

The Technology of Human Development

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Abstract

Leaders and educators must seek to shape society through multi-disciplinary education that forms synergies with assessable healthcare and systemic development programs. The correlation of human development as it relates to impoverished children will be explored through the theoretical contributions of Abraham H. Maslow, Burrus F. Skinner, and J. Piaget. Some children learn by actively sampling and organizing the environment into working models of the world by remembering those mental constructs and experiences (Piaget, 1952, 1960). Other children learn through creatively exploring the world, through kinesthetic, artistic or linguistic experiences (Maslow 1954, 1968, &1971). This paper will discuss how to translate the ways people develop and relate to the world into community-based participatory research that can be disseminated to the appropriate target markets.

Key words: *Human Development, education, poverty, children, learn, community-based participatory research (CBPR), human capital*

A myriad of dimensions of human development have surfaced over time and vary from country to country (UNDP, 2015). The prodigious array of human development dimensions gives rise to the emergence of differentiated definitions. According to the National Human Development Report Unit, Human Development Report Office (UNDP, 2010), "Human development can be defined as a process of enlarging people's choices and building human capabilities (the range of things people can be and do), enabling them to: live a long and healthy life, have access to knowledge, have a decent standard of living and participate in the life of their community and the decisions that affect their lives." There are numerous debates on whether the study of human development is congruent to the environment. However, many scholars conclude that educators should study the relationship between man and the world (Burton, 2009; Maslow, 1954, 1968, & 1971; Piaget 1952, 1960; Skinner 1971, 1976). Although the educational scholar, Viktor Lowenfeld was disinterested in the pragmatic and social implementations of creative intelligence, he was concerned with understanding the inner functions of man as they relate to creativity and the surrounding environment (Burton, 2009). Everyone has the capacity to be creatively intelligent, but there is a remarkable distinction between creative intelligence and general intelligence (Burton, 2009).

According to Burton (2009), Lowenfeld emphasized relational knowing in congruence with aesthetic experience and art (Burton, 2009). Art and visual images are demonstrations of knowledge. Therefore, creating and responding to art helps produce a more meaningful, harmonious and organized world (Burton, 2009). Creating art forms helps people relate and demonstrate their relationship to the external environment. According to Burton (2009), Lowenfeld believed visual and expressive (imaginary) realism was a form of pictorial realism and formed the meaning of art, which was differentiated from the traditional application of "direct physical action on materials" as expressions of art. Consequentially, guiding children to create expressive art forms helps encourage general intelligence because creative intelligence integrates experiential knowledge, cognitive thought and peculiar expression. According to Burton (2009), art helps children and adolescents become more insightful about the purposes and problems of others. Art helps children uncover the world in stages.

Collectively, human development and art takes place in stages (Burton, 2009; Maslow 1954, 1968, & 1971; Piaget 1952, 1960; Skinner 1971, 1974). From the "scribbling stages of infancy to the crisis of

adolescence,” Burton (2009, p. 326) describes Lowenfeld's descriptions of art forms as chronological, predictable, orderly progressions of youth. Visual images are the bases for these hierarchical stages. Lowenfeld's linear progressions of development were similar to Piaget's natural stage progressions. For example, Lowenfeld's pre-presentational development stage resembled Piaget's pre-operational stage. Piaget (1960) and Lowenfeld (Burton, 2009) delineated the effects of the cultural constructs on art forms and creative expressions. Although Lowenfeld (Burton 2009) encouraged children to demonstrate their expressions of the world, his works helped students individualize their experiences and unique symbolization instead of collective cultural experiences. The intervention of teachers helps predicate the development of this pre-presentational stage. In Lowenfeld's (Burton, 2009) stages of development, children passed through these unique and unified stages at the same age and time.

However, scholars in the field of human development widely criticize structure, unity, and linear stage progressions (Burton 2009). The concept of harmonious teachings proposes that various growth components help shape the hierarchal stages of development (Burton, 2009). Although, some developmental stages exist harmoniously among children, there are other stages that children independently experience at different ages. All children do not have the same experiences occurring during the same ages. Some children develop faster than other children in their physical, mental, emotional, psychosocial, and creative intelligence. While other children develop expressions such as talking and walking at slower rates, this does not imply a lower level of intellectual or creative growth. According to Winter (2009), children are learning to read at younger ages, but there are many educational disparities among impoverished or minority children. When scientists speak of learning, it typically embraces the intellectual capacities of humans and neglects creative, emotional and sensory capacities that synergize the cognitive responses. However, intellectual and creative/aesthetic growth variables are only fractional components of human development (Burton, 2009). According to Winter (2009), many schools pressure children towards academic success. As educators diminish the importance of play, they replace the creative time with teaching readiness skills. However, engaging children in learning through haptic and audible experiences with toys help children make sense of a complex and confusing world.

