with social determinants of health [2]. Such a community pediatric approach takes into account the following factors towards predicting the early onset of cardiovascular disease, T2-diabetes mellitus, etc.:

- Overall development, behavior and education
- Frequency of serious illnesses, such as ambulatory emergencies
- Salutogenic development, that is, social, psychological, spiritual and physical development
- Pathogenic issues, which are risk factors that are detrimental to health such as familial, social and environmental risks, abusive, violence, absence of social protection, marginalization, racism, cultural insensitivity, malnutrition, displacement, etc.
- Resilience, that is, adaptation to adverse living condition to live well and develop a sense of coherence in difficult conditions, and to overcome the legacy of violent or disadvantaged childhood,
- Life-course epidemiology, and
- The fetal origin of adult health: poor fetal health to higher morbidity and mortality.

These factors help to understand child health indicators and outcomes, child health protection and promotion, and prevention of childhood disorders [2, 71, 72].

In developing countries including India, epidemiological surveys on social determinants and children's health are being managed primarily by the departments of Preventive and Social Medicine through research projects for targeted screening of particular disorders. A conceptual approach to identifying and managing societal factors that affect underprivileged and at-risk children can ideally be supervised by a

'social pediatrics' fraternity [73]. However, the concept of social pediatrics is still at an incipient stage and yet to be integrated into medical curricula and residency programs. To address the issues of social determinants and nurture the health of children in disadvantaged groups, social pediatrics has already been aggressively implemented in developed countries such as Canada, United States, Europe, and Netherlands. Therefore, it is time to pay attention towards betterment of millions of children's health and development, and control of morbidity and mortality.

Implementation of the RICHER model (Responsive Intersectoral-Interdisciplinary Child-Community Health Education and Research) would be productive for understanding the intersecting social determinants through interpersonal communication with the families/respondents for multidisciplinary health measures [74-76]. The integration of social pediatrics would forge prevention and curative practices in communities that lack hospitals. The community pediatric approach would take account of development, behavior, schooling and education, frequency of serious illness, salutogenic development, pathogenic issues, resilience and life-course epidemiology towards early onset of cardiovascular disease, T2-diabetes mellitus, etc., with a view to understanding child health indicators and prevention with a serious thought and exercise. Approaching populations and gathering knowledge about their social and family environment and its effect on overall growth, and in particular brain development, would address the impact of socio-genetic or socio-epigenetic expression on child development for a broader perspective on quality of life. Such social pediatric intervention must follow a systematic approach to all families with a universal matrix of questionnaire to develop a model for addressing health and development of children living in difficult circumstances. The unsatisfactory health condition of the economically and socially deprived sections can substantially be altered only by a social determinants approach and with the help of social pediatrics, which will improve their daily living conditions, help them tackle inequitable distribution of power and resources, and pave the path for implementation of adequate governance policies to address their multiple development challenges adequately [74-76].

Understanding the contribution of social determinants on child-development, health and education, especially for disadvantaged, dispossessed and discarded children living in difficult circumstances, would be important to address their diversified effects. Community-pediatric approach would help to develop an in-depth exposure to stark realities of disadvantaged children and youth in underprivileged society - beyond the scope of basic living conditions. Exercise on multidisciplinary health investigation will identify the root-cause of long term systemic complications, and address prevention of life-threatening diseases (e.g. HIV, cancer, TB, etc.). If possible, at least an assessment of spontaneous chromosome aberrations in lymphocytes would indicate the outcome of gene-environment interactions, which might further necessitate mapping of disease-causing genes by genome wide association studies for these disadvantaged at-risk children of divergent cultures but with commonalities of stress and deprivations. Furthermore, screening of population-specific diseases such as thalassemia, sickle cell anemia and other hemoglobinopathies in a multiracial population would indicate the prevalence and transmission of genetic illness, which might have been multiplied by building sexual relationship and reproducing families with blood-lineages in isolated and socially excluded communities. In-depth investigation directed by community pediatric intervention would be useful to measure the genetic drift of disease-causing mutations, and might also identify ethnic-specific 'founder mutations'. In the era of predictive genetic testing, disadvantaged children who face social and environmental challenges will at least be evaluated for their health and development in the context of a very adverse scenario of basic needs of food, nutrition, shelter and education. Further targeted molecular mapping would be helpful for empirical understanding of epigenetic mechanisms of social and cultural influences on health from onset to progression of diseases.

CONCLUSION

The United Nation's Millennium Development Goals cannot be achieved unless child protection is considered as an integral part of the programs, strategies and plans. Social determinants, including inequality of family-income and education, violence, child labor, harmful traditional practices, child marriage, child abuse, the absence of parental care and commercial sexual exploitation jeopardize child development, and in turn postpone fulfillment of the constitutional and social commitments of the nation. Lack of parents' education and material resources for education and health care further affects the growth of national human resources and thus, the nation's development. Overcoming challenges impeding growth

and development needs societal commitments and good governance. Understanding the role of health-determinants and addressing them will direct sketching up policies and programs for strengthening and uplifting the underprivileged children - the leaders of the future. The health issues are highly complicated with compounding effects of SES, education, life-course, occupation, etc. The government and NGOs may jointly try to achieve some degree of success in improving level of education, health care, income level of the underprivileged families and their children in particular, and alleviate intergenerational impact of inequity. India has seen substantial improvement in literacy and healthcare; however, the dream of achieving equity in these areas is still a far cry. Meaningful research and proper documentation of the social determinants of health and their impact on the vulnerable groups might be helpful to gain insights into important sources of variance in the landscape of societal health, and their mitigation.

CONFLICT OF INTEREST

There is no conflict of interest to declare.

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