TRAVEL BEHAVIOUR OF PERSONS WITH DISABILITIES – KEY COMPONENTS, AVAILABILITY AND ADEQUACY OF TRANSPORTATION, AND INTERVENTIONS FOR THE OVERCOMING OF BARRIERS[*]

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This paper emphasizes the importance of barrier-free travel for individuals with disabilities to increase their inclusion in political, economic, and social activities and presents key components of their travel behaviour, transportation availability/adequacy and interventions for the overcoming of barriers by synthesising the latest findings. The transportation needs of people with disabilities are often overlooked in mainstream travel demand modelling and planning, resulting in unique travel barriers for individuals. These barriers include issues with public transit systems, planning practices, wayfinding, and accessing travel information. Solutions such as geospatial details, augmentative and alternative communication devices, and travel-training programs are needed. Governments should implement regulations on accessible public transport vehicles and prioritize upgrading pedestrian infrastructure while providing training to drivers and transportation personnel to better understand disabilities. Integrating the perspectives of end-users and state/local providers in transportation policy development and program implementation is essential to address the transportation challenges faced by individuals with disabilities.

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INTRODUCTION

Transportation plays a vital role in determining the level of independence and self-determination of persons with disabilities, as well as their ability to participate in various life activities (Jansuwan et al., 2013; Wasfi et al., 2017). The involvement of individuals with disabilities in communities is significantly affected by their transportation access and needs (Bascom & Christensen, 2017; Jansuwan et al., 2013; Wasfi et al., 2017). Moreover, people with disabilities often face significant barriers when accessing public transport, which can limit their opportunities for employment, education, social activities, and healthcare (Bezyak et al., 2023). This lack of access to transportation can lead to isolation, poverty, and limited opportunities for community engagement. Addressing these barriers and incorporating the needs of individuals with disabilities into transport planning is essential to ensure that they have equal access to opportunities and services (Duri & Luke, 2022).

Overall, evidence to date suggests that individuals who lack adequate transportation often encounter social exclusion. They also experience significant limitations that prevent them from participating fully in their community (Bascom & Christensen, 2017; Jansuwan et al., 2013; Mackett & Thoreau, 2015). In one study, it was shown that having certain characteristics, such as being young, having a small household and a stable job, holding a driver's license, living in an urban area, and being open to travelling long distances, can increase an individual's number of opportunities (Casas, 2007). According to Mackett and Thoreau (2015), socio-economically disadvantaged individuals, those who have mobility difficulties, are older, female, or part of minority groups are more likely to experience transport-related social exclusion. As further noted, transport-related barriers originate from factors such as the cost and availability of public transport, as well as inadequate facilities and poor travel information, with barriers that could be either physical or psychological in nature (Mackett & Thoreau, 2015).

There is a lack of research on the travel experiences of people with intellectual, cognitive, and learning disabilities, who often face multiple barriers to independent travel due to their lack of knowledge, skills, education level, and self-efficacy, and struggle to judge “unsafe areas” (Bodde & Seo, 2009; Temple, 2007). A better understanding of their travel demand and barriers could inform decisions on travel environment and service provision (Shen et al., 2023). Given the long-term outcomes of social exclusion of individuals with disabilities, including those who lack adequate transportation, this paper aims to identify and present key components of the travel behaviour of persons with disabilities, as well as the availability and adequacy of transportation and interventions for the overcoming of barriers. We have conducted

an extensive literature review to synthesise the latest findings. The results of this study could guide policymakers in enhancing public transportation and transportation services to meet the needs of individuals with disabilities.

1. METHODS

To explore the travel behaviour of people with disabilities, an extensive literature search was conducted using Google Scholar – Advanced Scholar Search. The search included scholarly manuscripts published in English since January 1, 2000. The following keywords were used in relevant combinations: "travel", "transportation", "transport" combined with "barriers", "accessibility", "accessible", "adequacy" and "people with disabilities", "individuals with disabilities", and "persons with disabilities". The studies that focused on key characteristics and factors related to accessible or adequate transportation, as well as those presenting interventions aimed at improving the travel or transportation of individuals with disabilities, were considered eligible. The search resulted in 2104 citations, of which 64 studies were included after excluding duplicates and screening based on the criteria mentioned above. The search was completed in March 2022.

