Predictors of Annual and Early Turnover Among Direct Support Professionals: National Core Indicators Staff Stability Survey

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Abstract

Direct support professionals (DSPs) provide a broad range of supports in a variety of settings to people with intellectual and developmental disabilities (IDD) that enables people to live, work, and participate in their communities. Despite the crucial importance in ensuring supports for community participation of people with IDD, high rates of annual turnover among DSPs in organizations that employ them has been documented for decades. This study utilizes National Core Indicators Staff Stability data from 2016 to examine the impact of organizational and state level factors related to DSP turnover, including annual DSP turnover and the percentage of those DSPs who left positions in less than six months. At the organizational level, a higher turnover rate in the last 12 months was significantly related to lower DSP wages and not offering health insurance. At the state level, a higher turnover rate in the last 12 months was significantly related to a lower percentage of people living in individualized settings and lower per capita Medicaid spending. For early turnover at the organizational level, a higher percent of leavers within six months of tenure was significantly related to less offering of paid time off and health insurance, higher vacancy rates, higher proportion of part-time DSPs, and lower overall staff sizes.

*Keywords*: Direct Support Professional, Turnover, IDD, National Core Indicators, Staff Stability

**Predictors of Annual and Early Turnover Among Direct Support Professionals: National**

**Core Indicators Staff Stability**

Direct support professionals (DSPs) provide support to people with intellectual and

developmental disabilities (IDD) that enables them to live, work, and participate in their

communities. DSPs work in a variety of home and community-based settings, including family

homes, group homes, and vocational and job sites. They provide a broad range of individualized

supports so that people with IDD can access similar experiences and opportunities as people

without IDD. Core competencies for DSPs reflect a wide array of skills needed, including

support for health and hygiene, identifying and providing person-centered services according to

peoples' goals, supporting self-determination, and full and active community participation

(Centers for Medicare and Medicaid Services, 2014; National Alliance on Direct Support

Professionals, 2016). Supports provided by DSPs are a cornerstone to community participation

for people with IDD. Despite the crucial importance of these supports, high rates of annual

turnover among DSPs in organizations that employ them has been documented for over thirty

years (Lakin & Bruininks, 1981; Barry Associates, 1999; Test et al., 1999; Oklahoma

Developmental Disabilities Service Division, 2000; Hewitt et al., 2000; ANCOR 2001;

Bogenshutz et al., 2014). The shortage of a qualified, competent and stable DSP workforce

curtails peoples' opportunities in the community. As such, this long-term, sustained workforce

shortage was recently identified as pervasive systems failure in long term services and supports

(Hewitt, Macbeth, Merrill & Kleist, 2018). Solutions to address high rates of DSP turnover are

critical. The purpose of this secondary data analysis is to examine the impact of organizational

and state level factors related to turnover of DSPs using data from National Core Indicators Staff

Stability Survey. It describes and evaluates trends in the rate of overall DSP turnover during

2016, and the percentage of those DSPs who left their position in less than six months. These findings can be used to inform policy and advocacy efforts for organizational and state level changes to stabilize this vital workforce.

The direct support workforce is one of the fastest growing occupations in the U.S. (PHI, 2014; BLS, 2015). To support community living for people with IDD, it is estimated that an additional 900,000 full time equivalent DSPs will be needed annually by the year 2020 (Hewitt, 2013), and the problem is expected to become even larger in coming years (National Academies of Sciences, Engineering, and Medicine, 2016). Average annual turnover rates in 20 states and the District of Columbia for organizations that support people with IDD are 45.5% (NASDDDS & HSRI, 2018). This can be compared to the national average of 3.4% total separations across all industries in December 2016 (BLS, 2017). According to National Core Indicators Staff Stability Survey, of those DSPs who left their positions, 38% had been employed in their position for less than six months, and an additional 21% had been employed in their position between six to 12 months when they left. This means that nearly 60 percent of the DSPs who left in 2016 had been employed for less than one year in their position. These high rates of turnover are costly on a number of levels. Turnover is costly to people who receive supports, for loved ones who often take up support responsibilities when no qualified DSP can be found, and for organization who have to recruit and replace workers given such a high rate of turnover.

People who rely on supports provided by DSPs report experiencing lower quality of life when stable, reliable supports cannot be found. A study of 1,342 people with IDD who participated in a CQL Personal Outcomes Measures interview analyzed the impact of DSP turnover in the previous two years on 21 indicators that are aligned with quality of life (Friedman, 2018). DSP turnover impacted 17 of 21 outcome areas including peoples' sense of

safety, health, interactions with others in the community, participation in community life, friendships and intimate relationships, being treated with fairness and respect, developing natural supports, choice in where and with whom to live, choice in services, among others. Fifty six percent of people had experienced DSP turnover in the last two years. An earlier study among people receiving supports found that DSP turnover increased peoples' feelings of sadness, and that they found it difficult to develop trust and trusting relationships with new DSPs consistently entering their life (Test et al., 2003). People reported feelings of responsibility and self-blame when DSPs left their job.

