

Inclusion

Interventions Used with Direct Support Workforce of Adults with Disabilities in Home and Community-Based Settings: A Scoping Review --Manuscript Draft--

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Abstract:	<p>This scoping review fills the gap on key characteristics of interventions and trainings for direct support workforce (DSW) of adults across disabilities and aging adults. We included quantitative and qualitative studies examining the impact of interventions in home and community-based settings in the US or internationally and published in English since 1990. We initially identified 2,551 titles and completed final data extraction on 65 articles. Most of the studies were quantitative. The interventions reviewed were diverse, including Active support, Positive Behavior Support, and DSW stress reduction. We concluded that there is a need to conduct high-quality research focused on DSW wellbeing and their feeling of being valued to inform the field on how to best select and retain them.</p>

Interventions Used with the Direct Support Workforce in Home and Community-Based Settings: A Scoping Review

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Interventions Used with Direct Support Workforce of Adults with Disabilities in Home and Community-Based Settings: A Scoping Review

Introduction

Direct support workers (DSW), including direct support professionals and supervisors play a critical role in supporting people with disabilities (PWD) and people who are aging to live, work, and enjoy community living. The roles of DSW include supporting PWD and those with aging needs to live and work in the community as independently as they can and want. Job titles for DSW are very diverse, and can include direct support workers, personal care assistants, home health aides, job coaches, residential assistants, social pedagogues, social workers, and more. Many of these titles in some contexts also represent supervisors. While supervisors of direct support professionals are critical for hiring and supporting them on the job, many also provide direct support. This is especially true when there is a shortage of committed, competent direct support staff to meet the demand for direct support. In such cases, many supervisors will step in to fill open shifts and ensure that people who need support receive services. For this reason, direct support is also a foundational competency for supervisors of DSWs (Sedlezky et al., 2013). Supervisors are sometimes referred to as managers. In this review we use the term direct support workforce (DSW) to include both direct support staff and supervisors.

Given the service sectors that fund DSW, the variety of settings in which they work, and the populations they support, there are some difficulties in obtaining precise counts of these professionals. For example, in the United States, the Bureau of Labor Statistics counts DSW as home health aides, personal care aides, residential care aides, and nursing assistants (US Bureau of Labor Statistics, 2022). There are over four million workers in these sectors, and due to the aging population, there is no other occupational sector with a greater demand right now (PHI, 2022). The majority of this job growth is occurring in home and community-based services.

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Direct support professionals who provide services for people with intellectual and developmental disabilities (IDD) are not counted within a specific occupational category, but are subsumed under other categories, which might result in undercounting (President's Committee for People with Intellectual Disabilities, 2018).

In Europe, social service provision is also one of the biggest job creators with over 10.9 million professionals across the European Union and with over 2 million new jobs created in the last 10 years (EASPD, 2019). In Australia in 2018, there were 2.65 million carers, representing 10.8% of all Australians (ABS, 2018). In the majority Asian and African countries, the statistics for DSW are not readily available, partly because supports are being often provided by local or international NGO staff.

The direct support workforce has often been plagued with instability of workers, such that tenure for workers spans months rather than years (National Core Indicators, 2022; PHI, 2022). This likely results in difficulties for people who depend on these supports. Low wages, difficulty of work, lack of collegial support, and the lack of opportunity for advancement are reasons cited by DSW for leaving the profession (Hewitt et al., 2019; Mittal et al., 2009). High incidence of injuries of DSWs on the job has also been a significant factor for leaving the profession (McCaughey et al., 2012). A lack of adequate training to manage the demands of the job is another often cited reason why workers pursue other positions (Hewitt et al., 2019).

Some people require supports around the clock, while others only need support for specific tasks or in a specific community context. DSW support peoples' health and wellness, safety, as well as providing person-centered practices and supporting community inclusion across residential, employment and other community-based settings. This requires a broad range of knowledge and skills of the person supported. In the United States, a cross-sector (disability

and aging) set of core competencies for nursing assistants, home health, and personal care aides were developed and validated as a guide for staff providing services (Centers for Medicare and Medicaid Services, 2014). In an international context, in the Convention for the Rights of Persons with Disabilities (CRPD), supports and services are mentioned in Articles 19 (Living independently and being included in the community), Article 20 (Personal mobility); Article 25 (Health); and Article 26 (Habilitation and rehabilitation). Training of support staff is explicitly mentioned under Article 26.

Training

Direct support workforce (DSW) is often considered entry level staff and minimal training is typically required prior to hire. In many countries, there are no standard training requirements beyond passing a background check. This contrasts with training and clinical requirements for practicing in other human service positions in community-based settings, including medicine, teaching, social work, and psychology. DSW provide daily support to PWD in communication and behavior management, in increasing health and wellness, evaluating progress toward goals, teaching skills for daily living and employment, ensuring safety in locating and taking transportation, and even passing medications. These roles overlap with other licensed or credentialed positions.

In Minnesota, an average of 29 pre-service training hours were reported by organizations employing DSW, and 18 annual in-service training hours (Pettingell et al., 2019). These data were similar to the number of hours in New York state, and significantly less than the recommended number of training hours (Hewitt et al., 2015). These hours are also significantly less than the number required for certified nursing assistants who provide entry level support in a clinical setting (Marquand & Chapman, 2014). While there are many barriers to providing

trainings for DSW (e.g., lack of employer capacity, transportation, time-prohibitive), Bogenschutz et al. (2015) found that organizations that provided online training and on the job support to DSW in community-based settings significantly reduced staff turnover. One of the key issues in the field is that there is no state or nationwide mandated training for DSW. Each service provider is likely to provide basic trainings focused on First Aid and other safety precautions but will vary in what other types of trainings they provide, if any. The types of training can range on many dimensions, including in-person or online, passive or active content delivery, group or individual based, short-term or ongoing (Newbould et al., 2022).

Purpose

The purpose of this scoping review is to build on recent findings from a special issue of *Inclusion* edited by Scott & Thoma (2022) focused on current issues in DSW serving people with IDD by reviewing training initiatives utilized with DSW supporting PWD across disability types in home and community-based settings. The purpose of this scoping review was to answer the following guiding questions:

- What types of interventions and trainings have been reported in peer-reviewed literature or in dissertations for the DSW and frontline supervisors since 1990?
- What are the areas of strength in the studies reporting on the interventions and trainings for the DSW?
- What are the gaps in the studies reporting on interventions and trainings for DSW?

Method

Operational Definitions

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There are diverse terms used for professionals who provide direct support to people with disabilities and those who are aging. Direct support professionals (DSP) were defined as the staff who provide regular, paid direct support services in home and community-based settings including employment for a person or multiple people who have a disability and/or who are aging. Common job titles for DSP are home care workers, personal care assistants, home health workers, independent living workers, employment specialists, job coaches, and others. Frontline supervisors were defined as the staff who provide supervision to DSP as previously defined as well as provide some direct support. Supervisors are often also referred to as managers. In this review, for the reasons cited above, including an unclear number of DSPs who serve people with IDD exclusively and a set of core competencies for DSW that was developed across sectors (disabilities and aging) rather than for DSPs serving people with specific disabilities, we chose to target DSW across disability and aging sectors in this review. Additional reasons for this decision are: a) many provider organizations serve people with different types of needs, not people with IDD exclusively, b) researchers and policy makers have been highlighting the need for person-centered services based on need, rather than a specific type of disability (National Academies of Sciences, Engineering, & Medicine, 2017), and c) rather than focusing on staff supporting people with a specific disability, we selected studies in which staff provided support in home, community-based or employment settings, thus eliminating institutional or educational environments.

For clarity, we identified the target population served in each reviewed article as displayed in Table 2. It is apparent from Table 2, that a number of studies (10) targeted multiple populations when examining DSP trainings and interventions.

Eligibility Criteria

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The following were used as inclusionary criteria for the scoping review:

1. The study was published in English; 2. The primary participants were direct support professionals (DSP) or frontline supervisors, as previously defined. We also searched for paid family caregivers, but no articles were included in the final set; 3. These staff provided support in home, community-based or employment settings (vs. in institutional or educational settings) to be able to make conclusions about DSW working in the community; 4. People who received supports by these paid direct care workers were adults (age 18 years or older) with any type of disability or who are aging to be able to generalize to adult services; 5. The study was carried out in any country not to miss any studies with effective and innovative approach not conducted in the US; 6. A training, intervention, mentoring, coaching, professional development, training approach, coursework, or a similar initiative was included; 7. Studies were published between 1990 and February 2021 to capture research conducted after the Americans with Disabilities Act (ADA) came into effect; and 8. Any study type, including groups designs, single case designs, mixed methods, and qualitative methods published in peer-reviewed studies or dissertations were included. We were inclusive of the studies with clearly stated research designs both in peer-reviewed articles as well as dissertations to capture as many well-designed research studies that have been published as well as those that were being conducted at universities under the guidance of faculty in the field.

Search Strategy

With the assistance of a University of Minnesota librarian, the following eight electronic databases were identified for the search strategy: PsycINFO via Ovid, CINAHL (EBSCO), Ovid Medline, Business Source Premier (EBSCO), EMBASE (Ovid), Academic Search Premier,

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ProQuest's Global Dissertations and Theses, and MedRxiv. The databases were searched in February 2021.

