Health and Nutrition Indicators in Early Childhood

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Abstract

Quality early childhood settings are essential to the establishment of healthy developmental pathways. With a growing number of young children in out-of-home care, early childhood programs such as preschools, childcare centers, and home childcare settings can have tremendous impact. But while quality early childhood settings pay careful attention to pre-academic, language, and social-emotional development, most do not incorporate intentional, sustained focus on health and nutrition. Healthy development in adulthood has its origins in the earliest years of a child's life. When health factors such as obesity and poor nutrition are present prior to age 5, they can persist throughout the child's life and result in decreased adult health and work productivity. Additionally, health and nutrition deficits follow the same pattern as pre-academic and language disparities among children of color living in poverty. Children from higher socioeconomic brackets lead significantly healthier lives and experience greater access to preventive healthcare. It is for these reasons that quality early childhood settings should embed nutrition, parent coaching, and education around preventive health care, nutritious meals and snacks, and opportunities for healthy physical activity in curriculum, family engagement, and everyday routines. This is particularly important for early childhood programs serving children and families placed at risk.

Title

Health and Nutrition Indicators in Early Childhood

Research Topic

This research brief examines the impact of health and nutrition indicators in early childhood settings. Federally funded early childhood programs (e.g., Head Start and Early Head Start) have specific health and nutrition requirements that include monitoring compliance with physical and dental health exams as well as specially trained staff members who coach and guide families through often complex health care system (U.S. Department of Health and Human Services, 2016). In addition, these programs follow nutrition guidelines and provide consultative services from a registered dietitian for families who are dealing with childhood obesity, poor nutrition, malnutrition, and other related issues.

Many state and locally funded early childhood programs require no more than proof of immunizations and a current child physical at the time of enrollment. There are no requirements for ongoing conversations with families regarding preventive health care, embedding nutrition and healthy practices into curriculum, and monitoring dental and health checkups. This research brief intends to outline the importance of including intentional health and nutrition indicators in quality early childhood programs, as well as to identify the long-term benefits of such practices. More specifically, the question of: "What impact do health and nutrition indicators in early childhood programs have on child outcomes" will be answered.

Introduction

Early Years Matter

Incontrovertible evidence exists regarding the importance of quality early childhood experiences, healthy environments, and secure, dependable, responsive relationships between

young children and adults (Ferretti & Bub, 2017; Minniss, Wardrope, Johnston, & Kendall, 2013; U.S. Department of Health and Human Services, 2015; Shonkoff & Fisher, 2013; Shonkoff & Phillips, 2000). The Committee on Integrating the Science of Early Childhood Development published in 2000 their landmark work *From Neurons to Neighborhoods: The Science of Early Childhood Development*, and describe the critical importance of the first years of a child's life as follows: "What happens during the first months and years of life matters a lot, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or fragile stage for what follows" (Shonkoff & Phillips, 2000, p. 5) Early childhood development, whether sturdy or fragile, results from an inextricable combination of multiple domains—motor, cognitive, social-emotional, communication, self-help, and overall physical and mental health. But many early childhood programs omit health and nutrition and focus only on the more traditional pre-academic domains (U.S. Department of Health and Human Services, 2015). Early childhood health and nutrition have as much impact on future growth, development, and academic success as pre-academic skill development, and should be intentionally addressed during these formative years (Albino et al., 2017; Ames, 2007; Asarnow et al., 2015; Campbell et al., 2014; Goodwin, 2010; Reynolds et al., 2014).

Impact of Health on the Lifespan

Health problems in early childhood have a strong correlation to health problems in adulthood (Black & Dewey, 2014; Goldfeld et al., 2017; Woolfenden et al., 2013). Childhood obesity if left untreated can persist into adulthood, which has implications for cardiovascular disease—and metabolic abnormalities such as diabetes, and morbidity (Lee & Won, 2015; Minniss et al., 2013; Skouteris et al., 2017). Oral health issues can also cause significant

concerns. Culler et al. (2017) found that untreated dental decay can interfere with children's growth and with consistent school attendance.

Factors Affecting Health and Development

Multiple determinants impact children's immediate health and can contribute to potential concerns with physical and mental health in adulthood (Ames, 2007). Those determinants include food insecurity, health insurance, childhood obesity, poverty, level of parental education, and nutrition (Gundersen, 2015; Lee & Won, 2015; Minniss et al., 2013). Early childhood programs have the potential to mitigate these determinants through comprehensive coaching with parents on issues related to health and nutrition, equipping families with education regarding healthy eating patterns and accessing nutritious food, providing gross motor and movement opportunities for children, and collaborating with families to maneuver the health care system in order to establish positive relationships with medical providers (Ammerman et al., 2007; Skouteris et al., 2017).