When DSP staff cannot be recruited, hired and maintained to provide supports for people who require them to live and work in the community, provision of supports can fall on family members and loved ones. Family members have reported taking on support responsibilities, and missing work and other opportunities when qualified and reliable DSPs cannot be found (PCPID, 2017; Anderson, Larson & Wuorio, 2011). Inconsistencies in supports can curtail career opportunities and even the ability to maintain employment if direct support for their loved one cannot be found. Using the National Health Interview Survey Disability Supplement, Anderson and colleagues (2002) found that 53% of parents reported not taking a job, working fewer hours, leaving the workforce, turning down a promotion, and other major career concessions as a result of caring for a child with IDD. Furthermore, supports are increasingly provided in family homes (Larson, Eschenbacher, Anderson, Taylor, Pettingell, & Hewitt, 2018) which can leave families unable to leave home to attend work or any other community opportunities when reliable DSPs cannot be found to support their loved one.

A high rate of DSP turnover is also costly for human service organizations, and state budgets more broadly. In 2004, Larson and colleagues estimated turnover costs at $3,278 per

DSP who leaves the organization, including separation costs, training costs, and hiring costs (Larson et al., 2016). In 2009, these costs were estimated at $4,872 per DSP (ANCOR, 2010). These aggregated costs are substantial with turnover rates nearing 50% of the workforce annually, with costs related to turnover estimated at over $2.3 billion nationally (PCPID, 2017). Efforts to understand factors related to turnover on both organizational and state level can contribute to problem solving efforts to stabilize the DSP workforce.

**National Core Indicators Staff Stability Survey**

Starting in 2014, National Core Indicators (NCI), an initiative of the National Association of State Directors of Developmental Disabilities Services (NASDDDS) and the Human Services Research Institute (HSRI), began collecting organizational level data on the direct support workforce (NCI, 2014). The NCI Staff Stability Survey was developed in collaboration with the National Direct Service Resource Center to assess critical and relevant information about DSP workforce stability, wages, benefits and recruitment and retention strategies (NCI, 2014). This study is the first to examine trends in organizational and state level factors related to DSP turnover using data from the NCI Staff Stability Survey. Its purpose was investigate organizational factors, including wages, number of annual overtime hours per DSP, provision of paid time off, provision of health insurance, and the ratio of part time DSPs employed in the organization on two outcomes: annual DSP turnover and early turnover defined as the rate of DSPs who turned over with six months or less. State level factors including, state unemployment rate, percentage of people with IDD living in individualized, family, and institutional settings, per capita Medicaid spending, and participation in Medicaid expansion, were also analyzed.

**Organizational level predictors**

**DSP Wages.** The average hourly DSP wage in the National Core Indicators 2016 Staff Stability Survey was $11.76 per hour (NASDDDS & HSRI, 2018). For full time work, this is below the federal poverty line for a family of four in the same year (ASPE, 2019). Several studies have found that over half of all DSPs utilize public benefits because they cannot meet their basic expenses (Hewitt, Pettingell, & Kramme, 2019; PHI, 2015). Furthermore, wages paid to the direct support workforce have not increased in over a decade when adjusting for inflation (Campbell, 2018). Despite years of experience in the field, DSPs wages paid have not kept up with the increased level of skill developed through the years of service compared to new employees hired in the organization. The average hourly starting pay for DSPs in 2016 was $10.79 (NASDDDS & HSRI, 2018). In a secondary data analysis of factors related to turnover of 2,221 certified nursing assistants, an additional dollar per hour in wages was associated with 2.1 added months of tenure (Wiener et al., 2009). Powers and Powers (2010) found that a 10% increase in pay for DSPs providing supports for people with IDD reduced organizational turnover rates by three percentage points, a similar result to the ANCOR wage study that found that every $1 increase in DSP starting wage predicted a 3.61% decrease in DSP turnover (Anderson-Hoyt, McGee-Trenhaile, Gortmaker, 2010).

**Number of overtime hours**. The DSP workforce has experienced high vacancy rates (9.8% among full time DSP positions and 15.4% among part time DSP positions in 2016; NASDDDS & HSRI, 2018). This can mean that other DSPs cover open shifts in order to provide needed supports for people. The average number of overtime hours paid to direct support workers by organization in Minnesota in 2017 was 8,047 (Pettingell et al., 2019). Sometimes organizations expect supervisors to work extra hours to fill shifts that are open due to unfilled positions (Pettingell et al., 2019), but other times DSPs can work these hours and earn overtime

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pay at a rate of time and a half. Research on the impact of overtime hours on turnover is scarce. Overtime hours may be an important source of income that keeps dedicated DSPs in their job by earning a higher rate of pay. Test and colleagues (2003) found that over one third of DSPs work a second or third job. A recent study in Minnesota of the direct support workforce found that over 28% work at least one additional job, with some working three additional jobs (Hewitt et al, 2019). However, it may also lead to supervisor and/or DSP exhaustion by working extra hours. Further, some settings where people receive supports may compel organizations to pay a higher number of overtime hours. Group homes and institutional settings may require overtime to fill vacant shiftssupport provided, while home settings where people receiving supports live with their family or in their individual homes may not require that organizations pay DSPs overtime for filling vacant shifts because family steps in when DSPs are not available (Anderson et al., 2011).