These were the search terms, their sequences, and combination used in PsycINFO and modified with database specific operators as needed:

1. (((("Direct care" OR "Direct-care" OR "Direct support" OR "Direct-support" OR "personal care" OR "home health" OR "independent living") adj3 (worker* OR workforce OR staff OR assistant* OR aide* OR profession* OR provider*)) OR ("job coach" OR "job coaches" OR "job coaching" OR "employment specialist" OR "employment specialists" OR "support staff" OR "paid family caregiver" OR "paid family caregiving" OR "paid family caregivers")).ti,ab; 2. (disabilit* OR disorder* OR autism OR ASD OR autistic OR asperger*).ti,ab.; 3. Exp Disorders/; 4. 2 OR 3; 5. ((work* OR educat* OR employ* OR job*) adj3 (interven* OR program*)).ti,ab.; 6. Exp Occupational Stress/ OR Exp Job performance/ OR Exp Personnel Training/ OR Employee Turnover/; 7. 5 OR 6 ; 8. ("Group Homes" OR "Assisted Living" OR "living with family" OR "living independently").sh; 9. (work* OR educat* OR employ* OR job*).ti,ab; 10. Exp Screening/ OR Exp Coping Behavior/ OR Needs Assessment/; 11. (support* OR supervis* OR manage* OR managing OR train* OR interven* OR program*).ti,ab.; 12. (8 OR 9) AND (10 OR 11); 13. 7 OR 12; and 14. 1 AND 4 AND 13.

The PRISMA table (Moher et al., 2009) in Figure 1 details the number of articles identified and how these were refined to the resultant set of 65 articles that were coded in our review. There were 2,551 unduplicated articles identified in the literature search. Titles and abstracts were first screened using the eligibility criteria on Rayyan (Ouzzani et al., 2016), a free software package for literature reviews. Seventy-eight percent of the titles and abstracts were screened by at least two authors, and 8% of the articles were screened by three authors for a total

of 86% of articles screened by two or more authors. Discrepancies were discussed and resolved as a team. There were 472 articles that we obtained for full text screening, which was also conducted using Rayyan. Eleven percent of articles were double coded for reliability, with a 92.6% agreement rate. Of those articles, 65 met our eligibility criteria for inclusion in the scoping review.

[Insert Figure 1 - PRISMA Table here]

Data Extraction Procedure

We created an electronic coding protocol on Qualtrics (Qualtrics, 2022) based on our guiding questions and the scoping review purpose. The coding protocol included a combination of multiple choice and open-ended questions. For the open-ended questions, we copied text from the articles to give us accurate descriptions from the articles. A random selection of 11 articles (16.7%) were double-coded. We computed the overall percentage of agreement as the total number of cells where the two coders agreed divided by the total number of cells where coders disagreed. Interrater agreement was 80.7%. There were two questions in our dataset with inadequate agreement in coding related to study outcomes. We compared codes and identified discrepancies in our data. Discrepancies were discussed with reference to the article text until consensus was reached. The discrepancy regarding types of trainings/interventions described in the studies was discussed among coders until they agreed on the majority. As for discrepancy about the effects of the trainings/interventions on outcomes, we invited a third coder with expertise in quantitative statistics to review the reported effects until agreement was reached. We subsequently reconceptualized the definition and recoded the variables with greater accuracy.

Data Analysis

We used descriptive statistics to report quantitative data and summarized the results of open-ended questions in a qualitative narrative. When reporting on outcomes in quantitative and mixed methods studies, we grouped the outcomes into the following categories: staff wellbeing, retention, recruitment, selection, risk management, competencies, and supporting people with disabilities.

Results

In this section, we report all the key characteristics of the 65 studies included in the final review (e.g., year of publication; setting, type, dosage, etc. of the intervention or training). Table 2 provides a succinct overview of the articles with a specific focus on the type of research study design, number and type of study participants, intervention/training description, population served, and outcome type.

Years of publication. There were 65 articles included in our final review. Twenty studies (30.8%) were published in the 1990s, six (9.2%) were published in the 2000s, and 39 (60%) were published between 2011 and 2020.

Countries where studies took place. Forty-one (63%) studies took place in the United States, 11 (16.9%) in the United Kingdom (England, Scotland, Wales, Northern Ireland), three in Australia (4.6%), two (3.1%) in Canada, and five (7.7%) in other countries (Spain, Sweden, and the Netherlands - 3 studies). Three other studies did not provide sufficient information to determine the country where the study took place.

Type of publication. Studies were coded as peer-reviewed journal articles or dissertations. Fifty-four (83.1%) studies were peer-reviewed journal articles, and 11 (16.9%) were dissertations.

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Study participants. A large number of the studies targeted DSP/PSA only (47 - 71.3%). Eleven (16.9%) studies targeted DSP/PCA and other staff (e.g., supervisors, case managers, employment specialists). Four studies (6.2%) targeted employment specialists only (e.g., job coaches, job developers). Only one study (1.5%) targeted supervisors by themselves. The remainder of the studies (4.9%) targeted other staff or a combination of staff (e.g., nurses, mental health team members).

Populations served. In the majority of studies (38) the staff served adults with intellectual and developmental disabilities (IDD) (58.5%). In 10 studies (15.4%), the staff served people with IDD and another population (e.g., people with mental health needs, physical disabilities). In two studies (3.1%), staff served only adults with mental health needs. Fourteen studies (21.5%) served people with aging needs, including dementia. In the remainder of the studies (15.4%) the staff served either an unspecified population or a people with a specific type of disability (e.g., sensory, physical, learning disability). Please note that the percentages exceed 100%. This is because some articles included multiple populations served in different combinations.

Settings where services were provided. In most studies, services were provided in congregate residential settings (41 – 63%), followed by during community-based activities other than employment (11 – 16.9%), individual residential settings (9 – 13.8%), community-based employment settings (9 – 13.8%), day program (8 – 12.3%), and facility-based employment (5 – 7.7%). In three studies (4.6%), the settings were unclear. Please note that the percentages exceed 100%. This is because some articles included multiple settings in different combinations.

Level of intervention/training implementation. The level at which the intervention or training were implemented were coded as with a segment of staff – 37 (56.9%), system-wide

implementation – 7 (10.8%), site-level implementation – 19 (29.2%), individual level – 7 (10.8%), or other (i.e., with DSPs who had limited English proficiency – 1 (1.5%).

Number of participants in intervention/training. Studies were coded based on the number of participants in the intervention/training. Nineteen (29.2%) studies reported 1-10 participants, 24 (36.9%) studies reported 11-50 participants, nine (13.8%) studies reported 51-100 participants, 12 (18.5%) studies reported 101+ participants, and one (1.5%) study reported N/A or not clear.

Intervention/training implementation dosage. There were 20 out of 65 studies (30.8%) that used some other kind of measure for dosage. Dosage was measured in four ways: number of sessions (50 studies – 76.9%), frequency of sessions (21 – 32.3%), length of sessions in weeks (30 – 46.2%), and length of sessions in minutes (37 - 56.9%). There were 14 studies that reported using all four measures of dosage, six of these also used another method in addition to the four we coded. There were ten studies that used three out of the four measures of dosage, three of which reported an additional measure we did not code. There were 15 studies that used two out of the four measures of dosage, four of which reported an additional measure we did not code. There were 18 studies that used one out of the four measures of dosage, six of which reported an additional measure we did not code. There were nine studies that did not use any of the four measures of dosage, four of which reported an additional measure we did not code, and four did not report anything on dosage.

The reported frequency of sessions (21 studies) ranged from daily (1), once per week (14), every two weeks (3), once every 2-3 weeks (1), to once a month (1). One study reported a single training session followed by 3-4 observation sessions/week. For dosage reported in the number of weeks of implementation, there was wide range from one-week implementation to 78

weeks. The average length of implementation in weeks was 19. As for studies reporting dosage in the number of minutes of implementation, the range was from 10 minutes to 728 minutes. The mean length of implementation for studies reporting dosage in minutes was 160 minutes.

Maintenance of interventions/training. Nineteen (29.2%) studies included reports of maintenance practices to sustain the interventions, while 46 (70.8%) studies did not include maintenance practices.

Types of the interventions. There were 20 out of 65 (30.8%) studies that included the actual name of an intervention/training (Table 1). The remaining studies described the interventions in more general terms (e.g., staff training to choose, prioritize, and implement changes in communication). The scoping review studies summary table (Table 2) includes descriptions of each intervention/training.

[Insert Table 1 here]

Intervention/training delivery method. Forty-nine (74.2%) studies reported the intervention delivery method was in person, three (4.5%) studies reported online, two (3%) reported a mixed / hybrid delivery method, and 11 (16.7%) studies were coded N/A or not reported. One (1.5%) study included an “other” delivery method, which was “phone interview.”

Intervention/training delivery format. Articles were coded based on the size of the group of participants receiving the intervention together. Fifteen (23.1%) studies reported a 1 on 1 format of delivery. Twenty (30.8%) studies reported a small group delivery format (10 people or less). Sixteen (24.6%) studies reported a large group delivery (11 people or more). Twenty two (33.8%) studies were coded as N/A or not reported. Four (6.2%) studies were coded as “other.”

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Implementation fidelity. Twenty-eight (43.1%) articles stated implementation fidelity was assessed, 35 (53.8%) articles did not state one way or the other if implementation fidelity was assessed, and two articles (3.1%) stated they did not assess implementation fidelity.