Summary of Findings

Early Childhood Settings and Young Children

Shonkoff and Phillips (2000) found that children in the United States spend measurable amounts of time in non-familial and out-of-home care. This translates to roughly 74% of children ages 3 to 6 years of age in some type of non-familial care, and 56% of those in a center-based childcare setting (Ammerman et al., 2007). Many children consume 50% to 100% of their recommended dietary allowances in child care settings and rely on unrelated adults to nurture and facilitate healthy nutrition attitudes, patterns of physical activity, and monitoring of physical health (Ammerman et al., 2007).

Despite the potential to play a significant role in the health and nutritional development of young children, most early childhood settings meet minimal requirements under state law and have a primary emphasis on pre-academic skill development (U. S. Department of Health and Human Services, 2015). A child's healthy development and nutritional intake has just as much impact on their future academic success as the development of pre-academic skills, yet few early childhood programs intentionally address these areas through comprehensive programming, monitoring, and parental coaching. Parental education coupled with intentional emphasis on health and nutrition in early childhood settings is necessary to prevent poor food choices and improve healthy trajectories for young children (Lee & Won, 2015). Early childhood programs could have tremendous impact on children's dental and oral health, nutrition, physical health, as well as with parents by providing critical information and coaching related to healthy development (Shonkoff & Fisher, 2013).

Health and Nutrition Issues Impacting Early Development

Dental and oral health. Dental disease is preventable, but dental decay is a common, costly oral health problem among young children (Wang, Henderson, & Harniman, 2013). According to Nowak and Casamassimo (2015), tooth decay and cavities, scientifically referred to as dental caries, have declined in prevalence in older children and adults, thanks to advances such as fluoride treatments in routine dental care. The same advances when applied to the early childhood population have not resulted in a similar outcome. In fact, the prevalence of early childhood dental caries continues to be a significant concern in regard to early physical health (Masterson & Sabbah, 2015; Nowak & Casamassimo, 2015). Children with untreated dental problems are more likely than children with good oral health to exhibit inconsistent school attendance, experience weight gain, and demonstrate learning and behavioral concerns (Culler et

al., 2017; Nowak & Casamassimo, 2015). To further complicate this issue, children with diverse racial and ethnic backgrounds such as Latino, American Indian, Alaska Native and African American populations have higher rates of poor oral health than children who are Caucasian (Albino et al., 2017).

Parental factors such as chronic stress, low educational attainment, oral health behavior, nutrition practices, and socioeconomic status influence children's oral health (Albino et al., 2017; Masterson & Sabbah, 2015). According to Nowak and Casamassimo (2015), children experiencing poverty may face multiple barriers that inhibit good oral health to include limits to preventive care and individualized treatment options, limited access to providers, and a lack of parental knowledge about preventive oral care in the home.

Physical health. Children who experience good health during their early childhood years are more likely to grow to be healthy adults (Black & Dewey, 2014; Campbell et al., 2014; Goldfeld et al., 2017; Morrison, Pikhart, Ruiz & Goldblatt, 2014; Rossin-Slater, 2015). Goldfeld et al. (2017) indicates healthy children are the "foundation for human capital and the basis for future community and economic development" (p. 1), encouraging communities to invest early in the healthy development of their youngest constituents. Children today have access to nutrient-poor packaged foods, their active play has decreased considerably, and local communities are characterized by decreased play and green spaces (Skouteris et al., 2017). An unfortunate by-product of these changes is the sharp increase in the number of very young children who are obese, as indicated by their body mass index (BMI) (Lee & Won, 2015; Skouteris et al., 2017). Obesity is one of the primary markers of healthy development and is linked to multiple health concerns in adulthood (Campbell et al., 2014; Gortmaker et al., 2015; Gundersen, 2015; Lee & Won, 2015).

In an effort to measure the benefit of high-quality early childhood programs on adult health, Campbell (2014) and her colleagues utilized current biomedical data collected on children who were randomly selected to participate in the Carolina Abecedarian Project (ABC) treatment group. The Carolina Abecedarian Project was conducted in the early 1970's in Chapel Hill North Carolina and is classified as a social experiment. The study measured the impact of a stimulating early childhood environment on the cognitive development of disadvantaged children by randomly assigning them to either a treatment or control group. The treatment group received comprehensive early intervention services as well as nutritious meals and preventive health care. What they discovered is that is that children who attended ABC in their first five years enjoyed better physical health in their mid-30s (e.g., lower prevalence of risk factors for cardiovascular/metabolic diseases), had higher rates of health insurance coverage, and had access to a hospital or physician's office care when sick than the group that did not receive comprehensive early intervention services (Campbell et al., 2014). Campbell and her colleagues also found no evidence of treatment effect from intervention that occurred past age five.