Creating growth involves a natural unveiling. When children express creative intelligence through art forms, it helps educators understand the growth and development of children. Therefore, parents, teachers, and community leaders need to help stimulate human development by encouraging children to explore their environments through creative expressions. Winter (2009) suggest that children “need support for optimal physical and emotional health if they are to achieve academic success” (p. 96C). Children who are introduced to constructive learning and creative development will continue to grow creatively. Hence, encouraging kinesthetic learning experiences (engaging in art and extracurricular activities) that are learned during infancy to adulthood helps stimulate growth and creative intelligence. According to Burton (2009), “Lowenfeld's developmental theories are characterized by a process of creative practice (exemplifying, what he calls creative intelligence at work, rather than the aesthetic products of artistry)” (p. 335).

Many scientists, educators, leaders and politicians endeavor to harmonize human development with the environment. Whether expressions of harmonization are in art forms business models or laws, proponents of sustainable development seek to explore human development in relation to the environment. However, depletion of the natural resources, ecological environment and energy sources still occurs as humans pursue “material civilization” (Jin, 2009, p. 347). This results in, many countries, societies and governments seeking to harmonize human development with the environment, and many scholars are on a quest to research sustainable development. For example, China had 30 years of economic growth at the expense of numerous social and environmental concerns (Jin, 2009). Like China, many countries have short term profit making models that negate long term developmental strategies. The continuance of short term profit making models gives rise to the global financial crisis that invades

the 21st century. However, many scholars believe that these global-contextual challenges are due to human developmental paradigm challenges (Jin, 2009, p. 348).

Neither the “pursuit of happiness” nor the pursuit of profits can solve the socio-economic crisis that the world faces. Jin (2009) suggest that global economies must create, “supportive institutional environments [that] build upon rich cultural traditions and moral ethics for evolving a new economic order” (p. 344). These supportive institutional environments must be driven by a sustainable economic value system that includes schools, businesses, non-profit organizations, parents, politicians and the community. Jin (2009) believes a “new value system and a new development paradigm” is needed to encourage a fundamental transformation from a “hard technology-driven production system of an economy to a new economy facilitated by soft technology” (p. 344). The operable knowledge of technology refers to the potential to resolve problems or the potential to create value (Jin, 2009).

Hard technology is defined as a set of tools and means derived from the knowledge of natural sciences, with its operations conducted in the physical world. We refer to soft technology as “the means for solving the problems derived from non-natural science, non –scientific knowledge; its operation objects are human psychological action and social behavior” (Jin, 2009, p. 347).

Hard technology and soft technology must be synergistically utilized as operable and non-operable knowledge that can be used to create systemic, sustainable solutions. There is only one earth, and “the productivity of [the earth’s] natural resources is limited” (Jin, 2009, p. 344).

People must live in harmony with both the natural environment and human nature. These orders must coexist and survive together, sharing and protecting the Earth. Our generation must learn to deal with the relationships between past, present and future, and consider the natural resources that should be left for the next generation. Sunshine, blue sky and clean water belong to natural capital. Natural capital should be valued as integral glue to the Global Domestic Product (GDP), social capital and human capital, and thus an important part of the national wealth (soft capital). Sustainable and coordinated development of economic, and social, environmental resources is needed as a resource for a viable national development model (Jin, 2009).

Consequentially, schools, community organizations, and businesses should determine the value of their operations, not just the economic value, but the social-environmental values that synergize creativity and human development through the use of hard and soft technology.

In the United States, people seek to maximize profits instead of human development. Private companies maximize profits by purchasing public hospitals. Closing public schools also allows private schools to maximize profits and increase responsibility for educating children. However, many privatized institutions have profit maximization structures. Many of the privatized institutions (health and education) are profit driven models that neglect the mission of increasing human development, education and social/cultural sustainability. Numerous companies seek to make a profit from human, artistic talent and natural resources. Some companies do not seek to sustain a balance between sustaining nature and man’s relationship with the environment, which results in a global dilemma. The transformation of the not-for-profit educational system into the for-profit educational system may be the reason art, music and extra curriculum activity budgets are being eliminated in the public school systems. Schools, businesses and community organizations can help promote human development by transitioning from hardware – oriented business into soft-services and solutions enterprises, which will improve “efficiency, save cost, and form virtual [relationships]” (Jin, p. 345, 2009).

Agriculture also plays multiple roles in human development. Children need the proper nutrients to support healthy bone growth and organ function. According to Wojcicki (2010), almost one third of the U.S. population is overweight. For over six years, the First Lady, Michelle Obama’s “Let’s Move” campaign has targeted children, schools, neighborhoods and families in a mobilization objective to help reduce obesity (Wojcicki, 2010). “The program’s main anti-obesity strategies are empowering parents and consumers by revamping the nutritional labeling of products by the U.S. Department of Agriculture

(USDA), improving the nutritional standards of the National School Lunch Program, increasing children's opportunities for physical activity and improving access to high-quality foods in all U.S. communities" (Wojcicki, 2010, p.1457).

