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Direct Support Professionals and COVID-19 Vaccination: A Comparison of Vaccinated Early Adopters and In-Betweeners

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Abstract

Direct support professionals (DSPs) are at increased risk of contracting COVID-19. A four-wave survey series was conducted, in part, to understand DSPs' COVID-19 vaccination experiences. Fourth wave data were used to compare those vaccinated against COVID-19 when they became eligible (early adopters) and those waiting at least three months before vaccination (in-betweeners). Findings indicated that in-betweeners were more likely to be female, younger, and people of color with lower education levels and annual incomes, with employers requiring COVID-19 vaccination to remain employed. COVID-19 vaccination motivators included protection for self, family or people supported, an employer who mandated COVID-19 vaccination, and having had COVID-19 or knowing someone who did.

Keywords: Direct Support Professionals, COVID-19, vaccinations, IDD, direct support workforce

Direct support professionals (DSPs) play a critical role in delivering services and supports to individuals with intellectual and developmental disabilities (IDD). There are an estimated 7.43 million individuals with IDD in the United States with an estimated 1.54 million who are known to or served by state IDD agencies (Larson et al., 2022). DSPs provide supports to children and adults with IDD primarily in home and community-based settings. DSPs support people with intellectual disabilities to live in their communities and provide supports in life areas such as eating, bathing, toileting, food preparation, household chores, and medication management (Musumeci et al., 2021). They also provide supports to develop and maintain relationships, participate in communities, budget, and manage money, and so on (NADSP, n.d.).

COVID-19 and Intellectual or Developmental Disabilities

DSPs often provide support in people's homes or places of employment. They may be in close contact with the people they support (e.g., assistance with personal hygiene). It is critical that DSPs are vaccinated against COVID-19, partly because individuals with IDD are at greater risk for contracting and dying from COVID-19 (Davis et al., 2021; Gleason et al., 2021).

Individuals with intellectual disabilities experience higher rates of co-occurring conditions such as neurological disorders, diabetes, hypertension, cardiovascular disease, and other conditions than the general population (Gleason et al., 2021; Janicki et al., 1999). Studies of populations with IDD in California and New York found higher rates of severe illness and death among people with IDD from COVID-19 than in the general population (Landes et al., 2020; Landes et al., 2021). Examining data from 547 healthcare organizations in the United States, Gleason et al. (2021) found that individuals with IDD were 2.6 times more likely to have a COVID-19 diagnosis than those without IDD and were 5.9 times more likely to die from COVID-19. However, in a study of people from eight states including 1/3 of the United States

population, Davis et al. (2021) identified the risk of contracting COVID-19 for individuals with IDD was 6.0 times less than that of the general population, but people with IDD were 2.8 times more likely to die from COVID-19 then the general public. Even with the proximal and personal work tasks DSPs perform and the high level of vulnerability of the persons to whom they provide supports and services, COVID-19 vaccine hesitancy continues to be an issue among this profession.

Vaccination Mandates and Incentives

There has been conjecture regarding the effectiveness of vaccination mandates and offering incentives for vaccinations for the direct care workforce. Evidence exists that despite vaccination reservations, mandates increase people's intentions to get vaccinated (Albarracin et al., 2021). Ritter and colleagues' (2021) study on vaccination conditions of employment (COE) in a community nursing home found mandating vaccinations for staff to be successful. Prior to COE implementation, attempts to increase vaccinations involved handouts, virtual presentations, individual outreach, and on-site vaccination clinics. Less than half of the nursing home staff were vaccinated via these methods; however, three months after implementing the COE, 89.8% of the original staff had been vaccinated.

Offering incentives for COVID-19 vaccinations has had mixed effects on vaccination status. In the early stages of development and distribution of the vaccine, there was concern that financial incentives may be received negatively, particularly in certain populations (Robertson et al., 2021). They found that financial incentives of $1,000 and $2,000 were likely to be helpful for increasing the general public's willingness to get vaccinated. However, they also found incentives were potentially less likely to motivate Republicans and Black and Latino Americans to consider vaccination (Robertson et al., 2021). Carpio and colleagues (2021) conducted a study

during this timeframe and reported about 14% of the United States population indicated they would get vaccinated only if financially rewarded, and half said a minimum of $500 would be needed for them to contemplate vaccination. These two studies were about COVID-19 vaccination intentions before vaccinations were easily available to those who wanted. Incentive amounts in those studies were also higher than other incentives available for vaccinations. Although hesitancy remains, mandated COVID-19 vaccination and aid from incentives appear to be a viable solution for increasing DSP and Frontline Supervisors (FLS) vaccination rates.

