

The role of the nurse practitioner and childhood Obesity

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Abstract

To remove barriers that prevent nurses from leading, changing and advancing health care, the Robert Wood Johnson Foundation (RWJF), and the Institute of Medicine (IOM) launched an initiative in 2008 that would transform the nursing profession. In 2010, the appointed RWJF Committee on the Future of Nursing, made the recommendation at the IOM, that nurses practice to the full extent of their education and training; not for the purpose of saving money, but to be a part of the transformation of a seamless, quality healthcare delivery system that improves health outcomes (The future of nursing: the Institute of Medicine (IOM) issues report, 2010; Russell-Babin, Wurmser, 2016).

The Centers for Disease Control (CDC) (2011 - 2014) reported that in the United States, more than one-third of adults and 17% of children between the ages of two and nineteen are obese (Ogden, Carroll, Kit, & Flegal, 2014). These epidemic numbers are of great concern worldwide when the long-term effects of diabetes, cardiovascular disease, hypertension, and cancer will have the potential to overwhelm healthcare systems (Bergman, Stefanovski, Buchanan, Sumner, Reynolds, Sebring, Xiang, & Watanabe, 2011). The Nurse Practitioner will transform healthcare and the effects of co-morbidities, such as obesity on the nation's population (Russell-Babin, Wurmser, 2016).

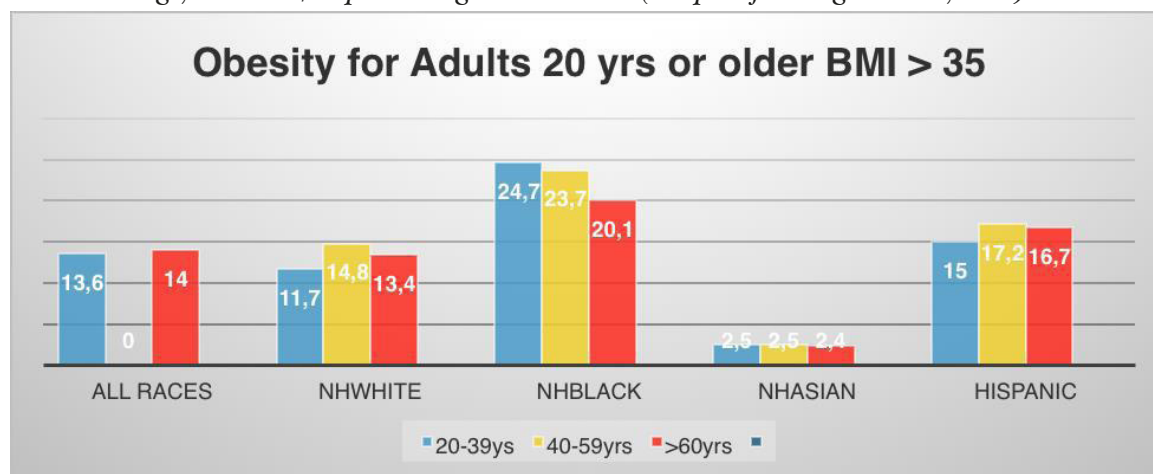
Introduction

The Nurse Practitioner (NP) is a licensed health care professional who has advanced nursing education and clinical preparation that uniquely qualifies the NP to provide patient centered care that is essential to meeting the needs of a nation. Regardless of the culture and geographic location of a population, NPs are educated to practice in unpredictable conditions using their clinical experience and knowledge, integrating all available information into the decision-making process. The NP plays a pivotal role in the management of acute and chronic conditions, health promotion and coordination of care in acute, sub-acute, and community settings (American Association of Nurse Practitioners (AANP), 2017).

The Centers for Disease Control (CDC) (2011-2014) reported that in the United States more than one-third of adults and 17% of children between the ages of two and nineteen are obese (Ogden, Carroll, Kit, & Flegal, 2014) (see Figure 1.1). The Health and Human Services (2010) reported that there was a need to understand and reverse the life-threatening consequences of obesity in these high-risk populations (Go, Mozaffarian, Roger, Benjamin, Berry, Borden, & Turner, 2013). Since nurse practitioner programs became accredited, the function was to prepare nurses to be advanced providers of quality health care in complicated health care systems. The NP is the most suitable health care professional capable of providing quality preventative care, education, and the treatment of chronic illnesses using

evidence based research (Hutt, Newhouse, White, Johantgen, Bass, Zangaro, Wilson, Fountain, Steinwachs, Heindel, and Weiner, 2013).