**Paid time off.** Organizations provide access to paid time off for DSPs in a variety of ways, including paid sick time, paid vacation time, and general availability of paid time off that is not specific to being sick or taking vacation. In 2016, 33.3% of organizations provided paid time off to full time DSPs, 31.5% provide paid sick time, and 39.2% provided paid vacation time (NASDDDS & HSRI, 2018). Among direct support workers, there is a high rate of injury (McCaughey et al., 2012), and indicators of workplace burnout (Skirrow et al., 2007) especially among full time workers (Vassos et al., 2012). Provision of paid time off may be an important way of keeping DSPs in their job when they experience illness, exhaustion, burnout or other personal situations.

**Access to health insurance benefits.** Similar to providing paid time off, health insurance is another benefit that providers report difficulty making accessible to DSPs based on costs. In

2016, only 14.5% of providers offered health insurance to all employees, while 66% offered

health insurance benefits to full time DSPs only (NASDDS & HSRI, 2018). This is down from a

study in 16 sites providing residential and day services to people with IDD in 2009-2011 in

Minnesota, where all organizations reported offering health care benefits to some employees

although the number of hours employees had to work to obtain the benefits varied considerably

across site (Bogenshutz et al., 2014). Yet, a recent study demonstrated that even when health

insurance is offered to employees, only about 38% actually utilize the benefits (Pettingell et al.,

2019). Benefits may be too costly for DSPs to afford; as an alternative they may access benefits

through public assistance or another source, such as a spouse or through a second job.

**Percentage of part time DSPs.** The direct support workforce is comprised of a large

percentage of part time workers. About 1/3 of the direct support workforce employed by

organizations that participated in the Staff Stability Survey were part time employees (NASDDS

& HSRI, 2018). In Minnesota in 2017, over half of direct support workers were part time

positions (Pettingell et al., 2019). In both of these studies, rates of turnover are higher among part

time DSPs, and part time status may limit availability of benefits, and make it more difficult to

consider direct support as a career or long term employment option.

**Covariates**

**Vacancy rates.** There is an increased demand for community-based supports and as a

results, this field is struggling to keep workers. Demographic and economic changes in the

United States, including an aging population and competitive wages, are contributing factors to

high vacancy rates for DSP positions in long term services and supports. High vacancy rates may

mean that organizations are unable to meet the demand for services (Hewitt et al., 2015), and

people receiving supports are unable to live fully in the community, including going to work,

participating in community activities and enjoying time with friends and family. Vacancy rates among full-time DSPs was 9.8% in 2016, but part time vacancy rates were higher at 15.4% during the same period (NASDDDS & HSRI, 2018).

**Overall staff size**. The size of an organization and number of staff may mean that there are different demands placed on DSPs. The number of employees on organization's payroll vary greatly within and across states, with a range of 35.6-214.0 staff, with the average staff size of 102.5 and the median of 54.3 (NASDDDS & HSRI, 2018). ~~The size of an organization may also impact benefit options available for the staff.~~ Powers and Powers (2010) found that an increase of 20 employees on staff in an organization increased turnover rates between .29-.40%. The size of an organization may also impact benefit options available for the staff.

**Number of types of services provided**. Organizations that deliver home and community based services provide differing types of services, including residential, in-home supports, and day or employment services. Some organizations provide only one type of service, while others provide two or three types. Wages in non-residential and vocational programs supporting people with IDD have been historically higher (e.g., Bogenshutz et al., 2014), and ratios of part time workers differ across these service types. In 2016, DSPs providing non-residential supports in day or work programs earned an average of $12.04, while DSPs providing in-home supports earned $11.62, and DSPs providing residential supports earned $11.41 (NASDDDS & HSRI, 2018).

**State level predictors**

State level differences in policies and practices can have an impact on the delivery of services (Larson et al., 2018). Houseworth, Stancliffe, and Ticha (2018) utilized multilevel modeling to demonstrate the impact of state-level differences in addition to individual level

differences on aspects of peoples' choices when examining 2013-14 National Core Indicators data from the Adult and Consumer Survey. State-level factors were strongly related to support-related choices, including with whom and where the person lived, staff members and case managers supporting the person, and the types of day or work activities in which the person participated. For example, a higher proportion of people with IDD living independently in a state predicted more support-related choices. Several state level factors are examined in this paper to quantify the importance of state policy differences and to detect trends in DSP turnover related to state level policies, specifically state unemployment rate, percentage of people with IDD living in individualized, family, and institutional settings, per capita Medicaid spending, and participation in Medicaid expansion.

**State unemployment rate**. The economic recession that began in 2007 resulted in the loss of employment opportunities associated with it and temporarily created a larger pool of applicants for these jobs. As recovery occurred, the pool of applicants for DSP positions has decreased along with the quality of applicants, given that applicants have many options for employment. Among human service workers, a higher unemployment rate has been positively associated with longer tenure in this workforce (Wiener et al., 2009; Powers & Powers, 2010). Rising vacancy rates in the last several years certainly could be associated with lower state unemployment rates.

**Settings where people with IDD live (individualized, family, and institutional settings)**. More people in the United States in the last decades have received services and supports outside of institutional settings than in previous generations (Larson et al, 2018). Across states, of those people who received long-term services and supports in 2016, 58% lived in the home of a family member, 25% lived in a group home or institutional care facility for people

with IDD, 12% lived in a home they owned or leased, and 5% lived in a host or foster home (Larson et al., 2018).