In a previous national survey of DSPs and FLSs from June-July 2021, 69% (n=3,257) reported that they were fully vaccinated against COVID-19 with an additional 3% partially vaccinated, leaving 28% of DSPs and FLSs unvaccinated (Hewitt, Pettingell, Bershadsky, et al., 2021). This is a vaccination rate that was somewhat higher than the general public at the time of the survey. As of July 2022, approximately 67% of the United States population was fully vaccinated against COVID-19, and 48% had received their booster shot (Centers for Disease Control [CDC], 2022). Of the DSPs who were not vaccinated against COVID-19, more than half (54%) believed that the vaccine was unsafe, 22% didn't think they needed it (for example, they had already had COVID-19), 21% didn't think the vaccine was helpful, and 23% had other reasons for not getting the vaccine, often tied to vaccine-related misinformation (Hewitt, Pettingell, Bershadsky, et al., 2021).

Vaccine Hesitancy

The decision to delay vaccination is often referred to as vaccine hesitancy. According to MacDonald and the SAGE Working Group on Vaccine Hesitancy, individuals expressing vaccine hesitancy delay their acceptance or refusal of vaccination despite readily available vaccination services (2015). Common reasons for COVID-19 vaccine hesitancy include the

expedited vaccination development process, potential side effects, general distrust of vaccines, belief that COVID-19 is harmless, and lack of trust in the vaccine's effectiveness (Latkin et al., 2021; Troiano & Nardi, 2021).

The Pfizer-BioNTech and Moderna mRNA COVID-19 vaccines became available under an emergency use authorization (EUA) issued by the Food and Drug Administration (FDA) in December 2020 (Pilishvili et al., 2021). EUAs are issued during public health emergencies by the FDA to permit use medical products that may be effective in detecting, treating, or thwarting life-threatening or serious diseases, like COVID-19, where there are no sufficient, approved, or available alternatives. For an EUA to be issued, the FDA must confirm the known and potential benefits of the medical product (the COVID-19 vaccine) outweigh the known and potential risks (Krause et al., 2020; https://www.fda.gov/news-events/press-announcements/fda-approves-first-covid-19-vaccine). Krause et al. (2020) cautioned that if there was an unfavorable benefit-risk ratio or a lack of sufficient data to ensure public safety, there would be a lack of public confidence in vaccines, in general, but also to the COVID-19 vaccine and administration response to the pandemic overall. Additionally, these vaccines were the first mRNA vaccines that had their first evaluation for effectiveness in the real-world setting of the COVID-19 pandemic (Pilishvili et al, 2021). Additionally, the COVID-19 pandemic and vaccines were politicized by the media for political and ideological interests (Abbas, 2021). These reasons point to broader mistrust in modern science, political authorities, corporations, and health authorities (Liu & Li, 2021). Some sociodemographic groups such as non-Hispanic Black, religious, and Republican populations that were historically more likely to mistrust these broader systems were also more likely to express hesitancy towards the COVID-19 vaccine (Liu & Li, 2021; Troiano & Nardi, 2021; Viswanath et al., 2021).

A study by the Kaiser Family Foundation (KFF, 2021) noted that of those in the 'wait and see' group, Republican-leaning independents and Republicans were more likely to deem COVID-19 information as exaggerated and getting vaccinated as a personal choice. Thirty percent of Black and Hispanic individuals in the 'wait and see' group were very concerned about getting COVID-19 from the vaccine. They were also, compared to White individuals, more uneasy regarding the serious side effects from the COVID-19 vaccine as well as family members becoming sick from COVID-19 (KFF, 2021).