Figure 1.1. Prevalence of High Body Mass Index (BMI) by Selected Cut Points for Adults >20 Years, by Age, and Race/Hispanic Origin 2011-2012a (adapted from Ogden et al, 2014).



NH White – Non-Hispanic white NH Black – Non-Hispanic Black NH Asian – Non-Hispanic Asian

Obesity

To address this major global health and nutrition problem, there needs to be a clear understanding of the pathogenesis of obesity. When determining how to measure adiposity in children and adults it becomes necessary to examine the body's adipose tissue composition in utero and determine, using fetal tissue composition, findings that will remain important throughout the lifetime of an individual. In Toro-Ramos, et al. (2015) gestational cadaver and fetal studies, the timing and accretion rates of both adipose and lean tissue are able to be determined. This information, when presented in quantitative and qualitative form, is then extremely useful in diagnostics (Toro-Ramos, Paley, Pi-Sunyer, & Gallagher, 2015). Unquestionably, there is a need for an increased understanding of how the body's composition is associated with chronic diseases in the adult population (Toro-Ramos, et al, 2015).

Knittle, Timmers, Ginsberg-Fellner, Brown, & Katz (1979) collected data relating to the rate and type of adipose tissue development in children and connected its role to the development of fat deposits in adult subjects. The amount of brown adipose tissue deposited was correlated inversely with the BMI and shown to have a potential role in adult metabolism and obesity (Cypess, Lehman, Williams, Tal, Rodman, Goldfine, Kuo, Palmer, Tseng, Doria, Kolodny, & Kahn, 2009). The way obesity is viewed in the research of Choquet & Meyre (2011) has led to explaining a small piece of the heritability of obesity and the discovery of genetic links to eight monogenic genes and four polygenic genes.

Choquet & Meyre (2011) confirmed that after 15 years of gene identification, there are predisposed subgroups that are particularly vulnerable to obesity. Traditional approaches for the management

of overweight and obese persons has poor long-term efficacy. Therefore, considering ethnicity, environmental factors and prevention is the better approach to the obesity epidemic (Choquet, & Meyre, 2011). The increase in childhood obesity and the role it plays in the development of chronic diseases is of great concern worldwide (Cole, 2004).

The increase in diabetes, cardiovascular disease, hypertension, and cancer throughout the United States and other affluent countries will overwhelm healthcare systems worldwide if efforts are not made to reverse the long-term effects of childhood obesity (Bergman, Stefanovski, Buchanan, Sumner, Reynolds, Sebring, Xiang, & Watanabe, 2011). Current trends of obesity in the U.S. suggest that the steady rise in life expectancy occurring over the past two centuries may soon come to an end (Olshansky, Pessaro, Hershov, Leyden, Carnes, Brody, Hayflick, Butler, Allison, & Ludwig, 2005). Pediatric obesity while continuing to increase in recent years has become a serious public health problem that frequently goes unrecognized (Hager, McGill, Black, 2010). Pediatric and family nurse practitioners who conduct culturally competent assessments of children can teach parents how to identify, explore, and eliminate factors that influence the development of adiposity in their children.

'Purnell Model' for cultural competence

The Purnell Model for Cultural Competence (2000, 2002) provides the context for understanding the primary and secondary characteristics of culture which determine variations in beliefs, practices, and values of individuals and their influence on perceptions about

body image. The metaparadigm concepts: person, family and community, support the notion that the child does not stand alone and is defined in the context of the family and the broader arena of community (Purnell, 2000).

With obesity, a global crisis associated with widespread morbidity and mortality in adults, and more recently identified in children, it is the Purnell Model for Cultural Competence (2000, 2002) that may influence interventions to reverse this trend and guide NPs in their practice (Abrams & Levitt Katz, 2011). Disparities in health and healthcare exist across ethnic, social, and economic groups. NPs and other health care providers need to understand and respect cultural diversity in order to achieve a high level of cultural competency. A cultural perspective and understanding of those at high risk for disease processes that present later in life require practitioners to follow a model that provides a framework that includes questions asked of all ethnic groups and that formulates the appropriate individual plan of care (Gower, Nagy, Trowbridge, Duesenberg, Goran, 1998) (see Figure 1.2).