2. KEY COMPONENTS AND CHARACTERISTICS OF THE TRAVEL BEHAVIOUR OF PERSONS WITH DISABILITIES

Previous literature concerning the travel behaviour of people with disabilities has shown its uniqueness according to each individual's identity and abilities (Levine & Karner, 2023). The travel demand depends on the demographic and socioeconomic characteristics of people with disabilities at the individual and household levels (Shen et al., 2023). In addition, the travel behaviour of people with disabilities is influenced by the severity, length of disability, and specific type of disability (Henly & Brucker, 2019; Shen et al., 2023). When it comes to tourism participation, key components of the travel behaviour of persons with disabilities include the severity, congenital nature or age of onset of the disability, the ability to accept and adjust to the disability, and whether the individual has single or multiple disabilities (McKercher & Darcy, 2018).

Age and gender also play a role in travel behaviour, with older individuals and women with disabilities less inclined to travel, whereas being an immigrant, married, highly educated, or employed increases the likelihood of travel by people with disabilities (Shen et al., 2023).

Socioeconomic factors are among the first listed factors that affect the travel behaviour of persons with disabilities. Household size and economic status also affect travel patterns, with larger families and higher-income households leading to more travel by personal vehicle and participation in leisure activities, while lower-income households rely more on public transit and have reduced participation in recreational

activities (Shen et al., 2023). For example, poverty is linked to the available mode choice and lower car ownership (Hine & Grieco, 2003; Levine & Karner, 2023) and vice versa, the experience of transport disadvantage can result in increased unemployment and limited opportunities for individuals with disabilities, leading back to poverty (Duri & Luke, 2022; Lucas, 2012). Low-income individuals with disabilities and those without private cars have a more negative perception of the built environment, according to Hwang (2022). Furthermore, people with disabilities typically pay a travel time price 50 per cent higher than those without disabilities for all out-of-home activities and 11 per cent higher for work trips (Ralph et al., 2022).

Social barriers and negative social experiences are well described in the literature. This aspect of the travel experience refers to the negative attitudes and perceptions towards disability, which can reduce the mobility, independence, and confidence of individuals with disabilities. Moreover, these limitations and exclusions that individuals encounter while interacting with transportation systems and people in public spaces strengthen the construct of disability (Bezyak et al., 2017; Park et al., 2023; Pyer & Tucker, 2017). As previously noted, having social support is crucial as it facilitates mobility and engagement in activities (Smith et al., 2021).

In one study, young people's access to and experience the city was hindered not only by transportation systems, but also by social norms and values that favour non-disabled people (Smith et al., 2021). Later, when transportation perspectives of young adults with intellectual and developmental disabilities, parents, and service providers were explored using semi-structured interviews, the following three major themes were identified: family factors, community structure, and systems challenges (Ann Bross et al., 2023). Regarding family factors, young adults with disabilities relied on their parents as their primary mode of transportation, and none of them drove themselves. The socioeconomic status of the family played a role in their ability to afford travel-related expenses. Parents reported that attending to their adult children with disabilities was challenging and time-consuming challenges (Ann Bross et al., 2023).

Different types of disabilities require different levels of support during travel, and the severity and duration of the disability can also affect travel capabilities (Schmöcker et al., 2008; Shen et al., 2023; Smith et al., 2021). Travel barriers become more prevalent as the severity of disability increases, with some individuals requiring simple aids like a cane while others require a wheelchair. Newly disabled individuals may be less confident in using assistive devices, leading to travel avoidance, while those with long-term disabilities are more likely to develop effective transport strategies (Henly & Brucker, 2019).

Physical accessibility, lack of awareness, limited social networks, and financial aspects are the main barriers for people with physical disabilities, while safety issues, lack of respect, and inaccessible information are significant barriers for people with visual impairments (Neven & Ectors, 2023). Using qualitative focus groups and semi-

structured in-depth interviews, this study also found that social barriers and communication with public transport staff were significant barriers for people with an autism spectrum disorder. On the other hand, for people with intellectual disabilities, safety issues and lack of accessible information were identified as significant barriers (Neven & Ectors, 2023).