According to Florence (2008), there is a correlation between dietary factors that contribute to the academic success of children. Many children become overweight due to an increase of dietary fats, refined sugars and a decrease of whole grains, vegetables and fruit (Florence, 2008). Consequentially, undernourished children can show signs of decreased attention, academic performance and health (Florence, 2008). Recent studies (Florence, 2008) have also shown that eating breakfast increases cognitive performance during a task. The studies of Florence (2008) also show a positive correlation between academic achievement and health and demonstrated that children with deficient diet quality performed significant lower on the literacy assessments. Conclusively, the studies revealed that high academic achievement leads to future academic achievement, higher income, healthy development and higher qualities of life (Florence, 2008). The study (Florence, 2008) also concluded that girls performed better than boys, and children in wealthier neighborhoods performed better than children in impoverished neighborhoods.

There are many educational disparities among impoverished, and/or minority children (Winter, 2009). According to the National Institute of Health (2009), low income children have high risk factors for poor health and obesity, which decreases their school readiness skills. A study from Florence (2008) indicates that children who are raised in high socio-economic families are more likely to consume healthy diets than students from disadvantaged backgrounds. Research studies from Koh et al. (2010) indicate that there is a link between high mortality rates and low socio-economic status. Children in poor communities typically have poor diets and poor academic performance, which may lead to chronic diseases and poor child development (Florence, 2008, p. 211). Healthy development and prolonged life precipitates from high socio-economic backgrounds, coupled with proper health care and education. "Those who are poor and have a low "socioeconomic position" (SEP) suffer disproportionately from poor health outcomes" (Koh et al., 2010, p. s72). Consequentially, healthy childhood eating behaviors tend to proliferate through adolescence, and adulthood. For example, the life expectancy of poor males in Glasgow is 54, versus 82 years of age for high income males (Wilensky, 2009).

On the other hand, women represent only half of the world's population, and they account for over 70% of the poverty rate (Obeng-Odoom, 2010).

Poverty is a cyclical causation. If women live in poverty, then their babies live in poverty. Although the poor may have low levels of education, that does not mean that people live in poverty because of lack of education or health and vice versus (Obeng-Odoom, 2010). People may live in poverty because they lack certain social determinants that lead to high paying jobs. There are many highly educated people that are poor, which can be attributed to socio-economic disparities. When poor people have low paying jobs, they work harder with modicum to no health care coverage. Working long hours without the sufficient time to cook nutritional meals may lead to exhaustion and sickness. Prolonged sickness, due to lack of medical coverage may lead to disease and death. Parents may also raise children in this cyclical atrocity, and children may follow in the footsteps of their impoverished parents. The cycle must end. Researchers must dig deep within the roots of various social systems and explore the socio-economic disparities that are the rudiment of inequitable wealth.

In order to bring about systemic change in human development, researchers must address the characteristics of human development. There are many socioeconomic factors (e.g., living environment, education, employment, and communication opportunities) that disproportionately affect the health of poor and minority populations. It is imperative that researchers seek to understand the eight millennium development goals (MDG), 17 sustainable development goals (SDGs), and the key indications of human development (UNDP, 2015). The catalyst for increased developmental aid, improved governance, education and health care is the ability to understand and eradicate negative social determinants that

affect human development. The cyclical effect of poverty diminishes proper human development but can be alleviated with education and the application of knowledge.

Obeng-Odoom (2010) discusses the use of education through the Global Poverty Project (GPP). The GPP attempts to improve literacy, longevity of life and GDP per capita and poverty through worldwide educational forums (Obeng-Odoom, 2010). The GPP stems from the capabilities approach of human development that utilizes the Millennium Development Goals (MDG) framework. Programs such as the GPP should be mandated in schools and used to promote exercise and healthy lifestyles. School programs that promote exercise and the consumption of healthy diets help enhance human development through education. The 2007–2008 National Health and Nutrition Examination revealed that children over two years of age are already overweight or obese. In 1948, the World Health Organization (WHO, 2011) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Therefore, Wilensky (2009) presents a viable belief that “improving the conditions that shape early child development can improve opportunities for health throughout the life span” (p. w195). Wilensky (2009) also believes that many of the “vexing health problems that we face now and are projected to face in the future have their roots in the early years of life” (p. w196). If children are overweight or underweight it leads to loss of energy and improper cell growth and brain function, which ultimately diminishes mental and physical capacities. Methodological prevention strategies must begin at pregnancy and extend beyond birth into adulthood.

High-quality nutrition during gestation and after delivery is critical to the healthy development of children (Wilensky, 2009, p. w196). According to Wojcicki, (2010) long term regulation of energy balance is predicated upon “excessive maternal weight gain or smoking during gestation, shorter than recommended duration of breast-feeding, and suboptimal amounts of sleep during infancy” (p. 1457). Research studies (Wojcicki, 2010) suggest that the metabolic system, endocrine system, body weight and hypothalamic systems are subjective to these maternal health habits. Further research from Wilensky (2009) suggests “there is increasing evidence that the environment in the womb plays a role in later development in childhood and adulthood obesity, Type 2 diabetes, high blood pressure, and heart disease” (p. w. 196). According to Wojcicki (2010) smoking during gestation and shorter-than-recommended duration of breast-feeding influences the development of the hypothalamic system, endocrine, and pancreatic functions, as well as metabolism function. These early life exposures increase the risk of obesity among youth and adults. Therefore, it is imperative that we teach the importance of prenatal care, breast feeding, proper nutrition, adequate sleep and anti-smoking lifestyles for mothers. It is also equally important that children learn about proper nutrition, adequate sleep/exercise and the adverse effects of smoking at an early age. It is highly likely that these educated children will grow into healthy adults and parents who implement these strategies.