**Per capita Medicaid spending**. Differences between state spending can be attributed to population density differences between states. One way to examine these differences is to divide the total amount of a states' Medicaid spending on the state's overall population to get the per capita Medicaid spending by state. States vary greatly in these expenditures from $292 to $17, with an average of $110 (Larson et al., 2018). This may be an influencing factor on turnover and vacancy rates of the DSP workforce.

**Participation in Medicaid expansion**. The Supreme Court's 2012 ruling on the Affordable Care Act (ACA) allowed states to opt out of the law's Medicaid expansion, which was designed to lessen the requirements for Medicaid eligibility to cover previously ineligible groups, namely the working poor. The ruling left the decision to expand or not to each state, largely decided by governors and/or state legislators. Heretofore, 33 states have expanded Medicaid. In 2018, 30% of direct support workers in Minnesota indicated that they rely on a government paid program (Medicare, Medicaid, Tricare) for health insurance, and 71% utilize some sort of public or government paid health benefits (Hewitt et al., 2019). Using American Consumer Survey data from 2016, 39% of U.S. home care workers accessed health insurance through Medicaid, Medicare or another public source, and 18% lacked health insurance altogether (Campbell, 2018).

**Purpose of the Current Study**

The purpose of the current study is to examine the impact of organizational and state-level factors on DSP turnover by conducting secondary data analysis of a random sample of 1,406 organizations that provide supports and services to adults with IDD in 20 states and the

District of Columbia using the NCI 2016 Staff Stability Survey. This study seeks to describe and

evaluate trends in: (1) the rate of overall DSP turnover in 2016; and (2) the percentage of DSP

early turnover, defined as those who left their position in less than six months from their date of

hire. Organizational and state-level factors related to each are examined. The two research

questions included:

1.  What are the organizational level predictors of turnover, as controlled for by vacancy

    rate, number of services provided, and organizational size?

2.  What state factors are related to organizational level predictors of turnover, as controlled

    for by vacancy rate, number of services provided, and organizational size?

## Method

**Instrument: NCI 2016 Staff Stability Survey**

National Core Indicators (NCI) is a combined effort of 20 years between the National

Association of State Directors of Developmental Disabilities Services (NASDDDS) and the

Human Services Research Institute (HSRI).  Their work measuring and tracking results by state

for adults ages 18 and older with intellectual and developmental disabilities (IDD) began in

1997.  In 2013, they began an additional effort with a small group of states to collect data on

DSP vacancy and turnover rates among provider agencies that administer direct support to adults

with IDD through their NCI Staff Turnover survey tool. That tool was converted to a more

comprehensive survey focusing on DSP workforce issues (e.g., benefits, wages, retention, and

recruitment activities). Input was gathered from experts in the field, two rounds of focus groups

were conducted with provider agencies, and a pilot test was conducted in two states in 2014 for

the purposes of refining the survey. It was first released to collect 2014 data (NCI, 2014). Data

are used to provide information to states that will help reduce the costs related to staff turnover

as well as the impact turnover has on the quality of the supports consumers receive.  An

increasing number of states participate in the NCI Staff Stability Survey since its pilot in 2014

(NCI, 2016). The data also provide a mechanism to measure state improvement (HSRI &

NADDDS, 2018). The 2016 Staff Stability Survey asks questions of the leadership of provider

organizations in participating states related to DSP current staff, staff separations, status (full- or

part-time) of staff, hours worked, wages, and benefits.

**Sample**

**State Selection.** Data were collected from 20 states and the District of Columbia that

voluntarily participated in the NCI program in 2016.  States included: AL, AZ, CT, GA, HI, IL,

IN, MD, MO, NE, NY, OH, OR, PA, SC, SD, TN, TX, UT, VT, and DC.  Ohio collected data

separately for ICF/ID funded supports and HCBS waiver funded supports. These data were

combined for the current analyses.  Data were gathered for the time period from January 1, 2016

to December 31, 2016.  Sampling methods varied for each state; however, most states surveyed

all agencies providing direct support services to adults with IDD. See Appendix B in the NCI

Staff Stability 2016 Report for specific state methods (HSRI & NADDDS, 2018).

**Participants.** Across the states, there were 3,222 provider agencies that completed the

2016 Staff Stability Survey. Due to missing data, the listwise number of providers assessed for

this study was 1,410 for early turnover and 1,618 for annual turnover from 20 states and the

District of Columbia.

**Variables.** Table 1 shows descriptive statistics on all variables in this study. The

outcomes examined were annual DSP turnover, and percentage of those DSPs who were

employed in their position for less than six months. Turnover was computed using a formula for

annual crude separation rate, which is calculated using three variables: the number of DSPs who

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left their position for any reason in the calendar year divided by the total number of DSPs employed plus the number of DSP vacancies. This is multiplied by 100 to yield a percentage of DSP turnover. This formula has been used widely in studies within and outside of the long-term services and supports industry (Bogenschutz et al, 2015, Larson & Sedlezsky, 2015). As seen in Table 1, at the organization level, average DSP turnover in the last 12 months was 24.58%.