Individuals caring for others were also more likely to be hesitant to get the COVID-19 vaccination. Caregivers' heightened caution towards vaccinating people under their care was reflected in COVID-19 literature, which suggested that 68% of participants were willing to get vaccinated themselves and 65% were willing to ensure vaccination of people under their care (Viswanath et al., 2021). Research on vaccine hesitancy, in general, consistently points to misinformation as a significant contributor to hesitancy. For instance, social media often serves as a source of this misinformation. False social media reports and conspiracy theories regarding the COVID-19 vaccine can significantly impact COVID-19 attitudes (Batty et al., 2021; Latkin et al.,2021). This is especially true for vulnerable individuals with cognitive disabilities (Batty et al., 2021). Although social media has been used to reinforce vaccine hesitancy, in general, researchers suggest it can also be used to bolster vaccine confidence. Vaccine recipients who post credible vaccine information and their experiences on social media can serve as a vital means of addressing hesitant individuals' fears (Latkin et al., 2021).

Providing medical professionals (e.g., doctors, genetic counselors, nurses) with the tools to effectively communicate with patients may also be effective approach to reducing vaccination hesitancy (Rittle, 2022; Salmon et al., 2015; Troiano & Nardi, 2021). Health professionals are

often respected as experts and can support individuals when making informed medical decisions. Social media and health experts both serve as viable ways of reducing vaccine hesitancy, in general, by increasing the circulation of credible vaccination information.

Rittle (2022) notes that there is a group of individuals referred to as "in-betweeners". They are currently not vaccinated against COVID-19 and are taking a "wait and see" attitude rather than rejecting this vaccination altogether. McNamara (2021) added that in-betweeners do not want the label of "anti-vaxxer" but have diverse reasons for not getting vaccinated right away". In-betweeners don't consider themselves to be anti-vaccine but have concerns that delay their decision. McNamara (2021) also found that experts believed that while individuals who were very strongly against getting vaccinated would likely maintain that stance, in-betweeners using the "wait and see" approach would, with time, consider the getting vaccinated, especially with full FDA approval of the COVID-19 vaccine. Given the risk of a COVID-19 infection to individuals with IDD, it is critical to understand the concerns of DSPs about the COVID-19 vaccination to inform public health activities aimed at increasing the vaccination uptake in this population.

Purpose of the Current Study

This study aimed to examine COVID-19 vaccination experiences of DSPs vaccinated when they became eligible ("early adopters") and those who waited at least three months before getting vaccinated but were vaccinated by the time of our survey (summer 2022) ("in-betweeners"). We compared these groups of DSPs to understand if and how they differ in terms of their personal and professional characteristics and COVID-19 vaccination experiences. The research questions included:

1. Do DSPs vaccinated against COVID-19 when they became eligible (early adopters) and those waiting at least three months to get vaccinated (in-betweeners) differ on demographic characteristics?
2. Do DSPs vaccinated against COVID-19 when they became eligible (early adopters) and those waiting at least three months to get vaccinated (in-betweeners) differ with regard to COVID-19 vaccination circumstances of their employer?
3. What motivated DSPs waiting at least three months to get vaccinated (in-betweeners) to get vaccinated against COVID-19?

Method

Instrument

The COVID-19 Direct Support Workforce 24-month Survey was the 4th of four national online surveys aimed directly at Direct Support Professionals and Frontline Supervisors (FLSs). Topics covered included respondent characteristics, staffing, work wages and hours, employer-implemented COVID-19 safety measures, DSP well-being and work-life, perceptions of the COVID-19 effect on the individuals the respondents supported, vaccination experiences, technology use during COVID-19, and demographics. The survey was administered via the Qualtrics survey platform from June 1 to July 21, 2022. Details about the survey and an access link were sent to our contacts across the United States for assistance in distribution, posted on our website and on social media.

Sample

There were 4,049 surveys submitted in Qualtrics. While the survey was anonymous, data were cleaned to remove surveys that were obviously duplicate testers. Of those, 14% opened the link but did not answer any items, 18% indicated they were DSPs and FLSs but left the survey blank

or answered fewer than 50% of the items, 2% were not DSPs or FLSs, and <1% resided outside of the US. This left a usable sample of 2,657 (66%) respondents. Respondents were located in nearly all states and the District of Columbia. Three states and all of the territories had no respondents, 41 states had 1-100 respondents, five had 101-250 respondents, one had 251-400 respondents, and one had more than 400 respondents. Five percent of respondents did not provide the state in which they worked. While there were 2,007 DSPs in the sample, for this study, only the 1,515 respondents who were DSPs and who responded 'yes' to being vaccinated were included in the analytic sample.