Our children face an enormous dilemma. Persuasive cigarette packages bombard children and encourage smoking behaviors that are detrimental to their health. Tobacco industries utilize these marketing and branding strategies that target youth because the strategies help promote and reinforce smoking behaviors. Research studies (Hoek et al., 2010) have shown that “plain cigarette packaging reduces the perceived attractiveness of smoking” (p.1). However, “large graphic warnings are significantly more likely to promote cessation among young adult smokers than fully or partially branded packs” (Hoek, et al., 2010, p. 183). According to Hoek, et al. (2010), the “use of unbranded package space to feature larger health warnings” help support cessation (p. 183). Efforts to support cigarette smoking cessation are needed because, the WHO (2011) reports that smoking is one of the leading causes of preventable diseases and death. According to the WHO (2011) report, “over five million people die from tobacco use and exposure to tobacco smoke every year.” This is approximately one death every six seconds. Out of the 5.4 million smoking related deaths worldwide, there are 443,000 premature smoking deaths in the United States (WHO 2011). Approximately 63% of all deaths are caused by non-communicable diseases (NCDs), for which tobacco use is the greatest risk factor, after high blood pressure (WHO, 2011).

However, the smoking industry is a multi-billion dollar industry. The enormous profitability margin within the industry presents a challenge for educators to dissuade youth and adult smoking activities. Competing with billion dollar tobacco companies has many complexities. Aggressive anti-smoking campaigns emerged during the 1980's, yet "more than one in five adults and high school students still smoke" (Wilensky, 2009, p. 197). These statistics led to the act of legislation that give the "U.S. Food and Drug Administration (FDA) the authority to regulate the manufacturing, advertising, and promotion of tobacco products to protect public health" (Kees, et al., 2009, p. 265). In Hoek's, et al. (2010) findings, the results indicated that people preferred cigarette packaging that featured a health warning that covered 50% of the package, but were significantly less likely to choose cigarettes that featured a 75% warning label. The study (Hoek, et al., 2010) resulted in a "comparison of a control pack representing the status quo (branded with 30% front of pack warning) and a plain pack (with a 75% warning) that revealed the latter would be significantly more likely to elicit cessation-related behaviors" (p. 183). These findings support the July 2009, Family Smoking Prevention and Tobacco Control Act (110 U.S.C. §§ 900-302), which mandated the placement of a smoking cessation hotline number along with negative, colored smoking graphics of diseased lungs, rotted teeth and corpses placed on cigarette packages (Kees, et al., 2009).

In July 2009, the Secretary of Health and Human Services required that these graphic warning labels be placed on 50% of the front and rear of cigarette packages by September 2012 (Selyukh et al., 2011). However, major tobacco companies (R.J. Reynolds Tobacco Co., Lorillard Tobacco Co., Commonwealth Brands, Inc., Liggett Group, LLC and Santa Fe Natural Tobacco Company, Inc.) filed a lawsuit challenging the graphic warning label mandate with the refute that the tobacco industry would have to spend millions of dollars on new packaging (Selyukh et al., 2011). As of November 7, 2011, a federal judge blocked the U.S. ruling, which requires tobacco industries to display graphic images on cigarette packaging (Selyukh, 2011). The judge issued a temporary injunction, which allows the tobacco companies to file a lawsuit challenging the U.S. rule as unconstitutional (Selyukh et al., 2011). Although these rules attempt to decrease smoking mortality rates among youth and their families, they are juxtaposed with numerous oppositions that have additional diminishing effects on human development.

Many parents who use alcohol, tobacco or drug abusers give birth to children with chronic diseases. Some of these unidentifiable diseases and minor deficiencies develop into life threatening adult challenges. Childhood eating habits, adolescent smoking, alcohol/drug use, and childhood traumatic injuries have lifelong physical, social, psychosocial and emotional impacts on development. Although, a person engaged in drugs, alcohol or tobacco usage during their teenage years may quit during their 30's, the effects on their respiratory system may not fully manifest until they reach retirement age. Childhood decisions may not affect some children immediately. However, some childhood decisions may show significant, adverse outcomes in the future. It is, therefore, imperative that we educate our youth on the importance social determinants have on operative health and human development. Education and the proper application of knowledge will help reduce health care costs and lessen the prevailing effects of obesity.