Figure 1.2. Conceptual model for the development and validation of a silhouette scale to measure a mothers' perception of body size of their two to four year old children (generated from 'The Purnell Model for Cultural Competence', 2014).



Nurse practitioners and cultural competence

Cultural competence, a sensitivity to and understanding of issues of culture, race, gender and sexual orientation, is a major requirement for the improvement of patient outcomes and patient compliance (Dunn, 2002). Cultural competence is defined as the process that occurs when cultural care values, expressions, or patterns are known and used meaningfully by the nurse and at the nurses' highest level of ability as an NP (Leninger, 2008). Langer (2002) found that culturally competent care leads to negotiation, facilitation of interaction, and adaptation of behavior that will result in compliance and positive outcomes. Cultural competence is a strategy to improve, reduce or eliminate disparities in health care, particularly those related to provider comfort with the topic of obesity and children (Eliminowski, 2015; Hessler, 2015).

Nurse practitioners and childhood obesity challenges

The advanced practice abilities of NPs and the use of these abilities to combat the overweight and obesity epidemic in primary care is of monumental importance. The etiology of this widespread global health issue is multifactorial, with neither genetics nor environmental elements as the sole culprit (Plourde, 2006). Sullivan (2014) suggests that obesity prevention should begin in the prenatal period. Breastfeeding, which research has shown to be protective against childhood obesity, needs to be encouraged by childbirth educators and obstetric nurse practitioners. As a pediatric or family nurse practitioner, paying close attention to the growth trend of a child is important. Identifying the right

time to start a conversation with parents regarding their home or community as an obesogenic environment is critical (Hessler, 2015).

An obesogenic environment is an environment or area that promotes weight gain and obesity in individuals or populations (Mackenbach, Rutter, Compernelle, Glonti, Oppert, Charreire, DeBourdeaudhuij, Brug, Nijpels, Lakerveld, 2014). It is the sum of the influence that surroundings, opportunities, or life circumstances have on obesity (Swinburn & Egger, 2002). People interact with the environment in multiple settings. The micro-environment includes the local schools, homes, and neighborhoods; with the macro-environment consisting of personal beliefs, education, health systems, governments, and the food industry. Managing both environments is critical to make change with the macro-environment proving to be the more difficult one to modify (Swinburn, Egger, Raza, 1999).

It is a challenge to identify the physical and/or environmental factors that have the greatest impact on a child becoming overweight or obese (Machenbach, Rutter, Compernelle, Glonti, Oppert, Charreire, DeBourdeaudhuij, Brug, Nijpels, and Lakerveld, 2014). With certain environments more obesogenic than others, the family and pediatric nurse practitioners need to be aware of all the micro and macro environmental factors that could influence the physical size of the child.

Summary

The risk factors present in childhood are significant predictors of the development

of obesity and the inevitable onset of diabetes, hypertension, heart disease, and stroke that occur in the general adult population. Obesity in children and adults has become one of the most important health problems worldwide (Faienza, Wang, Fruhbeck, Garruti, and Portincasa, 2016). It is the advanced complexity and extent of knowledge, competencies and the multifaceted decision-making that expands the professional role of a registered nurse to that of an advanced practice nurse (Kao, 2015).

Nurse Practitioners make up the fastest growing portion of the primary care workforce creating numerous opportunities for NPs to be involved in research. Ninety percent of the 192,000 nurse practitioners are credentialed to practice in the United States (U.S.) and are actively practicing and transforming primary care delivery systems nationwide. As advanced practice nurses, NPs are in key positions to lead and participate in research that is meaningful to their evidence-based practice environment, providing safe and competent care (Lambert & Housden, 2017). Nurse Practitioners are licensed, independent providers, with the ability to diagnose, prescribe, order and interpret results of testing, while maintaining a multidisciplinary approach (SangsterGormley, 2016). Nurse Practitioners are uniquely qualified to meet the global challenges of chronic disease and maximize positive outcomes related to the obesity epidemic (American Association of Nurse Practitioners, 2017).

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