Types of research designs. Studies were coded as quantitative, qualitative, or mixed methods designs. Fifty-seven (87.7%) studies were quantitative, five (7.7%) studies were qualitative, and three (4.6%) were mixed methods studies.

Quantitative studies. The 57 quantitative studies (excluding the three mixed methods studies) included a varied number of outcomes and research designs. There were 19 studies (33.3%) using a single-subject design that did not report significance levels, but rather provided descriptive information. Three (5.3%) studies used a group research design, but provided only descriptive findings. The remaining 35 studies (61.4%) included groups designs and ran an inferential statistical test to determine the significance of an outcome as a result of the reported intervention.

Qualitative studies. Qualitative research approaches across the five qualitative studies varied and included a phenomenological approach, grounded theory, and the RE-AIM framework. The most frequently used method of qualitative analysis reported was a thematic analysis. Multiple studies reported using an iterative process of thematic analysis, explaining that they moved between data collection and analysis throughout the study.

Mixed methods studies. Among the three mixed methods studies, the quantitative analysis methods included were descriptive statistics or visual analysis in single-subject designs. Thematic analysis was the most frequently used qualitative analysis method.

Study findings

Quantitative studies. Most studies in this review included more than one outcome. Those outcomes were often clustered in one of the outcome categories (e.g., there may have been three outcomes listed under staff wellbeing in one study). This has led to coding many studies as having mixed significance results for the outcome category. The tests included parametric and non-parametric t-tests, Chi-square, analysis of variance (ANOVA), analysis of covariance (ANCOVA), and a multivariate analysis of variance (MANOVA).

Thirty-one (54.4%) of the 57 studies included supporting people with disabilities as an outcome. Of those five studies reported a statistically significant outcome in the right direction only. Six studies with supporting people with disabilities as an outcome reported mixed results due to measuring multiple outcomes within this category. Two studies reported a non-significant outcome. The remainder (44 studies – majority) were single-subject or descriptive studies only with no information on statistical significance.

Twenty-two (38.6%) studies included staff competencies as an outcome. Eleven of those reported a statistically significant outcome results only. Four studies reported mixed results due to multiple outcomes measured under the staff competency outcome category. The remainder of studies (seven) were single-subject or descriptive studies only with no information on statistical significance.

Fifteen (26.3%) studies included staff wellbeing as an outcome. Two studies reported statistically significant results only. Eleven (majority) of those studies reported mixed results as a result of measuring multiple outcomes under the staff wellbeing category. Only two studies did not include statistical tests to report their findings.

Only three (5.3%) studies included staff retention as an outcome. Two of those studies reported statistically significant results only and one study reported mixed results. Only one

study (1.8%) included risk management as an outcome (statistically significant). No studies included staff recruitment or selection as an outcome of their intervention. Refer to Table 2 for detailed information about outcome categories and their significance by study.

In total, forty-four (77.2%) studies reported a statistically significant impact of their intervention. That included studies with mixed results due to multiple outcomes in an outcome category and excluded studies with no statistical inferential tests.

Qualitative and mixed methods studies. There were eight studies that used qualitative methods to gather data about the effectiveness of interventions, and three of these were mixed methods studies. Six of the eight reported on research related to staff training (Codling et al., 2014; Frost et al., 1999; Johnson et al., 2017; Savundranayagam et al., 2019; Schaap, et al., 2018; and Walsh, et al., 2019), one investigated the attributes of a successful employment specialist (Tilson and Simonsen, 2012), and another examined the contextual factors necessary to implement Active support (Qian et al., 2017), including the benefits and challenges for DSPs.

Among the six studies that include qualitative data to evaluate a staff training intervention, there were several common themes. Some of these included general satisfaction with the training (Codling et al., 2014; Walsh et al., 2019), learning new and different ways to think about their jobs (Schaap et al., 2018; Walsh et al., 2019; Johnson, et al., 2017), and their intent and ideas on how they were going to use what they learned on the job (Codling et al., 2014; Johnson et al., 2017; and Savundranayagam et al., 2019). Savundranayagam et al. (2019) also found that staff especially liked the “realistic simulations” included in the training, and Johnson et al. (2017) found that staff felt they learned new ways to “share the moment” and enjoy their time working with clients. This was a mixed method study that showed that the amount of time staff spent interacting with the people they supported increased from pre- to post-

training as measured using behavioral observations (Johnson et al., 2017). A few other interesting findings included spillover of what they learned into their personal lives (Walsh et al., 2019), and a need for changes in agency policy if ideas from the training were to be implemented (Codling et al., 2014).

[Insert Table 2 here]

Discussion

The state of staffing home and community-based services for people with disabilities and aging needs in the US and internationally is at a point of breaking (ANCOR, 2022). Among the key reasons for this crisis is the lack of adequate training to manage the demands of the job (Hewitt et al., 2019). In this context, it is troubling that in the scoping review we were able to identify only 65 studies published in the last 30 years in English conducted across multiple countries that met our inclusionary criteria of examining the impact of an intervention or training on the outcomes of DSW. On a positive note, the number of studies published more recently has been steadily increasing. Not surprising, most of the studies were conducted in the US, with western and northern Europe and the UK following. It is disturbing that we did not find any studies we could report on that were conducted in Asia, Africa, or in eastern Europe. It is also unsettling that in the current crisis of recruiting and retaining DSW (National Core Indicators, 2022; PHI, 2022), there were only three studies that directly examined staff retention and no studies that examined staff selection as outcomes of an intervention. Further, it is surprising that only eight studies were qualitative or at least included a qualitative component.

In response to the first guiding question of this scoping review, “What types of interventions and trainings have been reported in peer-reviewed literature or in dissertations for the DSW and frontline supervisors since 1990?”, we can conclude that the majority of the

interventions were focused on improving staff competencies in the areas of diagnosis, support provision related to basic needs of PWD (e.g., nutrition, Kneringer et al., 1999), which tended to be older studies, end of life care (Codling et al., 2014), competencies related to the engagement of PWD in daily activities or in choice making (Pingo et al., 2010), or in conducting communication and behavior interventions (Barnes et al., 2011). Less than a fourth of the interventions focused on the actual staff needs. These studies can be divided into those that used an intervention to improve staff management approaches and strategies (Heaney et al., 1991), which tended to be older studies, and those with a goal to improve staff general wellbeing, mostly focused on stress reduction (Barbosa et al., 2016).

In the context of the current shortage of qualified or any DWS in home and community-based service provision of PWD, this review can serve an indicator of the reversed emphasis in this field. While staff competencies are critical in providing quality services to PWS, the fundamental problem at this time is hiring and retaining staff who feel valued and supported on the job (Pettingell et al., 2022).

Ironically, most of the interventions/trainings focused on the staff wellbeing utilized group research designs with larger numbers of participants, and therefore one could argue that the approaches to intervention in these studies were not person-centered, compared to the numerous single-subject studies with small numbers of participants targeting mostly communication and behavior competencies related to how interact with PWD. One could also argue that at this time, it is as important to conduct person-centered interventions aiming at improving staff wellbeing according to their needs and values, as it is for the staff to provide person-centered support to PWD.

The second guiding question focused on “What are the areas of strength in the studies reporting on the interventions and trainings for the DSW?”. The studies in this scoping review included a number of strengths. Most of the studies were able to measure an impact of an intervention on multiple outcomes. The studies represented a variety of research designs and data analytical techniques and were published across diverse types of journals, including those specializing in outcomes for people with IDD, aging needs, and had a behavioral or nursing focus. The studies included a number of useful recommendations for future research in this field. In line with the point made earlier about need for more interventions focused on staff wellbeing, the recommendations included prioritizing staff care, interventions for supervisors and managers, and trainings for staff. Recommendations to support staff care included providing tools for stress management and burnout, implementing mindfulness-based interventions, providing health education programming, and supporting staff well-being at an organizational level. Several studies recommend investing in quality training for staff. They suggested trainings to include repeated practice with feedback and follow-up sessions to improve generalizability. There were recommendations to build organizational capacity before attempting a new intervention. Future research recommendations also included incorporating technology into staff trainings. We noted that in one study, researchers were investigating the impact of people with intellectual disabilities providing support for people with disabilities (Frost, 1999), a direction that should be investigated further with the goal of providing benefit to both the staff with disabilities and those being supported.

In addressing “What are the gaps in the studies reporting on interventions and trainings for DSW?”, it needs to be emphasized that many studies targeted a small number of participants, those using single-subject designs, making it therefore difficult to determine whether results

were statistically significant and to generalize the findings. There were very few studies using a randomized-control trial design, which limited the conclusions about the causality of the interventions and to be only able to comment on associations between interventions and outcomes. In addition, there were very few qualitative studies that we were able to include in this review, thus limiting the in-depth analysis and recommendations that could be made using these types of studies. We also noted that there were different types of interventions that were addressed different types of outcomes, but there were not many instances of replication. Replication can help to validate and refine the components needed in effective interventions and trainings. Many studies used convenience samples and faced high staff turnover, making it challenging to draw valid and generalizable conclusions. Only a handful of studies examined the extent to which the impact of the intervention was maintained over longer periods of time. Very few studies measured the extent to which the intervention was implemented with fidelity. Studies were omitting to address the outcomes of staff retention and selection. Many of the studies were outdated and could be questioned for their relevance at this time.