Healthy, human development is not predicated upon scaring the economy into making healthy decisions. Therefore, educators and lawmakers should cognitively consider the effectiveness of strategies that involve changing tobacco advertising laws or utilizing fear tactics to scare children into healthy decisions. The research of Kees et al., (2009) suggests that graphic warning labels evoke fear, which mediates intentions to quit smoking. Healthy human development involves educating the public about making healthy choices such as, proper prenatal care and breast feeding coupled with life-long efficient sleeping habits, exercise and sustainable nutritional habits. Programs such as the "Let's Move" campaign help encourage proper nutritional habits and exercise (Wojcicki, 2010). According to Wojcicki (2010), the "Let's Move" campaign targets children as young as two years of age. More prevention programs are needed to help reduce the smoking rate among pregnant women (Wojcicki, 2010). The studies of Wojcicki

(2010, p. 1457) suggests that “pregnant women, infants, and preschool age children could benefit from being more explicitly incorporated into [smoking] campaign[s]” p. 1457. It is imperative the people engage in healthy diets, cease smoking and maintain the environment to help encourage human development.

Wilensky (2009) suggest that we need additional aggressive outreach strategies to educate parents on the importance of proper nutrition. The government already pays for food and nutritional programs. Wilensky (2009) also proposes that the government assist with funding for mandatory substance abuse programs. The Federal Supplemental Nutrition programs for “women infants and children” (WIC), the United States Bridge Card program, and the Supplemental Nutritional Assistance Program (SNAP) are some of the programs that help support nutritional consumption for low income families (Wilensky, 2009). The WIC program helps women buy nutritional food for their children (ages 0-5). The parents who receive WIC assistance have children who are typically at risk for unstable nutritional food security. The WIC program also has stringent guidelines on what should be purchased with the vouchers. While the WIC and the SNAP program helps ensure the purchase of fresh fruits and vegetables, other programs (such as the Bridge Program) do not mandate nutritional purchases.

Education is a cost effective way for enhancing the quality of life and advancement of human development (Wilensky, 2009). According to Wilensky, (2009), “all children need access to high-quality care that fosters early child development, but significant attention needs to be given to the disadvantaged, poor, and children whose development is lagging” (p. w.196). Wilensky (2009) proposes that “young children need safe, nurturing, caring, and responsive environments as well as opportunities to explore their world—to play, and to learn how to speak and listen to others” (p. w197). The World Health Organization (WHO) commission found “the conditions to which children are exposed; including the quality of relationships they are part of, the language they hear, and the environment around them—literally sculpt the developing brain” (Wilensky, 2009, p. w197). Therefore, environmental and agricultural conditions and resources can negatively or positively affect human development.

Agriculture is the source of the food supply chain that contributes to the lifespan of humans, animals and the eco-system. If civilizations do not properly maintain the land, (including soil), water and the air, it will affect the lifespan of vegetables, animals and ultimately humans. The purity of water and air are the rudiments of accelerating healthy human development (Wilensky, 2009). Education and secure employment are also social determinants to health and human development. The green business model promotes the triple bottom line, which is the economic, social, environmental factors that support economic development (Jin, 2009). The research of Obeng-Odoom (2010) suggests that there is “causality between economic development and human development” (p. 123). However, “economic development within itself does not lead to human development” (Obeng-Odoom (2010), p. 123). Economic development is a means to human development, but it is not the ends of human development (Obeng-Odoom, 2010, p. 123). In other words, the gross national product will not alleviate poverty. Obeng-Odoom (2010) suggests “educated and healthy people are able to produce more and higher quality goods and services to increase economic growth” (p. 123).

Many companies are including sustainable development and corporate social responsibility reports with their annual reports. These corporate/social implications help positively impact some of the social and political factors that contribute to poverty. According to Obeng-Odoom (2010), MDG defines poverty as ‘bundles of deprivations’(p. 121). Unfortunately, these “bundles of deprivations do not necessarily describe the causes of the deprivations” (Obeng-Odoom, 2010, p. 121). There are many systemic causes of deprivation and poverty. Characteristics beyond individual control, such as “(age, race, sex, family, class status, region of solicitation, education, health, region of employment, personal motivation, technology, unionization, relation of industry to government, labor demand, and unemployment/growth rate)” are variables that systemically cause deprivation (Obeng-Odoom, 2010, p. 123). These cultural and social determinants affect the ability to embrace healthy lifestyles and acquire adequate health coverage.

According to Jin (2009), “what we need is a systemic solution integrated by various knowledge and technologies, where soft technology focuses on the social, philosophical and cultural perspective, adapting to provide intangible solutions” (p. 348). In order to provide intangible solutions, leaders must understand the social determinants that affect practical health reform. Acquiring knowledge and understanding the social determinants that affect health reform are the building blocks that lead to effective human development.