Variables

Demographic Variables

- **Gender Identity** was a single item with four categories: woman (including transgender woman), man (including transgender man), non-binary, and prefer to self-describe. For group comparisons, due to the small number of respondents in each category, gender groups were collapsed into men, women, and other. The "other" category included non-binary and preferred to self-describe.
- **Age in Years** was a continuous measure.
- **Ethnicity** was a single item with two options: Yes, I am of Hispanic, Latino, or Spanish origin, and No.
- **Race** was a single item with six options: Asian, American Indian or Native American, Black or African American, White, Some Other Race, or Two or More Races. For group comparisons, due to the small numbers of respondents in each category, race groups were collapsed into Black or African American, White, and Other. The "Other" category

included Asian, American Indian/Native American, Some Other Race, and Two or More Races.

- **Education Level** was a single item with six response options: less than a high school diploma, a high school diploma/GED, a 2-year degree, some college, a 4-year degree, and post-graduate education.
- **Household Income** was a single item with six choices: $14,999 or less, $15,000 to $21, 999, $22,000 to $39,999, $40,000 to $99,999, and over $100,000.
- **Setting Worked In** was a single item with four categories: community employment or job site, family or individual home, agency or facility, and another site not included in the options.

Vaccination Variables

- **Employer Requires COVID-19 Vaccination** was a single item with two choices: no and yes.
- **Employer Offers Paid Time Off (PTO) for COVID-19 Vaccination** was a single item with two categories: yes and no.
- **Employer Offers Financial Incentive for COVID-19 Vaccination** was a single item with two possibilities: no and yes.
- **Motivations for Getting COVID-19 Vaccination** was a single item with nine options: financial incentive from state, financial incentive from employer, the state worked in had a COVID-19 vaccine mandate, the employer had a COVID-19 vaccine mandate, to protect oneself from getting COVID-19, to protect family members or people supported from getting COVID-19, knew people who had been sick with COVID-19, got sick with COVID-19, and other. Item format was “check all that apply.”

Analysis

SPSS version 27 (IBM Corporation, 2020) was used for all analyses. Frequency distributions provided descriptive statistics. Crosstabulation tables with Chi-square tests (χ^2) examined differences between early adopter and in-betweener vaccinated DSPs. Analyses were evaluated at $\alpha = 0.05$.

Results

Descriptive Results

Demographics of Vaccinated DSPs

Of the 2,007 DSPs, 83% (n=1,515) were vaccinated. Of those vaccinated, 43% initially were in-betweeners waiting more than three months after becoming eligible, and two-thirds (67%) had gotten a booster shot. The average age of vaccinated DSPs was 48 years (SD = 14 years, median = 50 years). Of COVID-19 vaccinated DSPs, over four-fifths (81%) identified as women, including transgender women, and nearly three-fourths (74%) identified as white with 8% having a Hispanic, Latino, or Spanish heritage (see Table 1). Thirty percent of COVID-19 vaccinated DSPs had a high school diploma or GED, and nearly half (47%) had an annual household income of $40,000 to $99,999. Almost two-thirds (63%) provided the majority of their services in agency or facility sites, and 67% had worked for their primary employer for more than 36 months.

Insert Table 1

Employer's Role and Vaccinated Direct Support Professionals

DSPs were also asked questions about their employer's involvement regarding COVID-19 vaccinations and the vaccination status of the people they supported. For employers, nearly half of DSPs (44%) said that their employers required DSPs and their coworkers to be COVID-19 vaccinated to continue their employment. One-third (36%) worked in a state or for an employer that offered a financial incentive to employees to get vaccinated. Nearly half (46%) worked for employers who offered paid time off (PTO) for employees to get vaccinated (see Table 2).

Insert Table 2

Comparisons of Early Adopter versus In-betweener Direct Support Professionals

Demographic Comparison between Early Adopters and In-betweeners

Demographic variables were examined for DSPs who were early COVID-19 vaccination adopters (were vaccinated as soon as they could be), and those who were in-betweeners (they waited more than three months after they were eligible to get vaccinated). Variables of interest included the region of the United States where they worked, age, gender identity, race, ethnicity, education level, household income, and type of setting in which the DSP worked.