When we consider the 38 studies focused on trainings or interventions for DSW working with people with IDD specifically, all but one were quantitative or mixed methods studies. As we anticipated, there were no clear unique features of the studies in which DSW were working with people with IDD as opposed to working with people with IDD along with people with other disabilities or with those with other disabilities altogether. Studies of DSW regardless the population with which they were working tended to emphasize person-centered practices and related types of training that aim to identify and carry out supports reflecting the person's desires (e.g., Barbosa et al., 2016; 2017; Coogle et al., 2007; McKnight, 1997) as well as skills that would help staff support persons' disability-related needs (e.g., Chatterton, 1999; Gaugler et al.,

2016; Tredinnick et al., 2013). In general, very few studies addressed coping skills for the workers to help them build personal capacities to deal with the stresses of this work (e.g., Horneij et al., 2001; McConachie et al., 2014).

Conclusion

We consider this scoping review to be a call to researchers to conduct high-quality studies, using a variety of methodologies that focus on the wellbeing of and the feeling of being valued by DSW. While studies are also needed to generate new knowledge on staff competencies and how to work best with people they support, at the current time, we first need to address the dire situation of the majority service providers lacking qualified staff, resulting in diminished service quality for PWD. By conducting more quality studies on this topic, the research community can begin offering more and better approaches and strategies service providers can use to select and retain their DSW. Further, there is a need to encourage research in the rest of the world to study DSW and their outcomes in the context of their cultures and communities.

DIRECT SUPPORT WORKFORCE: SCOPING REVIEW

Interventions Used with Direct Support Workforce of Adults with Disabilities in Home and Community-Based Settings: A Scoping Review**Introduction**

Direct support workers (DSW), including direct support professionals and supervisors play a critical role in supporting people with disabilities (PWD) and people who are aging to live, work, and enjoy community living. The roles of DSW include supporting PWD and those with aging needs to live and work in the community as independently as they can and want. Job titles for DSW are very diverse, and can include direct support workers, personal care assistants, home health aides, job coaches, residential assistants, social pedagogues, social workers, and more. Many of these titles in some contexts also represent supervisors. While supervisors of direct support professionals are critical for hiring and supporting them on the job, many also provide direct support. This is especially true when there is a shortage of committed, competent direct support staff to meet the demand for direct support. In such cases, many supervisors will step in to fill open shifts and ensure that people who need support receive services. For this reason, direct support is also a foundational competency for supervisors of DSWs (Sedlezky et al., 2013). Supervisors are sometimes referred to as managers. In this review we use the term direct support workforce (DSW) to include both direct support staff and supervisors.

Given the service sectors that fund DSW, the variety of settings in which they work, and the populations they support, there are some difficulties in obtaining precise counts of these professionals. For example, in the United States, the Bureau of Labor Statistics counts DSW as home health aides, personal care aides, residential care aides, and nursing assistants (US Bureau of Labor Statistics, 2022). There are over four million workers in these sectors, and due to the aging population, there is no other occupational sector with a greater demand right now (PHI, 2022). The majority of this job growth is occurring in home and community-based services.

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Direct support professionals who provide services for people with intellectual and developmental disabilities (IDD) are not counted within a specific occupational category, but are subsumed under other categories, which might result in undercounting (President's Committee for People with Intellectual Disabilities, 2018).

In Europe, social service provision is also one of the biggest job creators with over 10.9 million professionals across the European Union and with over 2 million new jobs created in the last 10 years (EASPD, 2019). In Australia in 2018, there were 2.65 million carers, representing 10.8% of all Australians (ABS, 2018). In the majority Asian and African countries, the statistics for DSW are not readily available, partly because supports are being often provided by local or international NGO staff.

The direct support workforce has often been plagued with instability of workers, such that tenure for workers spans months rather than years (National Core Indicators, 2022; PHI, 2022). This likely results in difficulties for people who depend on these supports. Low wages, difficulty of work, lack of collegial support, and the lack of opportunity for advancement are reasons cited by DSW for leaving the profession (Hewitt et al., 2019; Mittal et al., 2009). High incidence of injuries of DSWs on the job has also been a significant factor for leaving the profession (McCaughey et al., 2012). A lack of adequate training to manage the demands of the job is another often cited reason why workers pursue other positions (Hewitt et al., 2019).

Some people require supports around the clock, while others only need support for specific tasks or in a specific community context. DSW support peoples' health and wellness, safety, as well as providing person-centered practices and supporting community inclusion across residential, employment and other community-based settings. This requires a broad range of knowledge and skills of the person supported. In the United States, a cross-sector (disability

and aging) set of core competencies for nursing assistants, home health, and personal care aides were developed and validated as a guide for staff providing services (Centers for Medicare and Medicaid Services, 2014). In an international context, in the Convention for the Rights of Persons with Disabilities (CRPD), supports and services are mentioned in Articles 19 (Living independently and being included in the community), Article 20 (Personal mobility); Article 25 (Health); and Article 26 (Habilitation and rehabilitation). Training of support staff is explicitly mentioned under Article 26.

Training

Direct support workforce (DSW) is often considered entry level staff and minimal training is typically required prior to hire. In many countries, there are no standard training requirements beyond passing a background check. This contrasts with training and clinical requirements for practicing in other human service positions in community-based settings, including medicine, teaching, social work, and psychology. DSW provide daily support to PWD in communication and behavior management, in increasing health and wellness, evaluating progress toward goals, teaching skills for daily living and employment, ensuring safety in locating and taking transportation, and even passing medications. These roles overlap with other licensed or credentialed positions.

In Minnesota, an average of 29 pre-service training hours were reported by organizations employing DSW, and 18 annual in-service training hours (Pettingell et al., 2019). These data were similar to the number of hours in New York state, and significantly less than the recommended number of training hours (Hewitt et al., 2015). These hours are also significantly less than the number required for certified nursing assistants who provide entry level support in a clinical setting (Marquand & Chapman, 2014). While there are many barriers to providing

trainings for DSW (e.g., lack of employer capacity, transportation, time-prohibitive), Bogenschutz et al. (2015) found that organizations that provided online training and on the job support to DSW in community-based settings significantly reduced staff turnover. One of the key issues in the field is that there is no state or nationwide mandated training for DSW. Each service provider is likely to provide basic trainings focused on First Aid and other safety precautions but will vary in what other types of trainings they provide, if any. The types of training can range on many dimensions, including in-person or online, passive or active content delivery, group or individual based, short-term or ongoing (Newbould et al., 2022).

Purpose

Despite the need for highly competent DSW, there is no known review that summarizes training initiatives utilized with DSW supporting PWD in home and community-based settings.

The purpose of this scoping review was to answer the following guiding questions:

- What types of interventions and trainings have been reported in peer-reviewed literature or in dissertations for the DSW and frontline supervisors since 1990?
- What are the areas of strength in the studies reporting on the interventions and trainings for the DSW?
- What are the gaps in the studies reporting on interventions and trainings for DSW?

Method

Operational Definitions

There are diverse terms used for professionals who provide direct support to people with disabilities and those who are aging. Direct support professionals (DSP) were defined as the staff who provide regular, paid direct support services in home and community-based settings

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including employment for a person or multiple people who have a disability and/or who are aging. Common job titles for DSP are home care workers, personal care assistants, home health workers, independent living workers, employment specialists, job coaches, and others. Frontline supervisors were defined as the staff who provide supervision to DSP as previously defined as well as provide some direct support. Supervisors are often also referred to as managers.

Eligibility Criteria

The following were used as inclusionary criteria for the scoping review:

1. The study was published in English;
2. The primary participants were direct support professionals (DSP) or frontline supervisors, as previously defined. We also searched for paid family caregivers, but no articles were included in the final set;
3. These staff provided support in home, community-based or employment settings (vs. in institutional or educational settings);
4. People who received the supports provided by these paid direct care workers were adults (age 18 years or older) with any type of disability or who are aging;
5. The study was carried out in any country;
6. A training, intervention, mentoring, coaching, professional development, training approach, coursework, or a similar initiative was included;
7. Studies were published between 1990 and February 2021; and
8. Any study type, including groups designs, single case designs, mixed methods, and qualitative methods published in peer-reviewed studies or dissertations were included.

Search Strategy

With the assistance of a University of Minnesota librarian, the following eight electronic databases were identified for the search strategy: PsycINFO via Ovid, CINAHL (EBSCO), Ovid Medline, Business Source Premier (EBSCO), EMBASE (Ovid), Academic Search Premier,

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ProQuest's Global Dissertations and Theses, and MedRxiv. The databases were searched in February 2021.