Effective health reform should involve healthy lifestyle and maternal education. Breastfeeding, sleep, exercise and proper nutrition have essential roles in human development. Studies (WHO; 2008, Lawrence & Lawrence, 2004) show that infants who are not breast fed may experience long-term health risk. Although the long term consequences of breast-feeding are unclear, several studies (Borkow, 2011; WHO, 2008; Lawrence, & Lawrence 2004) indicate that breast feeding helps increase the growth and metabolic patterns during the first six months to one year of life. Breast milk contains “fats, proteins, carbohydrates and minerals in an aqueous solution” (Borkow, 2011, p. 168). According to Borkow, et al. (2011) breast milk is nutritional and contains “anti-infective factors, developmental-stimulating growth factors and hormones, immune function modulators, and anti-inflammatory agents that confer protection against disease and reduce infant morbidity and mortality in spite of harsh environments” (p. 166). Increasing growth and metabolic patterns through the extended use of breast milk will help enhance child development, especially in impoverished regions of development. Parents should build healthy lifestyles that foster healthy growth among themselves and their children and these healthy lifestyles should include proper neonatal breastfeeding. Sustainable, healthy lifestyles help diminish childhood and adult obesity. If parents are cognizant of the importance of breast feeding and healthy metabolic growth, it will help improve human development by decreasing the risk of childhood obesity.

In the United States, obesity in children continues to rise. Several studies indicate that there is a correlation between shorter sleep duration and overweight children (Carter et al., 2011) The Family Lifestyle Activity Movement and Eating (FLAME) study conducted by Carter, et al. (2011) suggests that “young children who do not get enough sleep are at increased risk of becoming overweight” (p. 4). The study utilized a cross sectional analyses of “age, sex maternal education, maternal BMI, income, ethnicity, birth weight, smoking during pregnancy, physical activity, TV viewing, fruit-vegetable intake, non-core food intake and sleep to examine the factors that contribute to obesity” (Carter, et al., 2011, p. 4). The results indicated that “each additional hour of sleep per night at ages three to five is associated with a reduction in BMI of 0.49 (or .7kg of body weight) at age seven,” which equates to a “61% reduction in the risk of being overweight or obese at age seven for an extra hour of sleep” (Carter, et al., 2011, p. 4). According to Carter, et al. (2011), “the differences in BMI extend into adult life; for every hour less sleep at ages five to 11, BMI was .93 higher at age 32” (p. 5). Although other variables such as, “parental size, physical activity, dietary intake, and particularly earlier weight status” are associated with childhood obesity, increasing sleep duration among children will help decrease the risk of obesity (Carter, et al., 2011, p. 1).

Sleep deprivation has tremendous negative effects on the body. Several studies (Caldefie-Chezet, et al., 2001; Fantuzzi, 2000; Margetic et al., 2002; Shapiro et al., 2008; Zirlik et al., 2011) have shown that leptin is decreased, and ghrelin is increased during sleep deprivation. The body uses leptin and ghrelin to increase metabolism and energy, which will cause an increase in appetites when improperly regulated. According to Inu & Bowers (2004), ghrelin helps increase memory and learning. Appetite and metabolism are regulated by leptin through the intake and expenditure of energy (Caldefie-Chezet, et al., 2001; Fantuzzi, 2000; Margetic, et al., 2002; Shapiro, et al., 2008; Zirlik, et al., 2011). The placenta, epithelial cells, ovaries, stomach, bone marrow, liver and pituitary glands produce leptin proteins that contain over 167 amino acids (Margetic, et al., 2002). The leptin protein increases as food intake decreases, and can also be increased to normal levels with eight to 12 hours of continued sleep (Zirlik, et al., 2011). On the other hand, as food intake increases, leptin levels decrease. The increase or decrease in leptin levels

affects the receptors in the hypothalamus that stimulate cells in the gut. Ghrelin has only 28 amino acids and increases before food intake and declines after food digestion (Inu & Bowers, 2004). Ghrelin also affects neurotropy in the hypothalamus, hippocampus and pituitary glands, which affect cognitive skills (Inu & Bowers 2004).

According to Margetic (2002), the absence of leptin leads to uncontrollable eating and obesity. Other variables such as exercise and testosterone decrease leptin, which may also lead to continued eating. Decreased leptin increases inflammatory responses, which may lead to numerous inflammatory diseases (e.g. cardiovascular disease) (Fantuzzi, 2000, Caldefie-Chezet, et al., 2001). Much like leptin, ghrelin also suppresses anti-inflammatory conditions and is used for treating gastrointestinal inflammatory diseases such as colitis (Gonzalez-Rey, et al., 2006). Unfortunately, leptin is resistant in high amounts of fructose, which is included in candy and sugar containing foods (Shapiro, et al., 2008). The research (Inu & Bowers, 2004) also suggests that cognitive skills are increased in the morning when ghrelin levels are higher after the night fast. Consequentially, healthy consumption of fruits and vegetables periodically throughout the day helps regulate leptin and ghrelin, which ultimately regulates energy consumption and healthy sleeping habits. When people lack sleep, their hormonal and behavior patterns are altered. Sleep reduction also increases appetites and decreases energy levels. When people are awake, they eat more, which ultimately uses their body energy to breakdown the food and causes them to be less energized. Therefore, the proverbial couch potatoes are eating more and exercising less because they are tired.