As seen in Table 2, there were several statistically significant differences between COVID-19 vaccinated DSPs who were early adopters and those who were in-betweeners. A significantly higher percentage of in-betweener DSPs identified as women, including transgender women (85% vs. 78%), $\chi^2(2) = 10.246$, $p = 0.006$, and were Black or African American (17% vs. 12%) and another race not listed (14% vs. 10%), $\chi^2(2) = 12.286$, $p = 0.002$. COVID-19 vaccinated DSPs in-betweeners were significantly younger (M = 46 years; SD = 13 years), on average, than early adopter DSPs (M = 49 years; SD = 14 years), $t(1,384) = -4.173$, $p < 0.001$.

DSPs who were in-betweeners had significantly higher percentages with a high school diploma or GED (34% vs. 26%) and some college (31% vs. 25%) while early adopters had significantly higher percentages of 2-year degrees (19% vs. 15%), 4-year degrees (18% vs. 14%), and post-graduate education (10% vs. 5%), $\chi^2(5) = 28.995$, $p < 0.001$. In-betweeners had a significantly higher percentage in the $15,000 to $21,999 (11% vs. 6%) annual income bracket, $\chi^2(4) = 10.372$, $p = 0.035$ and worked in agency or facility settings (66% vs. 61%), $\chi^2(3) = 8.484$, p = 0.037, compared to early adopters.

Insert Table 3

Comparisons of Employer's Role in Vaccination Experiences Between Early Adopter and In-betweeners Direct Support Professionals

Employer's involvement regarding COVID-19 vaccinations and the vaccination status of the people supported were examined by hesitancy status (early adopters vs. in-betweeners). Variables of interest included employers requiring COVID-19 vaccination to continue working, employers or the state offering a financial incentive for employees getting COVID-19 vaccinated, employers offering paid time off (PTO) so employees could get COVID-19 vaccinated, and the number of people supported who were COVID-19 vaccinated.

As seen in Table 4, there were statistically significant differences between COVID-19 vaccinated DSPs who were early adopters and those who were in-betweeners with respect to employers requiring COVID-19 vaccination to continue their employment, $\chi^2(1) = 7.951$, $p = 0.005$, and on whether their employer offered PTO for employees to get COVID-19 vaccinated, $\chi^2(1) = 13.888$, $p < 0.001$. In-betweeners had a significantly higher percentage of working for an

employer who required COVID-19 vaccinations to continue employment (48% vs. 40%) and a significantly lower percentage worked for an employer who offered PTO for employees to get COVID-19 vaccinated (40% vs. 51%).

Insert Table 4

Motivations for In-betweener Direct Support Professionals to Get Vaccinated

DSPs who were in-betweeners, meaning they waited more than three months after they were eligible to get vaccinated, were asked what motivated them to eventually get the vaccine. As seen in Table 5, 58% indicated wanting to protect their family members or the people they supported from getting COVID-19, 49% wanted to protect themselves from getting COVID-19, 38% worked for an employer who had a COVID-19 vaccine mandate, 22% knew people who had gotten sick with COVID-19, 14% had themselves gotten sick with COVID-19, 11% worked in a state that had a COVID-19 vaccine mandate, 9% received a financial incentive from their employer, 4% received a financial incentive from the state in which they worked, and 7% had other reasons not listed. Common themes from "other" reasons included: their client(s) requested they get COVID-19 vaccinated, their doctor recommended it, there was a mandate outside of their workplace, they felt pressure from others, they wanted to travel, and they wanted to participate in activities.

Insert Table 5

Discussion

Most DSPs responding to this survey (83%) had been COVID-19 vaccinated; however, only 67% had received a booster vaccine. This vaccination rate is higher than expected if compared to the national vaccination rate at the time (July 2022) which was 67% and 48% had received their booster shot (CDC, 2022). This finding is consistent with the COVID-19 vaccination rate identified in the 12-month survey of DSPs (June-July 2021) which also showed a higher vaccination rate than the general population (Hewitt, Pettingell, Bershadsky, et al., 2021). This finding suggests that these DSPs recognized the importance of COVID-19 vaccination and acted to keep their families, the people they support, and themselves safe. This is important given the increased risk of individuals with IDD contracting COVID-19 and dying from COVID-19 if they contract it (Davis et al., 2021; Gleason et al., 2021).