Early turnover in this study is defined as the percentage of DSPs who turned over in the previous year and who had been employed in their position for less than six months from their date of hire. Early turnover was computed using the number of DSPs who left their position within six months of hire in the calendar year by the total number of DSPs who left their position that same year. This number was multiplied by 100 to yield a percent. Of those DSPs who left their positions, an average of 19.58% left within six months of hire.

Five organizational level predictors of the outcomes were examined. Descriptive statistics for these are also presented in Table 1.

*Wages*. This was a single item asking the average wages for DSPs across all services and settings. The average DSP hourly wage was $11.68.

***Percent providing Paid Time Off***.  Individual items asked if the organization provided eligible DSPs paid time off, paid sick time, and/or paid vacation. If an answer of 'yes' was provided for any of these items, a code of 1 'yes, offers for paid time off' was assigned. If a 'yes' answer was not provided, a code of 0 'no, does not offer paid time off' was assigned. Eighty-six percent organizations offered paid time off.

***Overtime Hours per DSP.*** This was a single item asking the total number of overtime hours paid to DSPs between January 1, 2016 and December 31, 2016, which was divided by the

total number or DSPs employed over that time period. The average number of overtime hours was 138.97 hours per DSP in the calendar year.

*Percent Providing Health Insurance*:  This was a single item asking if the organization provided eligible DSPs health insurance coverage. If an answer of 'yes' was provided, a code of 1 'yes, offers health insurance coverage' was assigned. If a 'yes' answer was not provided, a code of 0 'no, does not off health insurance coverage' was assigned. Seventy-six percent of organizations offered health insurance to some or all DSPs.

*Percent of Part-Time DSPs*. This was created dividing the number of part-time DSPs by the total number of DSPs. On average, 35% of DSPs in an organization worked part-time.

Table 1

Three covariates were examined.

*Vacancy Rate.*  DSP vacancy rate was calculated using two variables: number of DSP vacancies and total number of DSPs employed. Vacancy rate was computed by dividing the total number of funded positions currently vacant by the total number of funded positions at the site (the number of DSPs employed plus the number of vacant positions). The result was multiplied by 100 to yield a percent (Larson & Sedlezsky, 2015). The average vacancy rate was 10%.

*Number of Service Types Provided.* Each organization was asked if it provided: (1) residential, (2) day/employment, and/or (3) non-residential supports and services. This variable was a count ranging from 0 to 3 types of services provided. The average number of service types provided was 1.49.

*Staff Size*. This was a single variable that asked the total number of staff on the organization's payroll as of December 31, 2016. The average staff size was 213.73. This includes different kinds of staff, such as administration, human resource, clinical, nursing, and others that were on the organization's payroll on this date.

Six state-level predictors were considered for these analyses.

*Residence size*. Three variables were created regarding the number of people and/or setting, where a person who receives services lives. These variables were drawn from the Residential Information Systems Project (RISP) data (Larson et al., 2018). Three variables were: the percent of individuals living in organizations with 16 or more individuals with IDD, the percent of individuals with IDD who live in family homes, and the percent of individuals with IDD who live in individual or group settings (e.g., own home, agency apartment, etc.). At the state level, the average number of individuals living in Intermediate Care Facilities (ICF), individualized, and family settings was 17.86%, 31.71%, and 48.52%, respectively.

*Per Capita Medicaid Spending*. This variable came from RISP data (Larson et al., 2018). It represents annual Medicaid expenditures per state resident (including home and community based services and institutional care facility services). The average annual per capita spending by state was $163.90.

*Unemployment rate*. This variable comes from the American Community Survey (ACS), a data collection project completed yearly by the U.S. Census Bureau (2016). One-year estimates of unemployed individuals of working age, living in the state during 2016 from ACS was used to determine this variable. The average unemployment rate was 6.83%.

*Medicaid Expansion*. Data from the Advisory Board, a global healthcare think tank in operation since 1979 (https://www.advisory.com/daily-briefing/resources/primers/medicaidmap)

were used to determine this variable. If a state included in our analysis expanded Medicaid

before January 2016, a code of '1' was assigned. If a state opted out of Medicaid expansion or

did not expand before January 2016, a code of 0 was assigned. Just over half (57%) of states had

accepted Medicaid expansion by 2016.

*State Weight*. There were five states (AL, AZ, CT, PA, and TX) that did not meet the

margin of error criteria established by the Human Services Research Institute (HSRI) that

administers NCI. HSRI used a sampling estimation program

(http://www.raosoft.com/samplesize.html) based on the number of providers within each state to

create an estimate of the minimum number of provider surveys completed in order to reach a

95% confidence level. In order to include as many states as possible, a weighting variable was

created, i.e. the percent of the surveys completed that met this minimum required number. For

example, the lowest response percent was 16%, which indicates that only 16% of the required

surveys were completed. By weighting the model using this percentage, this study was able to

temper the results from states with low response rate (thus mitigating their impact on overall

estimates), but still include their data in the study analysis. The average state weight in this study

was 0.78 (SD = 0.20, range 0.16-1.00).

**Analysis**

Descriptive statistics and Hierarchical Linear Modeling (HLM) were computed using

HLM 7.0 (Raudenbush et al., 2013). HLM models were used to examine the effect of predictors

across two levels of analysis on the two workforce outcomes of early and annual turnover.