Maternal exercise and diet has diverse physiological effects on the placental development and fetal growth. Globally, around 31% of adults aged 15 and over were insufficiently physically active in 2008 (WHO, 2011). The results of Clapp's (2006), study reveals that "exercise in early and mid-pregnancy stimulates placental growth and the relative amount of exercise in late pregnancy determines its effect on late fetal growth" (p. 527). According to Clapp (2006), "low-glycemic food sources in the diet decrease growth rate and size at birth while high-glycemic food sources increase it" (p. 527) suggests that modifying maternal exercise and dietary intake helps improve pregnancy outcomes. Mothers should be cognizant of the frequency and quantity of food intake and monitor their blood glucose levels. Blood flow is disseminated to the placenta by monitoring food intake and blood glucose levels, which ensure proper oxygen. The results from Clapp's (2006) study indicated that:

Healthy "women who exercise regularly should be encouraged to continue at a volume equal to or greater than 50% of their pre-conceptual volume and sedentary women should be encouraged to increase their recreational activity levels to the point that they are spending at least 20-30 minutes briskly walking 3 to 5 days a week" (Clapp, 2006, p. 532).

Conclusively, modifying diet and maternal exercise are preventative and therapeutic measures that help improve pregnancy outcomes and human life expectancy (Clapp, 2006).

Social Determinants of Poverty and Human Development

Poverty has multifaceted effects on human life expectancy, as well as numerous effects on education, employment opportunities and health care (Florence, 2008, Wilensky, 2009). Studies have shown that the advancement in education increases social status and income levels (Florence, 2008). The educational and socio-economic status of parents associates future childhood development with the educational and socio-economic status of children. Society must help develop and improve the socio-economic determinants that affect the educational performance of children and their parents. There are numerous determinants such as gender, ethnicity, quality of school, and school experience, nutrition, child health, and socioeconomic factors that affect academic performance. The research of Florence (2008) believes that the "academic achievement of children helps increase their future social status and income levels" (p. 210), which ultimately helps increase their health- education and ability to afford adequate prevention and intervention health services.

According to Koh, et al. (2010), the Agency for Health Care Research and Quality's 2008 National Healthcare Disparities report indicated that the "lack of health insurance is a persistent, major barrier to eliminating health disparities" (p. s72). In comparison to health outcomes, the United States spends more money on healthcare than many other countries (Wilensky, 2009). Meaning, as the United States health care budget increases the health, prosperity and human development of the country is diminishing. Reports (Wilensky, 2009) indicate "cardiovascular disease, cancer, mental health problems, and other chronic conditions accounts for more than 75 percent of the cost of the U.S. health system" (p. w196).

According to the WHO (2008) report the mean body mass index (BMI) of the world's population increased dramatically between 1980 and 2008 and globally, around 35% of adults aged 20 and over were overweight in 2008. These reports indicate that the healthcare budgets are increasing, but the health and prosperity of human development is decreasing. More people are dying at younger ages due to lack of insurance or increasing health challenges. According to the WHO (2008) report, the average life expectancy of the global population is 68 years of age, and the average life expectancy of the U.S. population is 79 years of age. Globally, 39% of adults aged 25 and over had raised cholesterol in 2008 (WHO, 2008). Although, the mean blood pressure globally declined, 40% of adults aged 25 and above had high blood pressure. On the other hand, the mean blood glucose of the world's population increased slightly between 1980 and 2008, but globally, around 9% of adults aged 25 and over had raised blood glucose in 2008. According to Obeng-Odoom (2010), "the US spends 14 percent of per capita expenditure on health, yet ranks worse (37th) in overall health system performance than the U.K. (18th), which spends only 6 percent of per capita expenditure on health" (p. 123). Therefore, wealthy countries do not necessarily have cogent healthcare systems (Obeng-Odoom, 2010). Countries like, "China, Morocco, Singapore, Chile, Colombia and Costa Rica all have better health systems than the U.S., even though the U.S. is richer than all these countries (Todaro & Smith, 2006: 403). Consequentially, increasing the healthcare budget is not a sole strategy to enhance human development.

Increasing the health care budget to provide for proper health care insurance coverage must be supported by systemic, global education regarding proper prenatal care and breast feeding coupled with life-long efficient sleeping habits, exercise and sustainable nutritional habits. According to the WHO (2008) report, approximately 16.0 million (1.0%) disability adjusted life years (DALYs, is a measure of the potential life lost due to premature mortality and years of productive life lost due to disability) and 1.7 million (2.8%) of deaths worldwide are attributable to low fruit and vegetable consumption. Adequate consumption of fruit and vegetables reduces the risk for cardiovascular diseases, stomach cancer and colorectal cancer (WHO, 2008). However, there are many disparities between access to capital for fruit/vegetable purchases, healthcare, and education. Ultimately, these disparities and social determinants affect the health outcomes across countries. The term disparity has a myriad of meanings and can be viewed through multiple lenses. According to Koh, et al. (2010):

The National Institutes of Health (NIH) specified that "health disparities are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States" (UNDP, 2015). Another frequently used definition explains a health disparity as "the quantity that separates a group from a specified reference point on a particular measure of health (Koh, et al., 2010, s73).