Yet, of those COVID-19 vaccinated, 43% waited at least three months after the vaccine was available to them before being vaccinated (in-betweeners). The study found some significant differences between the early adopters and the in-betweeners. In-betweeners were younger, female, had lower education and income levels, and were more likely to identify as Black or African American. These demographics mirror other reports about COVID-19 vaccine hesitancy and uptake. Differences in vaccine uptake across race and ethnicity changed during the course of the pandemic, narrowing gaps in vaccination rates. In January of 2022, the Kaiser Family Foundation reported that 60% of white and Hispanic individuals, 54% of black individuals, and 80% of Asian individuals report at least one dose of a COVID-19 vaccine (Ndugga et al., 2022). This suggests that it remains important to continue COVID-19 vaccination campaigns that target the direct care workforce and various communities (e.g., political group, different geographic regions) as vaccination rates continue to increase overtime. As new COVID-19 boosters are

available it will be important to continuously educate DSPs on their availability and their success rates in preventing hospitalization and serious illness due to COVID-19.

External factors that may have had an effect on convincing in-betweeners responding to this survey to be vaccinated include COVID-19 employer (38%) or state vaccination mandates (11%). In a study of increasing COVID-19 vaccination uptake in a community nursing home, efforts to increase vaccination included handouts, on-site vaccination clinics, virtual presentations, and individual outreach resulted in less than half of the nursing home staff being vaccinated (Ritter et al., 2021). However, once COVID-19 vaccines became conditional for employment, 89.8% of the initial staff were vaccinated, and 6.9% resigned (Ritter et al., 2021), indicating that COVID-19 vaccination mandates may be an effective tool for increasing vaccine uptake, particularly for people on the fence about being vaccinated. It may be that COVID-19 vaccine mandates take the decision out of the hands of the DSP and give them a reason for being vaccinated. This may be particularly important in communities with social pressure to avoid vaccines, in general. It will be important to ensure that COVID-19 state policy and employer mandates are updated to include boosters as this will continue to help prevent future increases in COVID-19 cases as variants evolve.

Financial incentives, however, did not factor into the decision to COVID-19 vaccinate among in-betweeners. Some factors may explain this finding. Robertson and colleagues (2022) noted that in some populations, financial incentives had the potential to be a negative influence on COVID-19 vaccination decisions. They found that incentives were potentially less likely to be successful for Republicans than for the general population. Large financial incentives decreased the willingness to consider a COVID-19 vaccine for Black and Latino Americans (Robertson et al., 2022), perhaps stemming from the distrust of the health care system. However, in this study,

early adopters were more likely to report that their employers provided paid time off for COVID-19 vaccinations. This may indicate the need to encourage providers to provide paid time off for COVID-19 vaccinations or to hold employer-based clinics for vaccinations and boosters to increase uptake.

Ultimately in-betweeners chose to be COVID-19 vaccinated first and foremost for personal reasons. More than half (58%) were vaccinated to protect family members or the people they support, and 49% were vaccinated to keep themselves safe. Personal reasons as a primary factor for being vaccinated have also been noted in studies of health care workers (Toth-Manikoswski et al., 2021). It may be important to ensure that COVID-19 vaccination hesitancy campaigns include "asks" and testimony from people supported. Also, employers could engage individuals and families in their on-site efforts to encourage uptake of vaccinations, including boosters.

While mandates may be effective in increasing the uptake of vaccinations, the high COVID-19 vaccination rate among DSPs paired with the number of people who identified personal reasons for being vaccinated needs to be weighed carefully against mandates when considering how to increase DSP COVID-19 vaccination uptake. Understanding reasons for delaying vaccination, such as personal preferences about what type of COVID-19 vaccine one receives and timing, is important for personal autonomy and building trust in communities with lower uptake rates (Hughes et al., 2021). Being person-centered is a foundational pillar of support for people with IDD. It should be afforded to DSPs as well. Most DSPs recognize the benefit of COVID-19 vaccinations to protect others and themselves. Still, a significant subset prefers to decide to be vaccinated when the circumstances are right for them in terms of having enough information, timing, and other factors.