Nutrition. Nutritional environments in early childhood have a tremendous impact on the physical and dental health of young children (Ammerman et al., 2007). Gundersen (2015), found that families experiencing risk factors such as poverty, limited parental education and food insecurity may consume foods with lower nutritional values. Subsequently, foods loaded with sugar contribute to increased dental caries and cause weight gain in young children (Ammerman et al., 2007; Nowak & Casamassimo, 2015).

Early childhood programs have a unique opportunity to mitigate nutrition deficits if they are required by state and local licensing regulations to meet U.S. Department of Agriculture (USDA) guidelines (U.S. Department of Health and Human Services, 2015). Programs such as

the Child and Adult Care Food Program (CACFP), Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the National School Lunch Program (NSLP) have made an impact on food insecurity, but they have not been successful in regard to increasing the nutritional intake of families, particularly low-income families (Gundersen, 2015). In an effort to improve nutritional intake, legislation to restrict what can be purchased with SNAP benefits has actually backfired. Children most at-risk for nutritional deficits find themselves with families who are not participating in the program because of the restrictions (Gundersen, 2015).

Family and Environmental Implications in Early Childhood

The context of the immediate family has the most profound influence on the developing child, even more than childcare, preschool and home childcare settings (Shonkoff & Fisher, 2013; Shonkoff & Phillips, 2000). In regard to the role of the family and home environment in child health:

> Inequalities in their health and health-care access are intrinsically linked to the social determinants of health such as the safety and social capital of the community they live in, their family's socio-economic position and ethnicity and the impact these have on home environment and the choices their parents make. (Woolfenden et al., 2013, p. E365)

Families need strong pathways to healthcare to foster development, but many face significant barriers to access thus limiting their ability to meet the health and nutrition needs of their children (De Marco & Vernon-Feagans, 2013; Rossin-Slater, 2015; Woolfenden et al., 2013). Even in situations where children face biologically-based health concerns (e.g., cerebral palsy), there are inequities in health outcomes for children from vulnerable populations (Woolfenden et al., 2013).

Poverty is clearly the most important factor associated with overall health and access to preventive health care in early childhood (Ames, 2007; Bitsko et al., 2016; Richter et al., 2017; Rossin-Slater, 2015; Woolfenden et al., 2013). Ames (2007) identifies specific barriers to child health that include lack of transportation, parental time constraints, lower level of parental education, and speaking a primary language other than English. Many of these factors are associated with poverty (Ames, 2007; De Marco & Vernon-Feagans, 2013). Families also struggle with the complexity of the health care system and many lack a regular source of care through a medical home (Bitsko et al., 2016). This can be exacerbated by public versus private health insurance—families with access to private insurance tend to have increased access to primary and specialty care than those who rely on coverage through Medicaid or the State Children's Health Insurance Program (Ames, 2007).

Parents and caregivers faced with these barriers often experience greater personal stress as compared to individuals who have stable incomes, housing, transportation, and access to health care. High, prolonged levels of parental stress have been linked to increased dental caries, the inability to support preventive health care for themselves and their children, and disrupted attachment (Masterson & Sabbah, 2015; Morrison et al., 2014; Perry & Conners-Burrow, 2016). Early childhood programs that are connected with community resources and utilize coaching strategies to strengthen the parent's capacity to access resources for their child lead to healthier outcomes for children (Gortmaker et al., 2015; Minniss et al., 2013; Pérez-Escamilla, Cavallera, Tomlinson & Dua, 2017; Shonkoff & Fisher, 2013; Skouteris et al., 2017).

Implications of the Findings and Application to MOEC

The Metropolitan Omaha Educational Consortium (MOEC), founded 30 years ago, is a unique collaboration that includes 12 Public School Districts, 2 Educational Service Units, The

University of Nebraska Omaha, and two Community Colleges. MOEC strives to identify high-priority issues that face the community partners affiliated with the consortium, and address those issues through joint task forces and targeted projects. Additionally, MOEC strives to improve education in public schools and throughout higher education in the metropolitan area (MOEC, 2018).