Restricted Maximum Likelihood (RML) was used as the estimation method because of the

relatively small sample size for the level-two predictors (Raudenbush & Bryk 2002). The final

analysis was based on 20 states and the District of Columbia. All analyses were evaluated using

$\alpha = 0.05$.  All models used robust standard errors.

Multilevel models incorporate higher level predictors by taking into account the

contribution of each level of analysis (Raudenbush & Bryk, 2002). This process allows for the

explanation of variability due to group or cluster effects by modeling lower level intercepts and

slopes based on group level variables. HLM accounts for the interdependence of observations by

partitioning the variance of a dependent variable, such as turnover rates, into hierarchical levels.

Therefore, it improves estimation of parameters given by the GLM approach (Raudenbush &

Bryk 2002). This improvement is due to variance being explained by characteristics of providers

(level 1) and variables specific to states (level 2).

### Results

This study attempted to fit state-level variables at level 2 of HLM for both annual DSP

turnover and early turnover. For early turnover, the model did not converge and the exhausted

attempt at estimating level 2 (state level) variables produced a model fit that was below the

intercept-only model and with an overall model significance level of about .50. These results

strongly suggest that level 2 estimates are likely random for this model. Thus, only level 1

estimates for early DSP turnover are presented.

Table 2

As seen in Table 2, at the organizational level, a higher percent of leavers within six

months of tenure is significantly related to less offering of PTO (p=0.025), less offering of health

insurance (p<0.001), higher vacancy rates (p<0.001), higher proportion of part-time DSPs

(p<0.001), and lower overall staff sizes (p=0.014). PTO and health insurance represent the

organization offering the option, not whether the employees were eligible or had taken up the

offer.

For annual turnover, the level-2 model converged and produced acceptable model fit.

Thus, the full model for turnover is reported.

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Table 3
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As seen in Table 3, at the organizational level, a higher turnover rate in the last 12

months is significantly related to lower DSP wages (p<0.001), and not offering health insurance

(p=0.037).  At the state level, a higher turnover rate in the last 12 months is significantly related

to a lower percentage of people living in individualized settings (p=0.049) and lower per capita

spending (p<0.001).

Annual DSP turnover and early turnover were both predicted by whether or not an

organization offered health insurance for DSPs.

**Discussion**

This study revealed several important trends related to DSP annual and early turnover of

DSPs employed in their position for six months or less. Specifically, there were different factors

related to DSP turnover in each model based on DSP tenure. Not surprisingly higher wages and

the option of accessing health insurance were related to lower annual turnover rates. A higher

percentage of part-time DSP positions in an organization and the organization's offering provide

paid time off were also related to higher early turnover rates. While these are initial results based

on one year of data, they can inform rate setting in long term services and supports as well as

hiring and compensation practices in human service organizations. Efforts to better retain DSPs will necessitate increased state and federal spending to increase wages, and access to full time work hours, health insurance and PTO benefits.

In the early DSP turnover model, a lack of provisions of paid time off and health insurance, and having a higher percentage of part time DSP positions in the organization were related to a higher percentage of DSPs who turned over in six months or less. Organizations who had a higher percentage of part time workers also had a higher early turnover rate, although this was not the case for annual turnover. Part time DSPs may be more likely to leave their position if they are able to find full time employment elsewhere, using direct support as a bridge to finding other employment. Organizations have reported that they have a more difficult time retaining DSPs as the unemployment rate decreases (PCPID, 2017; Powers & Powers, 2010).  Developing strategies and service models that maximize the use of full time workers and pooled health insurance options may be important strategies for retaining DSPs past six months.

These findings also align with the need to provide health insurance benefits and PTO to part time workers. States included in the 2016 NCI Staff Stability Survey report that around one-third of organizations that provided pooled paid time off, or paid sick or vacation time to DSPs offer this to full time DSPs only (HSRI & NADDDS, 2018). In a recent study of direct support workers in Minnesota, finding a job with access to higher wages or benefits were top reasons that workers reported that DSPs left their positions (Hewitt et al., 2019). Relative to the demands of direct support, other industries that pay similar wages but offer more attractive benefits packages may sway workers from direct support into other industries.

Provision of health insurance was a factor related to higher rates of DSP turnover in both the early turnover model and the annual turnover model. New federal regulations requiring

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people to have health insurance went into effect in 2010 (Patient Protection and Affordable Care

Act). People who do not carry health insurance face a penalty on their taxes, if they were not able

not verify that they have health insurance. This new law may have played a role in these

findings. Furthermore, many DSPs turn to government programs for health insurance. In a recent

study in Minnesota, 30% of workers reported they obtained health insurance from government

programs. PHI (2015) reports that 52% of workers utilize government health benefits. It is

important to pursue a longitudinal analysis to be able to better gauge the impact of this new

policy on DSP turnover rates.