These were the search terms, their sequences, and combination used in PsycINFO and modified with database specific operators as needed:

1. (((("Direct care" OR "Direct-care" OR "Direct support" OR "Direct-support" OR "personal care" OR "home health" OR "independent living") adj3 (worker* OR workforce OR staff OR assistant* OR aide* OR profession* OR provider*)) OR ("job coach" OR "job coaches" OR "job coaching" OR "employment specialist" OR "employment specialists" OR "support staff" OR "paid family caregiver" OR "paid family caregiving" OR "paid family caregivers")).ti,ab; 2. (disabilit* OR disorder* OR autism OR ASD OR autistic OR asperger*).ti,ab.; 3. Exp Disorders/; 4. 2 OR 3; 5. ((work* OR educat* OR employ* OR job*) adj3 (interven* OR program*)).ti,ab.; 6. Exp Occupational Stress/ OR Exp Job performance/ OR Exp Personnel Training/ OR Employee Turnover/; 7. 5 OR 6 ; 8. ("Group Homes" OR "Assisted Living" OR "living with family" OR "living independently").sh; 9. (work* OR educat* OR employ* OR job*).ti,ab; 10. Exp Screening/ OR Exp Coping Behavior/ OR Needs Assessment/; 11. (support* OR supervis* OR manage* OR managing OR train* OR interven* OR program*).ti,ab.; 12. (8 OR 9) AND (10 OR 11); 13. 7 OR 12; and 14. 1 AND 4 AND 13.

The PRISMA table (Moher et al., 2009) in Figure 1 details the number of articles identified and how these were refined to the resultant set of 65 articles that were coded in our review. There were 2,551 unduplicated articles identified in the literature search. Titles and abstracts were first screened using the eligibility criteria on Rayyan (Ouzzani et al., 2016), a free software package for literature reviews. Seventy-eight percent of the titles and abstracts were screened by at least two authors, and 8% of the articles were screened by three authors for a total

of 86% of articles screened by two or more authors. Discrepancies were discussed and resolved as a team. There were 472 articles that we obtained for full text screening, which was also conducted using Rayyan. Eleven percent of articles were double coded for reliability, with a 92.6% agreement rate. Of those articles, 65 met our eligibility criteria for inclusion in the scoping review.

[Insert Figure 1 - PRISMA Table here]

Data Extraction Procedure

We created an electronic coding protocol on Qualtrics (Qualtrics, 2022) based on our guiding questions and purpose for our scoping review. The coding protocol included a combination of multiple choice and open-ended questions. For the open-ended questions, we copied text from the articles to give us accurate descriptions from the articles. A random selection of 11 articles (16.7%) were double-coded. We compared codes and identified discrepancies in our data. Discrepancies were discussed with reference to the article text until consensus was reached. We computed the overall percentage of agreement as the total number of cells where the two coders agreed divided by the total number of cells where coders disagreed. Interrater agreement was 80.7%. There were two questions in our dataset with inadequate agreement in coding related to study outcomes. We subsequently reconceptualized the definition and recoded the variables with greater accuracy.

Data Analysis

We used descriptive statistics to report quantitative data and summarized the results of open-ended questions in a qualitative narrative. When reporting on outcomes in quantitative and mixed methods studies, we grouped the outcomes into the following categories: staff wellbeing,

retention, recruitment, selection, risk management, competencies, and supporting people with disabilities.

Results

In this section, we report all the key characteristics of the 65 studies included in the final review (e.g., year of publication; setting, type, dosage, etc. of the intervention or training). Table 2 provides a succinct overview of the articles with a specific focus on the type of research study design, number and type of study participants, intervention/training description, population served, and outcome type.

Years of publication. There were 65 articles included in our final review. Twenty studies (30.8%) were published in the 1990s, six (9.2%) were published in the 2000s, and 39 (60%) were published between 2011 and 2020.

Countries where studies took place. Forty-one (63%) studies took place in the United States, 11 (16.9%) in the United Kingdom (England, Scotland, Wales, Northern Ireland), three in Australia (4.6%), two (3.1%) in Canada, and five (7.7%) in other countries (Spain, Sweden, and the Netherlands - 3 studies). Three other studies did not provide sufficient information to determine the country where the study took place.

Type of publication. Studies were coded as peer-reviewed journal articles or dissertations. Fifty-four (83.1%) studies were peer-reviewed journal articles, and 11 (16.9%) were dissertations.

Study participants. A large number of the studies targeted DSP/PSA only (47 - 71.3%). Eleven (16.9%) studies targeted DSP/PCA and other staff (e.g., supervisors, case managers, employment specialists). Four studies (6.2%) targeted employment specialists only (e.g., job coaches, job developers). Only one study (1.5%) targeted supervisors by themselves. The

remainder of the studies (4.9%) targeted other staff or a combination of staff (e.g., nurses, mental health team members).

Populations served. In the majority of studies (38) the staff served adults with intellectual and developmental disabilities (IDD) (58.5%). In 10 studies (15.4%), the staff served people with IDD and another population (e.g., people with mental health needs, physical disabilities). In two studies (3.1%), staff served only adults with mental health needs. Fourteen studies (21.5%) served people with aging needs, including dementia. In the remainder of the studies (15.4%) the staff served either an unspecified population or a people with a specific type of disability (e.g., sensory, physical, learning disability). Please note that the percentages exceed 100%. This is because some articles included multiple populations served in different combinations.

Settings where services were provided. In most studies, services were provided in congregate residential settings (41 – 63%), followed by during community-based activities other than employment (11 – 16.9%), individual residential settings (9 – 13.8%), community-based employment settings (9 – 13.8%), day program (8 – 12.3%), and facility-based employment (5 – 7.7%). In three studies (4.6%), the settings were unclear. Please note that the percentages exceed 100%. This is because some articles included multiple settings in different combinations.

Level of intervention/training implementation. The level at which the intervention or training were implemented were coded as with a segment of staff – 37 (56.9%), system-wide implementation – 7 (10.8%), site-level implementation – 19 (29.2%), individual level – 7 (10.8%), or other (i.e., with DSPs who had limited English proficiency – 1 (1.5%).

Number of participants in intervention/training. Studies were coded based on the number of participants in the intervention/training. Nineteen (29.2%) studies reported 1-10 participants, 24 (36.9%) studies reported 11-50 participants, nine (13.8%) studies reported 51-100

participants, 12 (18.5%) studies reported 101+ participants, and one (1.5%) study reported N/A or not clear.

Intervention/training implementation dosage. There were 20 out of 65 studies (30.8%) that used some other kind of measure for dosage. Dosage was measured in four ways: number of sessions (50 studies – 76.9%), frequency of sessions (21 – 32.3%), length of sessions in weeks (30 – 46.2%), and length of sessions in minutes (37 - 56.9%). There were 14 studies that reported using all four measures of dosage, six of these also used another method in addition to the four we coded. There were ten studies that used three out of the four measures of dosage, three of which reported an additional measure we did not code. There were 15 studies that used two out of the four measures of dosage, four of which reported an additional measure we did not code. There were 18 studies that used one out of the four measures of dosage, six of which reported an additional measure we did not code. There were nine studies that did not use any of the four measures of dosage, four of which reported an additional measure we did not code, and four did not report anything on dosage.

The reported frequency of sessions (21 studies) ranged from daily (1), once per week (14), every two weeks (3), once every 2-3 weeks (1), to once a month (1). One study reported a single training session followed by 3-4 observation sessions/week. For dosage reported in the number of weeks of implementation, there was wide range from one-week implementation to 78 weeks. The average length of implementation in weeks was 19. As for studies reporting dosage in the number of minutes of implementation, the range was from 10 minutes to 728 minutes. The mean length of implementation for studies reporting dosage in minutes was 160 minutes.

Maintenance of interventions/training. Nineteen (29.2%) studies included reports of maintenance practices to sustain the interventions, while 46 (70.8%) studies did not include

maintenance practices.

Types of the interventions. There were 20 out of 65 (30.8%) studies that included the actual name of an intervention/training (Table 1). The remaining studies described the interventions in more general terms (e.g., staff training to choose, prioritize, and implement changes in communication). The scoping review studies summary table (Table 2) includes descriptions of each intervention/training.

[Insert Table 1 here]

Intervention/training delivery method. Forty-nine (74.2%) studies reported the intervention delivery method was in person, three (4.5%) studies reported online, two (3%) reported a mixed / hybrid delivery method, and 11 (16.7%) studies were coded N/A or not reported. One (1.5%) study included an “other” delivery method, which was “phone interview.”

Intervention/training delivery format. Articles were coded based on the size of the group of participants receiving the intervention together. Fifteen (23.1%) studies reported a 1 on 1 format of delivery. Twenty (30.8%) studies reported a small group delivery format (10 people or less). Sixteen (24.6%) studies reported a large group delivery (11 people or more). Twenty two (33.8%) studies were coded as N/A or not reported. Four (6.2%) studies were coded as “other.”

Implementation fidelity. Twenty-eight (43.1%) articles stated implementation fidelity was assessed, 35 (53.8%) articles did not state one way or the other if implementation fidelity was assessed, and two articles (3.1%) stated they did not assess implementation fidelity.

Types of research designs. Studies were coded as quantitative, qualitative, or mixed methods designs. Fifty-seven (87.7%) studies were quantitative, five (7.7%) studies were qualitative, and three (4.6%) were mixed methods studies.

Quantitative studies. The 57 quantitative studies (excluding the three mixed methods studies) included a varied number of outcomes and research designs. There were 19 studies (33.3%) using a single-subject design that did not report significance levels, but rather provided descriptive information. Three (5.3%) studies used a group research design, but provided only descriptive findings. The remaining 35 studies (61.4%) included groups designs and ran an inferential statistical test to determine the significance of an outcome as a result of the reported intervention.

Qualitative studies. Qualitative research approaches across the five qualitative studies varied and included a phenomenological approach, grounded theory, and the RE-AIM framework. The most frequently used method of qualitative analysis reported was a thematic analysis. Multiple studies reported using an iterative process of thematic analysis, explaining that they moved between data collection and analysis throughout the study.