Research studies have shown that travel challenges for people with mobility impairments are affected by the mobility device used, as well as common barriers such as surface quality, curb ramps, path width, and hazards (Prescott et al., 2020). People with mobility impairments may seek routes that avoid crosswalks, leading to longer and more complex routes that expose them to more risks. The focus on accessibility in mobility design neglects its effects on wayfinding and navigation, which may result in longer trips, reduced trip enjoyment, and limited community participation (Prescott et al., 2020).

People with visual impairments may struggle with stairs and finding entrances, while those with mobility disabilities may have difficulty navigating steep slopes and wide streets (Wong, 2018). One scoping review found diversity among Individuals with visual impairments in terms of navigational strategies and behaviours (Prescott et al., 2020). The findings of this study indicate that people with visual impairments use various strategies to learn new routes but prefer familiar environments when possible. They also may use a cane or a guide dog, depending on the environment. Their travel strategies include pre-trip planning, relying on directions while travelling and using various sensory cues during travel, such as auditory, haptic, olfactory, and echolocation. Individuals with visual impairments are able to incorporate distances into their cognitive maps when travelling (Prescott et al., 2020).

The key finding from the one study on deafblind navigation was that those individuals had a more difficult time than individuals with visual impairments due to their inability to utilise auditory feedback for decision-making or route learning (Hersh, 2016). This research aimed to understand the travel behaviour of 28 deafblind individuals in six countries and identified the need for improvements in communication, access to information, street furniture, and public transport (Hersh, 2016). At the same time, individuals with hearing impairments are mainly prepared for different street-crossing scenarios, but the environmental design may have not considered variations in the degree and type of hearing impairments or the fact that auditory feedback is especially important when visual feedback is limited (Prescott et al., 2020).

When the studies focused on the travelling behaviour of people with cognitive impairments were reviewed, various challenges were confirmed. These challenges included orientation and heading difficulties, reliance on landmarks, and interacting with the social and physical environment. Loud, busy, and complex environments made it difficult for people with cognitive impairments, such as acquired brain injury, dementia, and developmental disabilities, to navigate safely, and the consequences of

this increased as people aged and their navigation abilities declined. The studies emphasized the need for landmarks that were clear, easily recognizable, memorable, strategically located, simple, and easily visible, as well as familiar, legible, accessible, comfortable, and safe environments (Prescott et al., 2020). Generally speaking, people with autism or intellectual disabilities are less likely to have a driver's license and encounter difficulties accessing relevant transportation information during travel (Haveman et al., 2013; Zalewska et al., 2016).

A recent systematic review of 115 studies of the daily travel patterns of individuals with mobility, cognitive, and sensory disabilities found that they take up to 30% fewer trips than those without disabilities (Park et al., 2023). This study revealed that people with disabilities have different travel patterns from the general population, with increased use of public transit, taxis or other dial-a-ride services, and riding with others, as well as decreased walking and driving. Several studies found that persons with disabilities need assistance for shopping and work trips (Wasfi et al., 2017), which was especially evident when the COVID-19 pandemic emerged (Dadashzadeh et al., 2022).

Overall, people with disabilities face more transportation barriers due to physical and cognitive limitations, which limit their access to various transportation options. They also often have lower levels of vehicle ownership and vehicle access, making individual mobility a challenge and travel by walking, public transit, and special transport services instead of driving (Shen et al., 2023). One research showed that over a third of people aged 18 to 64 with self-reported travel-limiting disabilities in the U.S. chose not to travel or leave their homes (Brumbaugh, 2019). In addition, travelling for people with disabilities poses extra barriers leading to decreased trip frequency, and shorter distances travelled, especially for older individuals with disabilities. Moreover, they spend a slightly longer time travelling due to preparations, reaching access points, and waiting for upcoming trips than the general population (Shen et al., 2023).

3. AVAILABILITY AND ADEQUACY OF TRANSPORTATION AND THE NATURE OF TRAVEL BARRIERS FOR INDIVIDUALS WITH DISABILITIES AND THEIR FAMILIES

Although most often associated with physical disabilities, travel inaccessibility is evident in a variety of ways, from the structure and design of public transit systems to planning practices that affect wayfinding, navigation and tourism participation, hinder access to travel information and do not address the day-to-day realities of individuals with disabilities (Levine & Karner, 2023; McKercher & Darcy, 2018; Prescott et al., 2020; Shen et al., 2023). The community structure experienced by young adults with intellectual and developmental disabilities varied based on the communities in which they lived. For example, urban areas pose specific challenges, such as limited hours of operation for bus systems or extended waiting times for paratransit services and rural

areas have limited or no public transportation options and a lack of community resources (Ann Bross et al., 2023).