According to Wilensky, (2009), the purpose of the World Health Organization is to identify strategies that will improve health and reduce the differences in health outcomes" (p. w194). There are Medicaid and State Children's Health Insurance Program (SCHIP) that help impoverished children whose parents are not able to afford health care. Wilensky (2009) argues that "it is critical to remember that improving the conditions in which people are born, grow, learn, live, age, and die will have a great and, in some cases, an even more lasting impact on health than changes in medical care" (p. 198).

Despite the negative health statistics, there are more wealthy individuals today than the prior decade. However, the number of impoverish individuals steadily rises as human development diminishes.

More wealth should translate to less poverty and better human development. Unfortunately, this is a fallacy because unequal distributions of wealth, health care and education still exist.

The wealth in the United States “is highly concentrated in a relatively few hands. As of 2007, the top 1% of households (the upper class) owned 34.6% of all privately held wealth, and the next 19% (the managerial, professional, and small business stratum) had 50.5%, which means that just 20% of the people owned a remarkable 85%, leaving only 15% of wealth for the bottom 80% (wage and salary workers). In terms of financial wealth (total net worth minus the value of one's home), the top 1% of households had an even greater share (42.7%). (Wolff, 2010)

The World Health Organization report (2008) indicated that, in 2008, there were over 6.7 million people who owned 1 million dollars or more, which is a 2 % decline from the preceding years. According to the Central Intelligence Agency, the United States ranks number 43 (online data is updated weekly) for income equality among 144 countries that were studied (Central Intelligence Agency, 2015). Countries help equally distribute income with higher minimum wages and high taxes for top income earners. Although wealth and health inequalities may be unavoidable, Koh, et al., (2010) believes “all [children and adults] “should have an equal opportunity to reach their full potential in health” and human development (p. s72). Health inequalities among socioeconomic classes and countries are unavoidable. Many people would argue that wealth should not be equally disputed and would suggest that people get the healthcare and education that they earn. While others would argue that the rich should help the poor and bridge the gap between health, socio-economic and educational disparities. The poor live in a trapped cycle that chains the bondages of poverty to lack of health care, income, education and a lack of time to exercise, sleep and cook nutritious meals. The research of Obeng-Odoom (2010), suggest that we view development as liberation, which is “liberation from capitalist exploitation and domination between communities, cities, district, regions and nations; between men and women and between one race and another” (p. 125). Capitalist own products and resources and, they are responsible for managing workers of poverty. Capitalists also use cutting edge technology and minimally paid laborers to perform tasks at the lowest wages possible. Sometimes capitalist structures exploit the impoverished, women, uneducated and create an environment of social and political bondage. Consequentially, Obeng-Odoom (2010) suggests that human development be renamed “liberation” because people should be liberated from “unjust class structures, political exploiters, female oppression and all in human agencies of life” (p. 124).

The United States must seek to close the health gap by providing assessable health care and systemic development programs that help diminish poverty and in-equalities through global, multidisciplinary education. It is imperative that we translate this evidence based research into practice through multidisciplinary, educational forums and programs. According to Koh, et al. (2010), “translating the evidence of health inequities into practice requires research that bridges the gap between discovery and delivery” (p. s74). When researchers discover and deliver information it is imperative that they disseminate the information to the appropriate target market in order to catalyze the effective, applicable practice of knowledge. Scientists conduct experiments in controlled environments, which limits the ability to apply the results to real-life situations. Research should be tested in real world settings, and the results should be disseminated to the appropriate target audience. Disseminating best-practice research to targeted audiences through global/universal education will help eradicate health disparities and poverty.

Conclusion

Research from Koh, et al. (2010) indicates “eliminating health disparities requires heightened emphasis on translating and disseminating proven interventions in ways that will reach all people, irrespective of social class or racial and ethnic background” (p. s72). More community based participatory research (CBPR) projects should be conducted in academies and communities. According to Koh, et al. (2010), “CBPR invests in human capacity and builds competencies among community-based organizations

(CBOs) that effectively engage in research dissemination” (p. s74). Many CBPR models use a RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) approach to evaluate and sustain public health research efforts. Utilizing CBPR models with RE-AIM approaches help the community and researchers explore the existence of research gaps. For example, various capacity building grants require non-profits to conduct a needs assessment within the community. These programs are reaching within the communities in order to gauge the effectiveness of the services in efforts of improving or maintaining the implementation processes. Engaging the community in a participatory approach to human development allows the government and community leaders to share a common interest in human development and sustainable implementation. These synergistic collaborations and CBPR models with RE-AIM approaches are necessary to cultivate children’s health and global human development. Conclusively, fostering evidenced based practices into real world settings that implement global, multiple-disciplinary, educational initiatives will help systemically improve human development.

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