It is unsurprising that higher wages are related to a lower percentage of overall DSP

turnover.  Increasing wages has been shown to be related to lower DSP turnover in previous

studies (ANCOR, 2010). Wage rates paid to DSPs have been tracked in recent decades to show

that rates of pay have not kept up when adjusting for inflation (Espinoza, 2017). Livable wages

take into account geographically-specific costs of living to sustain a family's basic needs,

including housing, food, childcare, transportation, health insurance, and other necessities without

reliance on government subsidies. For example, the #bFair2DirectCare campaign has advocated

for livable wages paid to DSPs in New York state. This campaign has utilized the Massachusetts

Institute of Technology (MIT) living wage calculator to determine differences in wages across

geographic regions in the state (Nadeau & Glasmeier, 2018). Advocacy for higher wages cannot

merely be focused on raising wages, but instead must focus on increased wages at a competitive

rate to sustain this workforce over time. Without livable wages, over time DSPs may want to stay

in this line of work, but find the rate of pay unsustainable to cover living costs. This may result

in DSPs finding a different line of work with higher pay when they would have stayed in their

job. Organizations can also support established DSPs by creating career pathways that reward

increased level of skills with commensurate increases in pay (e.g., Hewitt et al., 2015; Espinoza, 2019).  Given the high costs of recruiting and training new direct support staff (Larson et al., 2016; ANCOR, 2010), investment in training and recognizing committed DSPs are important considerations for organizations.

In the United States, there are numerous service industries. These include sanitation, hospitality, environmental protection, and many others. The wages paid to these types of service workers are often higher than those of DSPs. For example, average hourly wages in 2018 for restaurant cooks were $13.26, waiters and waitresses were $12.42, janitors and cleaners were $13.92, landscaping and groundskeepers were $14.88, and retail sales workers were $13.61 (Bureau of Labor Statistics, 2019). When unemployment is low and other service jobs are paid higher rates, the ability to recruit people into DSP jobs becomes more challenging. Direct support can be challenging and take a higher level of skill than such jobs that offer higher wages. These competition factors need to be considered when determining rates for long -term services and supports (LTSS) in the intellectual and developmental disability field.

*State Factors*

Regarding the second research question, *what state factors related to organizational level predictors of turnover, as controlled for by vacancy rate, number of services provided, and organizational size*, these factors were only modeled on overall DSP turnover. Both the higherlower percentages of individuals living in individualized settings and higherthe per capita spending within a state were associated with less turnover.

A greater number of people living in individualized settings were related to lower overall turnover rates. Individualized settings are those with 3 or fewer people living in them. Houseworth, Stancliffe, and Ticha (2018) found that people living in their own home or

apartment was associated with more choice in support options for individuals with IDD.

Increased choice is desirable for people receiving supports, and in line with policies (HCBS

Settings Rule). It also seems that there is less turnover when DSPs work in more individualized

settings which may be related to having the opportunity to really get to know the individuals,

being able to plan and implement more individual person centered supports and having less

stress with fewer people for which the DSP has high level of responsibility and risk. State

systems have been moving continuously toward more individualized supports and continuing

this movement may be important for states to address issues of DSP turnover as well.

Higher per capita spending was also associated with less turnover.  The states with lower

turnover may also be paying higher wages to DSPs. It may also be that per capita spending leads

to more consumer satisfaction, which makes working as a DSP more rewarding. It is clear that

state (and subsequent federal) investment in long term services and supports will be needed if

wages for DSPs are able to increase.

Contrary to previous studies, these analyses did not find that state unemployment rate

was related to turnover (Powers & Powers, 2010; Wiener et al., 2009). It is intuitive that when

unemployment rates are low, there are fewer workers available to work across all industries, Yet,

other factors influence satisfaction and commitment to stay on a job. The demands and

accountability aligned with training and credentials for the job, access to and effective support

form a supervisor, conflicts with co-workers, and changing demographics are all contributing

factors as are wages and benefits (Bogenshutz et al., 2015; Wiener et al., 2009; Lerman et al.,

2014; Hewitt et al., 2019). Perhaps these other factors that are known to influence retention are

influencing factors here.

## Conclusion and Future Direction

This is the first study using NCI Staff Stability Survey data for systematic analysis across multiple states. The results likely indicate that wages and benefits (PTO and health insurance) are critical factors to retaining DSPs in their positions. These are important factors for both states and organizations to address. Yet, further analyses is needed over a longitudinal period to better understand these influencing factors. Additional variables likely to influence retention and turnover must also be included in future studies.  Further analyses should examine the uptake of health insurance by DSPs, and survey where DSPs are receiving health insurance, if not from their employer. Another area of examination includes answering the questions, why there is higher turnover of staff working in more individualizes settings, while there was no significant difference for staff in ICFs and working in family settings. Conduct analysis with a larger number of states will provide information that is more generalizable and enable for more robust multi-level analyses.

## Limitations

The small sample size within many states and the low number of states included in the study lead to low fit statistics for 2-level models. More states and providers could make other variables become significant, especially at the state level. It is unclear as to the degree to which providers are actually providing health insurance for their DSP staff. The NCI Staff Stability Survey merely ask if it is offered, not the number or percent of DSPs enrolled who actually use the benefit.  The study employed a correlational cross-sectional analysis. Therefore, casual claims cannot be made. The degree to which changes in these factors over time effect staff stability are unknown.