Among other things, travelling implies safely and effectively planning, performing, and learning routes (Prescott et al., 2020). To effectively travel and reach a destination, individuals must manage several different aspects and processes that are influenced by both temporal factors related to the environment and long-term physical and cognitive experiences. Further, navigation and wayfinding involve identifying a route to reach a destination. As multisensory, goal-directed experiences, they are influenced by the individual's interaction with the physical and social environment (Prescott et al., 2020). On the other hand, in families with children with medical complexity, five main transportation challenges were identified: difficulties with entering and exiting the vehicle, concerns regarding safety and comfort, financial challenges, negative effects on the family, and evolving and unpredictable transportation needs (Batson et al., 2022).

McKercher and Darcy (2018) proposed a four-tier hierarchy to understand the nature and effects of barriers, constraints, and obstacles faced by people with disabilities when travelling. These include barriers that are common to all people with disabilities, those that are unique to each disability category, and individual-specific impairment effects. Their structured approach departed from the traditional “one size fits all” model towards a more comprehensive model. In this framework, the barriers are both hierarchical and interactive since people with disabilities are a diverse group and encounter different types of barriers. Generally, the resolution of lower-tier barriers is a prerequisite for addressing upper-tier barriers. The first and basic level consists of barriers faced by all travellers, which are typically categorized as intrapersonal (psychological factors such as religion, self-skill, interest), interpersonal (travel partners, communication), and structural (time, cost, family commitments). The second level is dedicated to five categories of issues faced by all people with disabilities: ignorance, attitude, the trustworthiness of information, issues related to the tourism industry, and the person. The third level acknowledges that people with disabilities may face different obstacles depending on their specific disabling condition. The last, highest level recognizes that individual impairment effects can affect a person’s ability to travel (McKercher & Darcy, 2018).

Main concerns expressed by persons with disabilities using public transportation are those related to the issues of safety, being victimized, and fears of getting lost and of transfers (Stock et al., 2011; Wasfi et al., 2017). Individuals with visual impairments prioritize safely and effectively crossing streets. Therefore, inconsistent or poor design of sidewalks and ramps contributes to risky behaviours, and the effectiveness of beacons for guiding people with visual impairments depends on their placement and volume concerning ambient noise (Prescott et al., 2020). The importance of presenting information in a way that is useful for navigation and avoiding environments that are disorienting or distracting is highlighted in the literature, particularly for individuals

with visual impairments (Prescott et al., 2020). Moreover, individuals with disabilities often face discrimination when using travel agents due to their lack of knowledge about the specific needs of this population (Schmöcker et al., 2008). More importantly, individuals with disabilities tend to make a higher proportion of trips for healthcare purposes, and mobility barriers reduce the frequency of participating in activities outside the home, except for medical purposes, as reported in the recent literature review conducted by Shen et al. (2023).

In regions with the more pronounced severity of the barriers and a lack of accessible transport infrastructure, such as Africa, the main barriers experienced by people with mobility disabilities are related to structural and psychosocial factors (Duri & Luke, 2022). Structural barriers are more acute for people with disabilities compared to other groups, and the design of transport infrastructure in Africa often does not comply with universal access principles. For people with visual disabilities, navigating unfamiliar places and the attitudes of bus drivers are identified as significant barriers (Duri & Luke, 2022). When barriers that individuals with disabilities face when using public transport in Dhaka, Bangladesh were explored, negative attitudes from drivers and passengers, unfriendly built environments, including misplacement of priority seats, high travel costs, and inaccessible infrastructure prevailed (Hossen Sajib, 2022).