Implications of Findings

This research brief applies to and has implications for the MOEC community in multiple ways. MOEC has established a goal that students will enter kindergarten ready for school. Additionally, there are goals related to successful transitions to postsecondary education and careers. The research presented in this brief demonstrates the core foundation of a healthy lifestyle that is necessary for children to achieve the goals established by the MOEC community, as well as to carry with them as they transition to adulthood, postsecondary education, and careers.

The sheer number of young children age 5 and younger in the MOEC community creates significant implications. According to First Five Nebraska (2018), there are 64,930 children ages 0-5 living in Douglas and Sarpy County alone (two of the Counties served by MOEC). Of those, approximately 23,509 (36%) are considered at-risk and over 48,000 (74%) spend time in out-of-home care (First Five Nebraska, 2018; Shonkoff & Phillips, 2000). Most of these children will enter kindergarten in one of the MOEC partner school districts. Therefore, it becomes critically important for MOEC to have an awareness of the quality of early intervention children are receiving in childcare/preschool settings prior to entering kindergarten, as this is a key factor in preparing children for success as they transition from early childhood to elementary school (Ferretti & Bub, 2017).

This brief provides the rationale for "quality" childcare/preschool settings to include intentional, sustained focus on health and nutrition in early childhood settings, particularly when the goal is to prepare children for success in school and, ultimately, to be productive, successful adults. Primary and secondary level students need a healthy foundation in order to minimize absences and improve their capacity for learning.

Health and Nutrition in Metropolitan Early Childhood Programs—The Reality

Childcare homes, center-based providers, and preschools are regulated by Nebraska Department of Health and Human Services (DHHS) child care licensing or Iowa Department of Human Services (IDHS) Licensing Rules (DHHS, 2014; IDHS, 2017). Many of the pre-kindergarten programs affiliated with MOEC community partners follow DHHS/IDHS licensing requirements, but most comply with the Nebraska Department of Education (NDE) Rule 11 (NDE, 2015). Health and nutrition requirements are minimal at best. Childcare licensing requires parents or caregivers to produce an immunization record within 30 days of enrollment (DHHS, 2014). NDE Rule 11 requires programs to "encourage sound safety, health, and nutritional practices," (2015, p.8) to comply with state immunization requirements, and to adhere to United States Department of Agriculture (USDA) nutrition guidelines for meals and snacks, but does not include any further expectations for health and nutrition education and direct support for families around healthy practices and preventive healthcare (DHHS, 2014). This brief presented a summary of the long-term impact on families, communities, development, learning, and future adult productivity should health and nutrition be overlooked during the first five years of a child's life. The healthy development and nutritional health of thousands of young learners is at stake.

Application to MOEC

Internal review of early childhood programs and services. MOEC districts can play a pivotal role in the healthy development of the youngest learners by auditing their local early childhood programs and services to identify where emphasis is placed on health and nutrition and where gaps exist. Curriculum should reflect health, nutrition, and a healthy lifestyle (e.g., opportunities for active play and movement), and should include direct instruction for children along with coaching opportunities for families and caregivers. Home visits should include conversations about preventive health care as well as coaching around healthy practices (e.g., dental hygiene; nutrition).

Implications for higher education. Higher education early childhood and teacher preparatory programs can also make a difference by embedding health and nutrition objectives into methods courses, providing strategies for prospective educators to talk with families about health, nutrition and medical/dental needs, and challenging prospective teachers to apply the same rigor to teaching and learning about healthy lifestyles as they do with language, mathematics and literacy.

Community partnerships. Other promising practices already underway to mitigate health and nutrition disparities that exist for many at-risk children and families in Omaha include partnerships between MOEC community school districts and community healthcare providers. A primary example includes OneWorld's School-Based Health Centers which exist in four Omaha Public School buildings. Creative partnerships with the metropolitan medical community can alleviate confusion and access barriers for hundreds of children and families. Staff who work directly with children and families should have a deep knowledge of community services and resources in order to connect families with services related to health and nutrition.

Implications for children and families. Healthy development, nutrition, dental health, and opportunity for movement during a child's earliest years forges a pathway for regular school attendance, academic success, and overall adult health and productivity. Early childhood learning environments provide a significant opportunity to foster healthy development through curriculum, instruction and daily routines and activities. Many early childhood programs and learning environments in the metropolitan area are meeting minimal health and nutrition standards, but greater intentionality and emphasis is required in order to prevent long-term concerns that could impact MOEC's Strategic Priorities of readiness for kindergarten and postsecondary success.

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