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Dietary and physical activity behaviors of adults with developmental disabilities and their direct support professional providers

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ABSTRACT

Background: People with developmental disabilities lead more sedentary lifestyles, consume poorer diets, as well as have higher rates of chronic conditions such as diabetes and heart disease when compared to members of the general population. Direct support professionals play a large social role in the lives of their clients with developmental disabilities, and thus have the ability to influence the health behaviors of their clients.

Objectives: The overall purpose of this study was to examine the relationship between the dietary and physical activity behaviors of direct support professionals and their clients with developmental disabilities, as well as to assess how direct support professionals facilitate the health behaviors of their clients.

Methods: A statewide random sample of direct support professionals ($n = 398$) completed an online survey about their own dietary/physical activity behaviors and these same health behaviors of their adult clients with developmental disabilities. Pearson/Spearman correlations were used to examine the relationship between the health behaviors of direct support professionals and their clients with developmental disabilities.

Results: Small-to-moderate correlations (ρ or $r = 0.127\text{--}0.333$) between direct support professionals' and clients' behaviors existed for all dietary and physical activity health behaviors except for participation in some sort of moderate-to-vigorous physical activity each week ($\rho = 0.098$, $p = 0.06$).

Conclusions: Direct support professionals appear to play a role in the dietary/physical activity behaviors of their clients; however, future research on this topic should also include other key members of the social networks of adults with developmental disabilities such as family members, roommates, and day-habilitation providers.

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1. Introduction

Obesity is one of the biggest public health problems facing the United States, as 34.9% of the general population is considered obese and thus are at risk for heart disease and diabetes, as well as other conditions such as high blood pressure, stroke, and cancer.^{1,2} Eating a poor diet and being physically inactive are two modifiable lifestyle behaviors that contribute to obesity among all members of society.² Studies have shown that adults with developmental

disabilities experience similar or slightly higher obesity rates than members of the general population.^{3–5} The dietary and physical activity behaviors of adults with developmental disabilities have not yet been assessed on a population-level; however, in smaller studies, researchers have consistently noted that the majority of adults with developmental disabilities do not meet the national recommendations for physical activity and dietary intake.^{6–11} People with developmental disabilities often rely on other people, such as their direct support professional providers, to assist them with making decisions related to their health behaviors. The primary role of direct support professionals is to help people with developmental disabilities live independent, self-directed lives, while assisting them with activities of daily living such as cooking, cleaning, grocery shopping, transportation, grooming and

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finances.^{12–14} Direct support professionals make up a large part of the social networks for people with developmental disabilities, and many people with developmental disabilities view their direct support professional providers as role-models and as friends.^{12,15} The concept of social influence is a large part of Social Cognitive Theory, which posits that one way behavior can be influenced is through members of one's social network. Role-modeling (e.g., observing others perform certain health behaviors), incentive motivation (e.g., using rewards/punishments to modify behavior), and facilitation (e.g., providing tools or resources that make behaviors easier to perform) are key constructs of Social Cognitive Theory which help to explain how social influences can shape behavior.^{16,17} Research has shown how people, especially peers, influence the health behaviors (e.g., physical activity, dietary, smoking) of members of their social networks; however, the potential influence that direct support professionals have over the health behaviors of their clients with developmental disabilities has yet to be explored.^{18–21}

Because direct support professionals play such a large social role in the lives of their adult clients with developmental disabilities, the overall purpose of this study was to examine the relationship between the dietary and physical activity behaviors of direct support professionals and their clients with developmental disabilities. It was hypothesized, based on what is known about role-modeling health behaviors, that there would be a positive relationship between the dietary and physical activity behaviors of direct support professionals and their clients with developmental disabilities. Two additional exploratory aims of this study were to examine how health promotion strategies (e.g., role-modeling, incentive motivation) used by direct support professionals are related to their client's dietary and physical activity behaviors, and to examine how a client's individual preference for a particular health behavior is associated with a direct support professional's perception of his/her ability to help the client perform healthy behaviors.