An individual's social support network is closely related to their transportation choices. Individuals with a stronger or more diverse family social network are more likely to receive adequate help meeting their transportation needs (Jansuwan et al., 2013). The social model of disability suggests that the travel behaviour of people with disabilities is influenced not only by physical conditions and tangible attributes but also by the social environment, including social cognition, social service, and social-cultural atmosphere (Shen et al., 2023). Social cognition refers to the societal evaluation of persons with disabilities, while societal ignorance can result in discrimination or neglect (McKercher & Darcy, 2018; Shen et al., 2023). In other words, society's evaluation of the population of people with disabilities as a whole can lead to overprotection or neglect, which can result in discrimination against persons with disabilities when travelling. Inclusive and friendly social and cultural atmospheres can encourage people with disabilities to participate in travel activities, improve their travel experience, and promote their health. Discriminatory social environments present clear barriers and have negative effects on travel for people with disabilities (Cochran, 2020; Crudden et al., 2016; Lindsay, 2020; Sundar et al., 2016).

Previous research also found that individuals with disabilities tend to rely more on public transportation and less on private transportation. Although almost half of them frequently travel to work, they make significantly fewer non-work trips than individuals without disabilities do (Jansuwan et al., 2013). Individuals with disabilities often face difficulty in accessing flexible transportation options like private vehicles, which leaves them at a disadvantage when it comes to the availability and flexibility of public transportation options (Jansuwan et al., 2013). For individuals with disabilities, public

transportation can often be inflexible and difficult to access due to factors like lack of wheelchair accessibility, long wait times, and limited routes. As a result, individuals with disabilities may face barriers in terms of accessing education, employment, healthcare, and other opportunities that require travel. This highlights the need for more accessible and flexible transportation options for individuals with disabilities to ensure their full participation in society.

Based on self-reported data, Bascom and Christensen (2017) found that persons with disabilities use public and private vehicles more frequently than previously assumed. Furthermore, those individuals with more severe disabilities are more likely to experience exclusion related to transportation, with nearly half of them cancelling appointments due to transportation issues. As many participants expressed, limited transportation access negatively impacted their social lives. This study investigated the relationship between transportation access and the social and community participation of persons with disabilities. A total of 420 respondents with physical, vision, hearing, intellectual, psychological, or emotional impairments were included in the sample, with 57% being female. The participants had low employment rates, considering the number of those who possessed college degrees, which was explained by the limited transportation access. The study found that transportation mode was not significantly associated with socializing with friends. However, socializing with family was associated with ride-sharing, indicating that family members helped provide transportation for individuals with disabilities to maintain their involvement with their families. The study also suggested that individuals with more severe disabilities might depend on public transportation and their social networks to more than others do because of the nature of their disabilities (Bascom & Christensen, 2017).

4. ADDRESSING THE NEEDS OF PERSONS WITH DISABILITIES IN TRANSPORTATION AND INTERVENTION PLANNING

An inadequate transportation system does not consider the needs of people with disabilities, which results in their everyday experiences being overlooked (Levine & Karner, 2023). Consequently improving the well-being of all children and young people with disabilities requires prioritizing the elimination of ableist assumptions about the abilities and preferences of these individuals, as well as ensuring that the transportation system is equipped with practical support (Smith et al., 2021). Although other disabilities, such as cognitive disabilities, vision and hearing impairments, affect travel behaviour, there is a lack of consideration for the diverse abilities and preferences of people with disabilities and a narrow focus on mobility issues, primarily on individuals who require mobility aids (wheelchairs, walkers, and canes) (Levine & Karner, 2023; Prescott et al., 2020). Social accessibility factors are often neglected, as well (Prescott et al., 2020). By engaging with the disability community, transportation planning, policy, and practice could be improved to meet the needs and experiences of this diverse population group (Levine & Karner, 2023).

Transportation challenges have a multifaceted impact on the safety of families with children with medical complexity, access to community and medical care, finances, and overall well-being. Consequently, healthcare providers are advised to address these transportation challenges and push for policy changes to improve the situation (Batson et al., 2022). Transport services should be accessible and inclusive to enable individuals with disabilities to participate in the community and access essential services. By incorporating the barriers that individuals with disabilities and their families face in accessing public transport in transport planning, transport services could better meet their needs (Duri & Luke, 2022). Overall, good social services that support the autonomy of people with disabilities can improve access to services and enhance their service experience (Shen et al., 2023).