Public health approaches built on personal messages, clear information, and that respect choice and autonomy are more likely to be successful in both encouraging COVID-19 vaccination uptake while building trust among DSPs. In order to build this trust, provider, public health, and state DD agencies should ensure:

1) DSPs should be given a clear message about the risks of COVID-19 to the people they support and how vaccinations can protect the health and safety of individuals with IDD (Frameworks, 2021). These messages should also include plain language information on FDA approval, vaccine development, and vaccine safety (CDC, 2021).
2) DSPs should receive paid time off to get COVID-19 vaccinated and if they experience side effects. Some efforts have been made to address this as many states have COVID-19 vaccine mandates (LeadingAge, 2022) and the Families First Corona Virus Response Act (FFCRA) of 2020 provided emergency paid sick leave for essential workers; however, it excluded independent contractors (National Council on Disability [NCD], 2021). Most DSPs are the primary wage earner and make low wages (Hewitt, Pettingell, Kramme, et al., 2021; PHI, 2021). Vaccine-related unpaid time off may be a financial burden to many DSPs.
3) Public health messages specific to DSPs are an essential tool to increase COVID-19 vaccination (Frameworks, 2021). For example, highlighting the personal reasons DSPs may choose to be vaccinated or the risk of COVID-19 to the people they support may be compelling. These messages should be tested with unvaccinated DSPs to ensure effectiveness.

Limitations

The main limitation of this study is that data were collected via a convenience sample; therefore, respondents may not match the demographics of the total direct support workforce. This sample also had a longer length of tenure in the field and less participation by people of color than that of some studies. Moreover, while the sample is large sample and from the District of Columbia and nearly every state, caution should be taken in generalizing results to all DSPs in the United States and U.S. territories. It would also have been interesting to explore the role either a state or employer COVID-19 vaccination mandate influenced the bivariate relationships; however, these variables were not asked of all respondents.

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Table 1 Click here to access/download;Table;Pettingell Vaccinations In-Betweeners Table 1.docx

Table 1

Description of Vaccinated Direct Support Professionals (DSPs)

Demographic Variables	N	%
Gender identity		
Man (including transgender man)	233	17.0
Woman (including transgender woman)	1,096	81.0
Non-binary	19	1.0
Prefer to self-describe	7	1.0
Total	1,355	100.0
Race		
American Indian or Native American	33	3.0
Asian	28	2.0
Black or African American	191	14.0
White	980	74.0
Some other race	28	2.0
Two or more races	66	5.0
Total	1,326	100.0
Hispanic, Latino, or Spanish background		
Yes	103	8.0
No	1,212	92.0
Total	1,315	100.0
Education level		
Less than high school	28	2.0
High school diploma or GED	416	30.0
Some college	241	17.0
2-year degree	385	27.0
4-year degree	230	16.0
Post-graduate education	109	8.0
Total	1,406	100.0
Annual household income		
$14,999 or less	54	4.0
$15,000 to $21,999	103	8.0
$22,000 to $39,999	408	33.0
$40,000 to $99,999	579	47.0
$100,000 or more	103	9.0
Total	1,247	100.0
Type of work setting		
Agency or facility	958	63.0
Family or individual home	378	25.0
Community employment or job site	145	10.0
Other site	31	2.0
Total	1,512	100.0

Length of tenure at primary employer		
Less than 6 months	89	6.0
6 to 12 months	133	9.0
12 to 24 months	133	9.0
24 to 36 months	138	9.0
More than 36 months	1,017	67.0
Total	1,510	100.0

Table 2
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Table 2

Employer's Role in Experiences of COVID-19 Vaccinated Direct Support Professionals (DSPs)

Employer's role and vaccinated DSPs	N	%
Employer requires COVID vaccination to continue to be employed		
Yes	651	44.0
No	838	56.0
Total	1,489	100.0
Employer or state offers a financial incentive for employee COVID-19 vaccination		
Yes	439	36.0
No	782	64.0
Total	1,221	100.0
Employer offers paid time off (PTO) for employees to get COVID-19 vaccinated		
Yes	524	46.0
No	610	54.0
Total	1,134	100.0

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Table 3

Demographic Comparisons by Vaccinated Direct Support Professionals (DSPs) Hesitancy Status