Mixed methods studies. Among the three mixed methods studies, the quantitative analysis methods included were descriptive statistics or visual analysis in single-subject designs. Thematic analysis was the most frequently used qualitative analysis method.

Study findings

Quantitative studies. Most studies in this review included more than one outcome. Those outcomes were often clustered in one of the outcome categories (e.g., there may have been three outcomes listed under staff wellbeing in one study). This has led to coding many studies as having mixed significance results for the outcome category. The tests included parametric and non-parametric t-tests, Chi-square, analysis of variance (ANOVA), analysis of covariance (ANCOVA), and a multivariate analysis of variance (MANOVA).

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Thirty-one (54.4%) of the 57 studies included supporting people with disabilities as an outcome. Of those five studies reported a statistically significant outcome in the right direction only. Six studies with supporting people with disabilities as an outcome reported mixed results due to measuring multiple outcomes within this category. Two studies reported a non-significant outcome. The remainder (44 studies – majority) were single-subject or descriptive studies only with no information on statistical significance.

Twenty-two (38.6%) studies included staff competencies as an outcome. Eleven of those reported a statistically significant outcome results only. Four studies reported mixed results due to multiple outcomes measured under the staff competency outcome category. The remainder of studies (seven) were single-subject or descriptive studies only with no information on statistical significance.

Fifteen (26.3%) studies included staff wellbeing as an outcome. Two studies reported statistically significant results only. Eleven (majority) of those studies reported mixed results as a result of measuring multiple outcomes under the staff wellbeing category. Only two studies did not include statistical tests to report their findings.

Only three (5.3%) studies included staff retention as an outcome. Two of those studies reported statistically significant results only and one study reported mixed results. Only one study (1.8%) included risk management as an outcome (statistically significant). No studies included staff recruitment or selection as an outcome of their intervention. Refer to Table 2 for detailed information about outcome categories and their significance by study.

In total, forty-four (77.2%) studies reported a statistically significant impact of their intervention. That included studies with mixed results due to multiple outcomes in an outcome category and excluded studies with no statistical inferential tests.

Qualitative and mixed methods studies. There were eight studies that used qualitative methods to gather data about the effectiveness of interventions, and three of these were mixed methods studies. Six of the eight reported on research related to staff training (Codling et al., 2014; Frost et al., 1999; Johnson et al., 2017; Savundranayagam et al., 2019; Schaap, et al., 2018; and Walsh, et al., 2019), one investigated the attributes of a successful employment specialist (Tilson and Simonsen, 2012), and another examined the contextual factors necessary to implement Active support (Qian et al., 2017), including the benefits and challenges for DSPs.

Among the six studies that include qualitative data to evaluate a staff training intervention, there were several common themes. Some of these included general satisfaction with the training (Codling et al., 2014; Walsh et al., 2019), learning new and different ways to think about their jobs (Schaap et al., 2018; Walsh et al., 2019; Johnson, et al., 2017), and their intent and ideas on how they were going to use what they learned on the job (Codling et al., 2014; Johnson et al., 2017; and Savundranayagam et al., 2019). Savundranayagam et al. (2019) also found that staff especially liked the “realistic simulations” included in the training, and Johnson et al. (2017) found that staff felt they learned new ways to “share the moment” and enjoy their time working with clients. This was a mixed method study that showed that the amount of time staff spent interacting with the people they supported increased from pre- to post-training as measured using behavioral observations (Johnson et al., 2017). A few other interesting findings included spillover of what they learned into their personal lives (Walsh et al., 2019), and a need for changes in agency policy if ideas from the training were to be implemented (Codling et al., 2014).

[Insert Table 2 here]

Discussion

The state of staffing home and community-based services for people with disabilities and aging needs in the US and internationally is at a point of breaking (ANCOR, 2022). Among the key reasons for this crisis is the lack of adequate training to manage the demands of the job (Hewitt et al., 2019). In this context, it is troubling that in the scoping review we were able to identify only 65 studies published in the last 30 years in English conducted across multiple countries that met our inclusionary criteria of examining the impact of an intervention or training on the outcomes of DSW. On a positive note, the number of studies published more recently has been steadily increasing. Not surprising, most of the studies were conducted in the US, with western and northern Europe and the UK following. It is disturbing that we did not find any studies we could report on that were conducted in Asia, Africa, or in eastern Europe. It is also unsettling that in the current crisis of recruiting and retaining DSW (National Core Indicators, 2022; PHI, 2022), there were only three studies that directly examined staff retention and no studies that examined staff selection as outcomes of an intervention. Further, it is surprising that only eight studies were qualitative or at least included a qualitative component.

In response to the first guiding question of this scoping review, “What types of interventions and trainings have been reported in peer-reviewed literature or in dissertations for the DSW and frontline supervisors since 1990?”, we can conclude that the majority of the interventions were focused on improving staff competencies in the areas of diagnosis, support provision related to basic needs of PWD (e.g., nutrition, Kneringer et al., 1999), which tended to be older studies, end of life care (Codling et al., 2014), competencies related to the engagement of PWD in daily activities or in choice making (Pingo et al., 2010), or in conducting communication and behavior interventions (Barnes et al., 2011). Less than a fourth of the interventions focused on the actual staff needs. These studies can be divided into those that used

an intervention to improve staff management approaches and strategies (Heaney et al., 1991), which tended to be older studies, and those with a goal to improve staff general wellbeing, mostly focused on stress reduction (Barbosa et al., 2016).

In the context of the current shortage of qualified or any DWS in home and community-based service provision of PWD, this review can serve an indicator of the reversed emphasis in this field. While staff competencies are critical in providing quality services to PWS, the fundamental problem at this time is hiring and retaining staff who feel valued and supported on the job (Pettingell et al., 2022).

Ironically, most of the interventions/trainings focused on the staff wellbeing utilized group research designs with a larger numbers of participants, and therefore one could argue that the approaches to intervention in these studies were not person-centered, compared to the numerous single-subject studies with small numbers of participants targeting mostly communication and behavior competencies related to how interact with PWD. One could also argue that at this time, it is as important to conduct person-centered interventions aiming at improving staff wellbeing according to their needs and values, as it is for the staff to provide person-centered support to PWD.

The second guiding question focused on “What are the areas of strength in the studies reporting on the interventions and trainings for the DSW?”. The studies in this scoping review included a number of strengths. Most of the studies were able to measure an impact of an intervention on multiple outcomes. The studies represented a variety of research designs and data analytical techniques and were published across diverse types of journals, including those specializing in outcomes for people with IDD, aging needs, and had a behavioral or nursing focus. The studies included a number of useful recommendations for future research in this field.

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In line with the point made earlier about need for more interventions focused on staff wellbeing, the recommendations included prioritizing staff care, interventions for supervisors and managers, and trainings for staff. Recommendations to support staff care included providing tools for stress management and burnout, implementing mindfulness-based interventions, providing health education programming, and supporting staff well-being at an organizational level. Several studies recommend investing in quality training for staff. They suggested trainings to include repeated practice with feedback and follow-up sessions to improve generalizability. There were recommendations to build organizational capacity before attempting a new intervention. Future research recommendations also included incorporating technology into staff trainings. We noted that in one study, researchers were investigating the impact of people with intellectual disabilities providing support for people with disabilities (Frost, 1999), a direction that should be investigated further with the goal of providing benefit to both the staff with disabilities and those being supported.

In addressing “What are the gaps in the studies reporting on interventions and trainings for DSW?”, it needs to be emphasized that many studies targeted a small number of participants, those using single-subject designs, making it therefore difficult to determine whether results were statistically significant and to generalize the findings. There were very few studies using a randomized-control trial design, which limited the conclusions about the causality of the interventions and to be only able to comment on associations between interventions and outcomes. In addition, there were very few qualitative studies that we were able to include in this review, thus limiting the in-depths analysis and recommendations that could be made using these types of studies. We also noted that there were different types of interventions that were addressed different types of outcomes, but there were not many instances of replication.

Replication can help to validate and refine the components needed in effective interventions and trainings. Many studies used convenience samples and faced high staff turnover, making it challenging to draw valid and generalizable conclusions. Only a handful of studies examined the extent to which the impact of the intervention was maintained over longer periods of time. Very few studies measured the extent to which the intervention was implemented with fidelity. Studies were omitting to address the outcomes of staff retention and selection. Many of the studies were outdated and could be questioned for their relevance at this time.

Conclusion

We consider this scoping review to be a call to researchers to conduct high-quality studies, using a variety of methodologies that focus on the wellbeing of and the feeling of being valued by DSW. While studies are also needed to generate new knowledge on staff competencies and how to work best with people they support, at the current time, we first need to address the dire situation of the majority service providers lacking qualified staff, resulting in diminished service quality for PWD. By conducting more quality studies on this topic, the research community can begin offering more and better approaches and strategies service providers can use to select and retain their DSW. Further, there is a need to encourage research in the rest of the world to study DSW and their outcomes in the context of their cultures and communities.

Figure 1.