Three factors are relevant for facilitating or suppressing mobility in transportation: barrier-free built environment, safe travel support, and walkable built environment, as suggested by the finding of an online survey conducted with people with physical disabilities and visual impairments living in Austin and Houston, Texas (Hwang, 2022). As stated previously, transportation design and policies should maximise safety where pedestrians and vehicles cross paths, including clear sightlines, bright lighting, and protected paths through parking lots (Prescott et al., 2020). When the travel behaviour and needs of people with developmental disabilities were explored, it was found that providing residential facilities for individuals with developmental disabilities in areas with good public transportation might improve their independence in commuting to work. However, the study's findings cannot be generalized to the entire population, as the sampling was biased towards areas where developmental disability organizations or community services are provided. Overall, this study included 99 individuals with autism spectrum disorder, cerebral palsy, intellectual disability or traumatic brain injury that led to developmental disabilities (Wasfi et al., 2017).

Hossen Sajib (2022) proposed specific solutions to address issues such as increasing mobility, social engagement, and changing cultural perceptions, for example, geospatial details and augmentative and alternative communication devices for people with reduced mobility. Other authors suggested introducing travel-training programs focused on the difficulties in understanding and interpreting schedules and transferring between services (Wasfi et al., 2017).

Furthermore, a group of authors proposed implementing a comprehensive program to improve public transportation services for low-mobility individuals, particularly those with disabilities, by making transportation more accessible and available (Jansuwan et al., 2013). They recommend accessible public transportation from suburban areas to central and/or business areas to encourage employment and community participation. Road safety programs and infrastructure improvements are also needed to improve mobility and safety for these individuals. To achieve these goals, transportation planning should account for the different travel patterns of these populations. Finally, local governments should regularly evaluate the travel patterns of different

populations in their service area, including persons with disabilities (Jansuwan et al., 2013).

Since the design of public transport vehicles makes it inaccessible to some groups of transport users such as those in wheelchairs, governments should have strict regulations on the acquisition and manufacturing of public transport vehicles in order to improve overall accessibility and availability of transportation (Duri & Luke, 2022). Such measures are needed to comply with universal access principles, provide incentives to private transport providers to acquire low-floor buses, and prioritize upgrading pedestrian infrastructure. As stated previously, numerous studies have confirmed that specialized transportation services, such as door-to-door transportation, offer individuals with disabilities an alternative means of mobility, allowing them to travel and participate fully in society while supporting their independent living (Portell et al., 2022).

Several measures to improve mobility, road safety, and access to transportation for drivers with disabilities who use hand controls were proposed in a research conducted in Serbia, where the inclusion rate of persons with disabilities is low and challenges regarding transportation equity and inclusion of people with disabilities common (Petrović et al., 2022a, 2022b). In Serbia, traffic safety is threatened by various factors, which include not only criminal and minor offences, but also economic offences and traffic delinquency that may endanger public transportation (Obradović, 2021; Vasilijević, 1972). When it comes to individuals with disabilities, the following four potential areas for action were recognized: improving the driving training process, appropriate vehicle adaptations, raising awareness about road safety, and supporting persons with disabilities to drive (Petrović et al., 2022a). The proposed measures to improve mobility, road safety and access to transportation for drivers with disabilities who use hand controls include training in simulators, periodic adjustment of hand controls, encouraging the use of vehicles with advanced systems or autonomous vehicles, education about risky behaviours, developing appropriate applications for travel planning, and more support for specific groups. As presented by the authors, these measures are expected to improve mobility, road safety, and accessibility to transportation for persons with disabilities (Petrović et al., 2022a).

On the other hand, since non-drivers with physical disabilities have a greater preference for autonomous vehicles compared to drivers, key factors for the successful introduction of autonomous vehicles include attitudes, accessibility, and trust (Petrović et al., 2022b). It is important to note that autonomous vehicles have the potential to enhance mobility and transportation equity for an individual with physical disabilities who are not drivers. However, it might be essential for transportation stakeholders, vehicle manufacturers, and representative associations of individuals with disabilities to collaborate closely for their effective integration into the public transport system, as suggested by Petrović et al. (2022b).