2. Methods

2.1. Participants

The sampling frame consisted of direct support professionals ($n = 5283$) who were listed as homemaker personal care aides in Ohio's Department of Developmental Disabilities online provider search database. To be eligible for the survey, direct support professionals had to have: 1) been 18 years or older; 2) worked with at least one adult client with a developmental disability in the state of Ohio 3) worked at least 10 hours a week with the client identified in #2; 4) worked as a direct support professional for the client in #2 for at least three months; 5) not been the parent of the client identified in #2; 6) received payment from either the Individual Options waiver or the Level One waiver (both waivers allow people with developmental disabilities to receive home-based care services from direct support professionals); and 7) worked as an independent provider of services.

2.2. Procedures

This study was approved by The Ohio State University's Institutional Review Board. Participants were recruited via e-mail between March 2015 and July 2015 to complete an online survey on [SurveyMonkey.com](http://www.surveymonkey.com). Survey invitations were sent in three batches during this timeframe and sampled participants received up to three reminder e-mails. Those who started the survey, but who did not finish, received up to three reminder phone calls. A total of 4,682 survey invitations (88.6% of the sampling frame) were sent and interested participants completed a brief screener to determine

eligibility for full participation in the study. Surveys took approximately 25 min to complete and participants were given a \$20 electronic gift card to an online mass merchant of their choice as a thank you for their time. Participants were asked if they were willing to be contacted in the future; of those who answered yes, 17% were contacted two-weeks later and asked to complete the survey a second time to establish test-retest reliability of survey items. Test-retest reliability was considered acceptable if r or ρ was greater than 0.70; however, if test-retest reliability was less than 0.70 then a Kappa coefficient was calculated (only items with fair agreement or higher, $\kappa = 0.20 +$ according to Landis and Koch (1977) were kept in the analysis).²²

2.3. Measures

Prior to implementation of the full survey, the questionnaire was pre-tested using cognitive interviews with five direct support professionals. Changes to the survey were made based on these cognitive interviews. The overarching purpose of this survey was to quantify the health behaviors (e.g., smoking, dietary, physical activity) of direct support professionals and their clients with developmental disabilities—this manuscript focuses on dietary and physical activity health behaviors.

2.3.1. Demographic characteristics

Age (in years), race (white/African American/other) and gender (male/female) were collected for both direct support professionals and their clients with developmental disabilities. Direct support professionals were asked to answer survey questions about an adult client with a developmental disability; if they provided care to more than one adult client, they were asked to report on the client that they provided the most hours of care to each week. For direct support professionals, educational status (high school or general education development (GED)/some college or associate degree/college+) and marital status (married/never married/unmarried couple/divorced/separated/widowed) were also collected. For clients with developmental disabilities, direct support professionals reported on the type of developmental disability the client had (autism, cerebral palsy, Down syndrome, intellectual disability, two or more disabilities, or other).

2.3.2. Fruit and vegetable consumption

This was assessed using two brief survey items that have been shown to have acceptable psychometric properties.²³ Participants were asked: "How many servings of vegetables do you/does your client eat each day?" and "How many servings of fruit do you/does your client eat or drink each day?" The number of fruits and vegetables were added together to obtain the total daily servings of fruits and vegetables consumed. Test-retest reliability for daily fruit and vegetable consumption ranged from $r = 0.597$ ($\kappa = 0.672$) for direct support professionals to $r = 0.729$ for clients with developmental disabilities.

2.3.3. Sugar-sweetened beverage consumption

Participants were asked: "In a typical week, during the past 30 days, how often did you/did your client drink regular soda pop that contains sugar?" Test-retest reliability was $r = 0.779$ for direct support professionals and $r = 0.918$ for clients with developmental disabilities.

2.3.4. Fast-food consumption

This was measured by asking participants, "During the past 7 days, how many times did you/did your client eat fast food, including fast food meals eaten at work, at home or at fast-food restaurants, carryout or drive thru?" Responses were: never, once

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