PRISMA flow diagram detailing the search and screening strategy to identify the set of articles (n = 65)

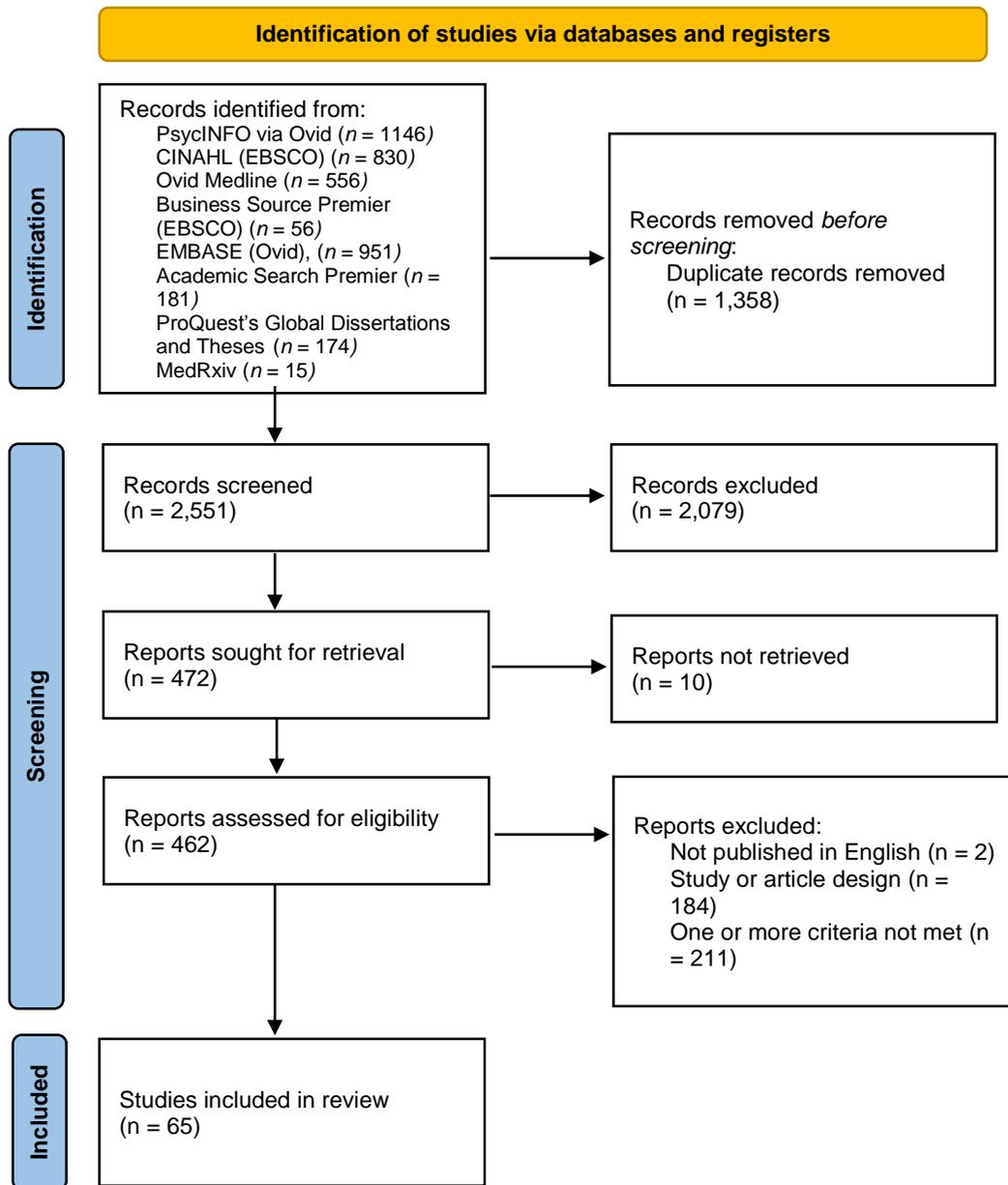


Table 1.

Specific Names Used to Identify Intervention/Training in the Studies:

Intervention/training name	
Person-centered Care (PCC)-based Psychoeducational (PE) intervention	Behavior Analysis and Functional Analytic Psychotherapy (FAP)
Acceptance and Commitment Therapy (ACT) Stress Reduction Workshop	The CARES® Behavior Caregiver Support Program
Community Support Services (CSS) Training HealthMatters Program	Active support Function Focused Care
Promotion of Acceptance in Carers and Teachers (PACT)	Mindfulness: An Eight-Week Plan for Finding Peace in a Frantic World
Performance enhanced intervention and performance enhanced intervention plus Acceptance and Commitment Therapy, verbal performance feedback	Psychiatric Disorders in Individuals with Developmental Disabilities: A Curriculum for Direct Service Personnel
Be EPIC	Dementia Care Mapping (DCM)
Foundation Training, Residential Training	PBS (Positive Behavioral Support)
Lifestyle Engagement Activity Program (LEAP)	Video Modeling, Video Modeling plus assessment

Table 2.
Summary of Quantitative and Mixed Method Articles that Utilized a Workforce Training Intervention.

Citation	Design	N	Participants	Intervention/Training Description	Population Served	Outcome Type
Alperson et al., 2017	Q	34	DSP/PCA	<ul style="list-style-type: none"> Alleviate caregiver burnout Mind-body training of self-compassion 	Alzheimer's	Staff well-being */- Staff competencies *
Arco, 1991	Q	8	DSP/PCA	<ul style="list-style-type: none"> Outcome performance feedback on maintenance on client and direct care staff behavior 	IDD	Staff competencies Supporting PWD */-
Baker, 1998	Q	?	DSP/PCA, Employment Specialist, Managers	<ul style="list-style-type: none"> Behavior support training 	IDD	Staff competencies *
Barbosa et al., 2017	Q	56	DSP/PCA	<ul style="list-style-type: none"> Intervention including information on dementia, person-centered care plus stress management strategies on quality of person-centered care with people supported 	Dementia	Supporting PWD */-
Barbosa et al., 2016	Q	53	DSP/PCA	<ul style="list-style-type: none"> Psychoeducational intervention with tools to improve workers' stress, burnout, job satisfaction, person-centered communication 	Dementia	Staff well-being */- Staff competencies */-
Barnes et al., 2011	Q	3	DSP/PCA	<ul style="list-style-type: none"> Verbal instruction and instructional video on acquisition of skills for implementing phases 1-3 of picture exchange communication system (PECS) 	IDD	Supporting PWD
Berryman et al., 1994	Q	83	DSP/PCA	<ul style="list-style-type: none"> Evaluate how staff conceptualize problems of people supported and use of non-aversive behavioral approach 	IDD, Mental Health	Staff competencies
Beuscher et al., 2016	Q	7	DSP/PCA	<ul style="list-style-type: none"> Recognize residents' depression symptoms 	Aging	Staff competencies *
Bogenschutz, 2015	Q	502 (52 sites)	DSP/PCA, FLS, Managers	<ul style="list-style-type: none"> Competency-based online training intervention on site-level turnover 	IDD	Retention */-
Brock, 2016	Q	6	Employment Specialist	<ul style="list-style-type: none"> Staff fidelity to deliver task analysis, simultaneous prompting, least-to-most prompting 	IDD	Staff competencies
Castro et al., 2016	Q	3	DSP/PCA	<ul style="list-style-type: none"> Values clarification and committed action on the engagement of staff with their clients 	IDD	Staff well-being Supporting PWD
Chadsey et al., 1997	Q	5	Employment Specialist	<ul style="list-style-type: none"> Two intervention strategies (contextual and coworker) on social interaction and integration of workers with disabilities 	"Severe Disabilities"	Supporting PWD
Chancey et al., 2017	Q	3	DSP/PCA	<ul style="list-style-type: none"> Acceptance and Commitment Therapy (ACT), specifically mindfulness techniques, on improving staff interactions with clients 	IDD	Supporting PWD
Chatterton, 1999	Q	13	DSP/PCA, Nurses	<ul style="list-style-type: none"> Direct speech-language therapy for person with disability Staff training to choose, prioritize, and implement changes in communication 	IDD	Supporting PWD */-
Codling, 2014	MM	43	DSP/PCA	<ul style="list-style-type: none"> End-of-life care to identify end of life, identify services and personal wishes, make advanced care plans 	IDD	Staff competencies