Variable	In-Betweener DSPs		Early Adopter DSPs		
Region	N	%	N	%	*p*-value
Gender identity					
Man (including transgender man)	79	14.0[a]	154	20.0[b]	**0.006**
Woman (including transgender woman)	479	85.0 [a]	613	78.0 [b]	
Other	7	1.0 [a]	19	2.0 [a]	
Total	565	100.0	786	100.0	
Race					
Black or African American	94	17.0 [a]	95	12.0 [b]	**0.002**
White	383	69.0 [a]	595	78.0 [b]	
Other	78	14.0 [a]	77	10.0 [b]	
Total	555	100.0	767	100.0	
Hispanic, Latino, or Spanish background					
Yes	47	8.0 [a]	56	7.0 [a]	0.533
No	513	92.0 [a]	695	93.0 [a]	
Total	560	100.0	751	100.0	
Education level					
Less than high school	12	2.0 [a]	16	2.0 [a]	**<0.001**
High school diploma or GED	204	34.0 [a]	209	26.0 [b]	
Some college	184	31.0 [a]	201	25.0 [b]	
2-year degree	89	15.0 [a]	152	19.0 [b]	
4-year degree	81	14.0 [a]	148	18.0 [b]	
Post-graduate education	31	4.0 [a]	78	10.0 [b]	
Total	601	100.0	804	100.0	
Annual household income					
$14,999 or less	25	5.0 [a]	29	4.0 [a]	**0.035**
$15,000 to $21,999	57	11.0 [a]	45	6.0 [b]	
$22,000 to $39,999	170	33.0 [a]	237	33.0 [a]	
$40,000 to $99,999	228	43.0 [a]	349	48.0 [a]	
$100,000 or more	40	8.0 [a]	63	90 [a]	
Total	520	100.0	723	100.0	
Type of work setting					
Agency or facility	435	66.0 [a]	520	61.0 [b]	**0.037**

Family or individual home	153	23.0 [a]	224	26.0 [a]	
Community employment or job site	62	10.0 [a]	83	10.0 [a]	
Other site	7	1.0 [a]	24	3.0 [a]	
Total	657	100.0	851	100.0	
Age (average)	46 years		49 years		**<0.001**

Note. Subscript letters [a] and [a] in a row indicate column proportions do not differ significantly at the 0.05 level. Subscript letters [a] and [b] in a row indicate column proportions differ significantly at the 0.05 level. *P*-values in bold represent relationships that are significant at the 0.05 level.

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Table 4

Employer's Role in Vaccination Experiences by Early Adopter and In-betweener Direct Support Professionals (DSPs)

Experiences around vaccinations with employers	In-betweener DSPs		Early Adopter DSPs		*p*-value
Employer requires vaccination to continue to be employed	N	%	N	%	
Yes	310	48.0 [a]	340	40.0 [b]	**0.005**
No	338	52.0 [a]	499	60.0 [b]	
Total	648	100.0	1,011	100.0	
Employer or state offers a financial incentive for employee vaccination	N	%	N	%	
Yes	195	36.0 [a]	244	36.0 [a]	0.881
No	343	64.0 [a]	437	64.0 [a]	
Total	538	100.0	681	100.0	
Employer offers paid time off (PTO) for employees to get vaccinated	N	%	N	%	
Yes	197	40.0 [a]	327	51.0 [b]	**<0.001**
No	296	60.0 [a]	313	49.0 [b]	
Total	493	100.0	640	100.0	

Note. Subscript letters [a] and [a] in a row indicate column proportions do not differ significantly at the 0.05 level. Subscript letters [a] and [b] in a row indicate column proportions differ significantly at the 0.05 level. *P*-values in bold represent relationships that are significant at the 0.05 level.

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Table 5

In-betweener vaccinated Direct Support Professionals (DSPs) Motivations for Getting Vaccinated

Reasons in-betweener Direct Support Professionals (DSPs) got COVID-19 vaccinated	N	%
To protect family members or the people supported from getting COVID-19	379	58.0
To protect self from getting COVID-19	321	49.0
Employer has a COVID-19 vaccine mandate	251	38.0
Know people who got sick with COVID-19	144	22.0
DSP got sick with COVID-19	93	14.0
State worked in has a COVID-19 vaccine mandate	69	11.0
Financial incentive from employer	60	9.0
Financial incentive from state worked in	23	4.0
Other	48	7.0

Note: N=657; Respondents could choose more than one option.