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*Table 1*. Description of the sample organizations (N = 1,618).

| | Mean | SD | Range |
|---|---|---|---|
| **Outcomes** | | | |
| Annual DSP Turnover | 24.58% | 15.20 | 0.00 to 98.36 |
| % of DSP turnover in less than six months tenure | 19.58% | 15.68 | 0.00 to 100.00 |
| **Organizational Level Predictors** | | | |
| DSP average hourly wages | $11.68 | 2.42 | 7.50 to 28.80 |
| Paid Time Off offered to any DSPs | 86% | 0.34 | 0.00 to 1.00 |
| Annual Overtime Hours per DSP | 138.97 | 726.28 | 0.00 to 27,486.18 |
| Health Insurance offered to any DSPs | 76% | 0.43 | 0.00 to 1.00 |
| Ratio of Part-time DSPs | 0.35 | 0.28 | 0.00 to 1.00 |
| **Covariates**: | | | |
| Vacancy Rate | 10% | 0.11 | 0.00 to 0.83 |
| Number of Service Types | 1.49 | 1.09 | 0.00 to 3.00 |
| Staff Size | 213.73 | 511.81 | 1.00 to 15,124 |
| **State Level (N=21) Predictors** | | | |
| Percent living in ICF Settings | 17.86% | 13.54 | 0.00 to 45.00 |
| Percent living in Individual or Group Settings | 31.71% | 18.39 | 4.00 to 81.00 |
| Percent living in Family Settings | 48.52% | 20.03 | 8.00 to 87.00 |
| Per Capita Spending | $163.90 | 105.55 | 15.59 to 438.37 |
| Unemployment Rate | 6.96% | 1.43 | 4.10 to 8.70 |
| Medicaid Expansion | 57% | 0.51 | 0.00 to 1.00 |

Note: N=1,410 for Percent of early DSP turnover.  All other variables are reported for the larger sample size in the turnover model.

*Table 2*. Hierarchical Linear Model on early DSP turnover (intercept only)

| Organization Level | Coeff. | SE | T-ratio | df | p-value |
|---|---|---|---|---|---|
| DSP Wages | -0.72 | 0.37 | -1.94 | 1,381 | **0.053** |
| Paid Time Off | -3.70 | 1.65 | -2.24 | 1,381 | **0.025*** |
| Overtime Hours | 0.01 | 0.01 | 0.52 | 1,381 | 0.604 |
| Health Insurance | -5.66 | 1.43 | -3.96 | 1,381 | **<0.001*** |
| Percent Part-time DSP | 5.79 | 1.29 | 4.49 | 1,381 | **<0.001*** |
| | | | | | |
| **Covariates** | | | | | |
| Vacancy Rate | 10.04 | 3.61 | 2.79 | 1,381 | **0.005*** |
| Number of Service Types | 0.31 | 0.37 | 0.84 | 1,381 | 0.402 |
| Staff Size | -0.01 | 0.01 | -2.47 | 1,381 | **0.014*** |
| | | | | | |
| **State level** | | | | | |
| | | | | | |
| **Intercept Level 2** | 19.62 | 0.69 | 28.24 | 20 | <0.001 |

*Note*. Tau = 3.60, SE Tau = 2.71; Level I reliability = 0.36; Variance Components: Intercept 1: SD = 1.90, VarComp = 3.60, $\chi^2(20)=41.601$, p=0.003; Level 1: SD = 15.31, VarComp = 234.41

*Table 3*. Hierarchical Linear Model for Annual DSP Turnover

| Organization Level | Coeff. | SE | T-ratio | df | p-value |
|---|---|---|---|---|---|
| DSP Wages | -1.10 | 0.12 | -8.89 | 1,589 | **<0.001*** |
| Paid Time Off | 1.30 | 0.93 | 1.40 | 1,589 | 0.162 |
| Overtime Hours | 0.01 | 0.01 | 1.54 | 1,589 | 0.123 |
| Health Insurance | 2.99 | 1.43 | 2.01 | 1,589 | **0.037*** |
| Percent Part-time DSP | 0.48 | 1.71 | 0.28 | 1,589 | 0.779 |
| **Covariates** | | | | | |
| Vacancy Rate | 19.10 | 2.82 | 6.77 | 1,589 | **<0.001*** |
| Number of Service Types | -0.89 | 0.28 | -3.16 | 1,589 | **0.002*** |
| Staff Size | 0.01 | 0.01 | 0.04 | 1,589 | 0.971 |
| | | | | | |
| **State level** | | | | | |
| Intercept Level 2 | 39.98 | 5.57 | 7.18 | 14 | <0.001* |
| Percent in ICF Settings | -0.02 | 0.03 | -0.69 | 14 | 0.501 |
| Percent in Individualized Settings | -0.07 | 0.03 | -2.16 | 14 | **0.049*** |
| Percent in Family Settings | 0.02 | 0.02 | 1.31 | 14 | 0.212 |
| Per Capita Spending | -0.02 | 0.01 | -6.82 | 14 | **<0.001*** |
| Unemployment | -1.25 | 0.67 | -1.86 | 14 | 0.084 |
| Medicaid Expansion | -1.92 | 1.65 | -1.16 | 14 | 0.264 |

*Note*. Tau = 0.02, SE Tau = 0.57; Level I reliability = 0.005; Variance Components: Intercept 1: SD = 0.13, VarComp = 0.02, $\chi^2(14)=26.97$, *p*=0.019; Level 1: SD = 14.65, VarComp = 214.70