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Coogle et al., 2007	Q	212	DSP/PCA, Nursing Assistants	<ul style="list-style-type: none"> Assess carer's beliefs related to death and dying, identify physical, psychological, spiritual, social issues while caring for dying person Person-centered care training for long-term care workers, specifically for workers providing dementia support 	Aging	Staff well-being */-
Courtemanche et al., 2014	Q	3	DSP/PCA	<ul style="list-style-type: none"> Staff training package to implement intervention plans with high integrity 	IDD	Supporting PWD
Darrow, 2011	Q	132	DSP/PCA	<ul style="list-style-type: none"> Increase understanding of Behavior Analysis & Functional Analytic Psychotherapy 	IDD, Mental Health	Staff competencies */-
Embregts et al., 2019	Q	29	DSP/PCA	<ul style="list-style-type: none"> Training program to improve emotional intelligence and awareness of their behavior interaction patterns with person supported 	IDD	Supporting PWD */-
Flatt-Fultz et al., 2012	Q	43	DSP/PCA	<ul style="list-style-type: none"> Training video on empowerment of people supported 	IDD	Supporting PWD *
Frost, 1999	MM	?	DSP/PCA with disabilities	<ul style="list-style-type: none"> People with cognitive, mental health, and sensory disabilities hired and trained in LEAD (Linking Employment, Abilities, and Potential) to provide paid personal support services for person with spinal cord injury 	Spinal Cord Injury	Supporting PWD
Gaugler et al., 2016	Q	40	DSP/PCA	<ul style="list-style-type: none"> Online CARES Dementia-Related Behavior Training Program; skills to improve care for challenging or inappropriate behavior 	Dementia	Supporting PWD *
Guerrero et al., 2020	Q	66	DSP/PCA	<ul style="list-style-type: none"> Competency-based training for In-Home Supportive Services (IHSS) caregivers 	Aging, Alzheimer's, Dementia	Staff well-being */- Staff competencies *
Haberlin et al., 2012	Q	26	DSP/PCA	<ul style="list-style-type: none"> Two approaches to Applied Behavior Analysis staff training: by outside consultant versus consultant training supervisors to train DSPs 	IDD	Staff competencies * Supporting PWD *
Hammond, 1997	Q	40	DSP/PCA	<ul style="list-style-type: none"> Stress reduction workshop 	IDD	Staff well-being */-
Heaney, 1991	Q	1,845	DSP/PCA, FLS	<ul style="list-style-type: none"> Caregiver Support Program to improve quality of work relationships among managers and direct care staff 	IDD	Staff well-being */-
Horneij et al., 2001	Q	282	Nursing Assistants	<ul style="list-style-type: none"> Individualized physical training program Work-based stress management 	Aging; Disabilities	Staff well-being */-
Ingham, 2011	Q	7	DSP/PCA	<ul style="list-style-type: none"> Psychosocial cognitive and behavioral approach for developing support strategies 	IDD	Supporting PWD
Jenkins et al., 1998	Q	20	DSP/PCA	<ul style="list-style-type: none"> Training on typical eating and drinking, positioning, nutrition, environmental considerations, and the person's individualized needs. Role play, experimenting with food and equipment 	IDD, Physical Disability	Staff competencies */- Supporting PWD -

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Jerome et al., 2014	Q	3	DSP/PCA	<ul style="list-style-type: none"> In-service training alone and in-service training with feedback on data collection accuracy for direct-care staff 	IDD	Supporting PWD
Johnson et al., 2017	MM	5	DSP/PCA	<ul style="list-style-type: none"> Educational intervention based on the social relationships model to describe quality of relationship between staff and person supported. 	IDD	Supporting PWD
Kneringer et al., 1999	Q	13	DSP/PCA	<ul style="list-style-type: none"> Staff training and management package on nutritional practices 	IDD	Staff competencies Supporting PWD
Lloyd, 1990	Q	3	DSP/PCA	<ul style="list-style-type: none"> Staff training generalization strategies: skill in vivo versus a general simulated session 	IDD	Supporting PWD
Lopez, 2005	Q	5	DSP/PCA	<ul style="list-style-type: none"> Workplace English language learning program for staff with limited proficiency 	IDD	Supporting PWD
Low et al., 2015	Q	162	DSP/PCA, Case Manager	<ul style="list-style-type: none"> Lifestyle Engagement Activity Program (LEAP) 	Aging	Staff well-being * Supporting PWD *
Lynch, 2018	Q	3	DSP/PCA	<ul style="list-style-type: none"> Training that incorporated video modeling, then video modeling and assessment, and then Behavior Skills Training for behavior management strategies 	IDD	Supporting PWD
Marks et al., 2019	Q	48	DSP/PCA	<ul style="list-style-type: none"> Training to deliver HealthMatters Program to people supported; also assessed the impact on staff health 	IDD	Staff well-being */- Supporting PWD
Marra, 1999	Q	74	DSP/PCA	<ul style="list-style-type: none"> Interactive versus didactic sexuality training on attitudes and behaviors of staff 	IDD	Staff competencies */-
Marwaha, 2014	Q	96	Employment Specialist	<ul style="list-style-type: none"> Training existing staff member in employment intervention versus provision of a dedicated employment specialist 	Mental Health	Supporting PWD -
McConachie et al., 2014	Q	120	DSP/PCA	<ul style="list-style-type: none"> Acceptance and mindfulness-based stress management 	IDD	Staff well-being */-
McKnight, 1997	Q	11	DSP/PCA	<ul style="list-style-type: none"> Teaching to provide increased choice opportunities for people supported 	IDD	Supporting PWD */-
Mester, 1999	Q	40	DSP/PCA	<ul style="list-style-type: none"> Curriculum: Psychiatric Disorders in Individuals with Developmental Disabilities: A Curriculum for Direct Service Personnel 	IDD, Mental Health	Staff competencies *
Miltenberger et al., 1992	Q	97	DSP/PCA, FLS	<ul style="list-style-type: none"> Acceptability of staff management procedure 	IDD	Risk management *
Noone et al., 2009	Q	20	DSP/PCA	<ul style="list-style-type: none"> Work-stress intervention based on Bond and Bunce's (2000) acceptance intervention Promotion of Acceptance in Carers and Teachers (PACT) 	IDD	Staff well-being */-
O'Connor, 2020	Q	3	DSP/PCA	<ul style="list-style-type: none"> Mindfulness training and practice for staff: Mindfulness: An Eight-Week Plan for Finding Peace in a Frantic World 	IDD, Mental Health	Supporting PWD
Pingo et al., 2020	Q	5	DSP/PCA	<ul style="list-style-type: none"> Verbal and written performance feedback with addition of Acceptance and Commitment Therapy (ACT)-based training 	IDD	Staff competencies

Citation	Design	N	Participants	Intervention/Training Description	Population Served	Outcome Type
Pingo, 2010	Q	41 (Study 1) 6 (Study 2)	DSP/PCA	<ul style="list-style-type: none"> One-to-one coaching and group instruction on implementing Active Support 	IDD	Staff competencies *
Reid et al., 2005	Q	3 (Study 1) 2 (Study 2)	FLS	<ul style="list-style-type: none"> Outcome management steps to improve prompting procedures of job coaches Impact of involving people in meal-preparation using outcome management 	IDD	Supporting PWD
Resnick et al., 2011	Q	96	DSP/PCA	<ul style="list-style-type: none"> Function-focused care as philosophy of care 	Aging	Supporting PWD */-
Rhodes et al., 2016	Q	38	DSP/PCA	<ul style="list-style-type: none"> Active Support 	IDD	Retention * Staff competencies
Rose et al., 1998	Q	33	DSP/PCA	<ul style="list-style-type: none"> Stress Management Program 	Learning Disabilities/IDD	Staff well-being */-
Saavedra et al., 2020	Q	29	DSP/PCA	<ul style="list-style-type: none"> Health problems faced by home health care assistants 	IDD, Aging, Physical Disability	Staff well-being */-
Sigafoos et al., 1993	Q	5	DSP/PCA	<ul style="list-style-type: none"> In-service intervention for teaching staff to incorporate opportunities for choice-making and turn-taking 	IDD, Physical Disability	Supporting PWD
Smith, 1995	Q	4	DSP/PCA	<ul style="list-style-type: none"> Use of orientation training, task-analyzed checklists of job skills, feedback from agency trainer, feedback from their supervisor to improve staff performance 	IDD	Supporting PWD
Teresi, 2020	Q	NA	DSP/PCA	<ul style="list-style-type: none"> Intervention to enhance knowledge of Resident-to-resident elder mistreatment and increase reporting and resident safety by reducing falls and associated injuries. 	Aging	<i>This is a study protocol; did not report results</i>
Tredinnick et al., 2013	Q	38	DSP/PCA	<ul style="list-style-type: none"> Dysphagia training course 	IDD	Supporting PWD *
Van Gelder et al., 1996	Q	267	Employment Specialist, Managers	<ul style="list-style-type: none"> Competency based training on supported employment and managing employment specialists using classroom, field work, follow-up sessions. 	IDD	Retention * Staff competencies *
Villani et al., 1999	Q	373	DSP/PCA, Employment Specialist, FLS, Organizational,	<ul style="list-style-type: none"> Foundation Training in Oklahoma for staff related to shifts in service delivery methods, policies, and a vision for supporting people with disabilities 	IDD	Staff competencies *

Citation	Design	N	Participants	Intervention/Training Description	Population Served	Outcome Type
Zazzarino et al., 2019	Q	420	DSP/PCA, FLS	<ul style="list-style-type: none"> State-wide Community Support Services (CSS) Training with work-based learning to improve knowledge about psychiatric rehabilitation on principles and skills 	Mental Health	Staff competencies *
Zijlmans et al., 2015	Q	214	DSP/PCA	<ul style="list-style-type: none"> Staff training in emotional intelligence and interactions between staff and clients 	IDD	Staff well-being * Staff competencies *

Note. DSP = direct support professional, PCA = personal care assistant, PWD = people with disabilities, FLS = frontline supervisor; Employment Specialist includes job coaches, job developers, other; United Kingdom includes England, Scotland, Wales, Northern Ireland; For study design, Q denotes a quantitative study with a group or a single subject design, MM denotes a study that used a mixed method, including a quantitative and qualitative component. ? = unknown, NA = not applicable. For outcome categories, (*) indicates only significant results in the expected direction over control or baseline, (*/-) indicates some significant results in the expected direction in the domain and some not significant within an outcome category. If an outcome category does not have any sign, no inferential statistical test was calculated.



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