In changed circumstances, such as the COVID-19 pandemic, transportation barriers were also impacted. When in-depth interviews with social workers, nurses, and other care coordinators in North Carolina on accessing medical care were conducted, it was found that the pandemic worsened existing transportation barriers while creating new ones (Oluyede et al., 2022). However, the temporary policy responses that expanded telehealth became an innovative solution to address these barriers. According to the results obtained, it can be underlined that post-pandemic telehealth policy changes could be beneficial for individuals facing transportation barriers (Oluyede et al., 2022). The improvements can be also implemented using both digital and non-digital resources to enhance the public transport experience for users with disabilities based on the knowledge and experiences gained during and after the COVID-19 pandemic (Chiscano & Darcy, 2022).

There is a need for more effective transportation policies at both local and national levels. The service providers also experience difficulties ensuring their clients have accessible and reliable transportation (Ann Bross et al., 2023). In particular, providing training to drivers and transportation personnel to better understand disabilities can help address transportation challenges faced by people with disability (Duri & Luke, 2022). It is also recommended to integrate the perspectives of end-users and state/local providers in transportation policy development and program implementation to address these challenges (Remillard et al., 2022).

CONCLUSION

In general, people with disabilities tend to make fewer and shorter trips and use walking and driving less frequently compared to others. The accessibility and inclusivity of transportation can either promote or hinder the participation of those individuals in various life activities, including social and civic activities, and their independent mobility. Travel barriers are unique to an individual's identity and abilities, with disabilities affecting not only various aspects of mobility, such as walking and driving but also navigating and decision-making. Inaccessibility in travel is not only limited to physical disabilities, but also includes issues with public transit systems, planning practices, wayfinding, and accessing travel information. People with different types of disabilities face unique challenges during travel and may require specific assistance or adaptations.

The transportation needs of individuals with disabilities are not adequately addressed in mainstream travel demand modelling and planning practice. The lack of consideration of their needs in transportation planning can lead to social exclusion, as these individuals face various barriers related to cost, availability, facilities, and travel information. Therefore, it is essential to incorporate the needs of individuals with disabilities in transportation planning to improve their accessibility and inclusion in society.

The study emphasizes the importance of public transportation for people with disabilities, especially those with more severe disabilities, in enhancing their community participation and reducing the impact of their disabilities, and the need for creating a more inclusive social and built environment that recognizes the diversity and differences of individuals with disabilities rather than associating disability with disadvantage. It is vital to have public transportation planning policies and practices that acknowledge and cater to the requirements of people with disabilities. Additionally, having accessible and well-connected public transportation options is especially critical for people with disabilities.

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KARAKTERISTIKE PUTOVANJA ZA OSOBE SA OMETENOŠĆU – KLJUČNI ELEMENTI, DOSTUPNOST I ADEKVATNOST TRANSPORTA I INTERVENCIJE ZA PREVAZILAŽENJE BARIJERA

U ovom radu se ističe važnost putovanja bez barijera za osobe sa ometenošću jer se na taj način povećava njihova uključenost u političke, ekonomske i društvene aktivnosti, i na osnovu najnovijih saznanja predstavljaju ključne karakteristike sadašnjeg stanja putovanja za osobe sa ometenošću, dostupnost i adekvatnost prevoza, kao i intervencije za prevazilaženje barijera. Potrebe osoba sa invaliditetom za određenim prevozom se često ignorišu u preovladavajućim modelima ponude,

potražnje i planiranja putovanja, što pojedinca dovodi pred jedinstvene barijere. Ove barijere uključuju probleme sa sistemima javnog prevoza, različitim praksama planiranja putovanja, ali i sa snalaženjem i pristupom potrebnim informacijama. Potrebna su rešenja poput geoprostornih uređaja, uređaja za alternativnu i augmentativnu komunikaciju i programa obuke. Države bi trebalo da uspostave propise o pristupačnim vozilima javnog prevoza i daju prioritet obnovi infrastrukture za pešake, uz pružanje obuke vozačima i zaposlenima u saobraćajnom sektoru kako bi bolje razumeli prirodu ometenosti, odnosno invaliditeta. Integracija perspektiva krajnjih korisnika i državnih / lokalnih pružaoca usluga u razvoju javnih politika i programa prevoza je od suštinske važnosti za rešavanje izazova sa kojima se suočavaju osobe sa ometenošću.

KLJUČNE REČI: putovanja za osobe sa invaliditetom / prevoz / turisti sa ometenošću / obrasci putovanja / putnici sa invaliditetom