Improving Quality of Life: Effective Space Management for People with Special Needs in Housing

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ABSTRACT

This thematic issue explores the intersection of disability, housing and community while focusing on the importance of inclusive societal foundations. Embracing the social model of disability, it argues that barriers within the physical and social environment hinder independent living. The United Nations Convention on the Rights of Persons with Disabilities (UNCPRD) emphasizes the importance of appropriate accommodation and community living for disabled individuals. Housing policies, reflecting demographic shifts and rights to independent living are crucial. The text explores the varied needs of individuals with disabilities, from sensory limitations to mobility impairments, highlighting challenges faced in housing design and accessibility. Strategies for effective space management are discussed, emphasizing the need for universal design principles to create accessible living environments. Furthermore, the paper suggests home modifications tailored to specific needs, such as adapted kitchens and clutter-free spaces, to enhance safety and functionality. By integrating these approaches, societies can strive towards a more inclusive built environment, ensuring the autonomy and well-being of individuals with special needs.

Keyword: Space Management, Disability, Housing, Quality of Life

Introduction

Disability refers to a loss or limitation of opportunity owing to social, physical or attitudinal barriers such as an inability to enter a building because of the installing of the entrance steps (Morris, 1993). In relation to disability theory and housing, we use the term 'disabled' here to denote how society and the environment can render all impairment groups less able to live independently. The term impairment is issued when referring to any difficulty in physical, mental or sensory functioning which people experience. Intellectual impairments (or learning disabilities) include reduced intellectual ability and difficulty with everyday tasks and the term 'mental disability' is similar, though it can include mental disorders, such as depression or schizophrenia. Locomotional/mobility impairment includes difficulty with walking or moving around (e.g., necessitating use of wheelchairs or walking aids or extra time or support to move around). Sensory impairment refers to visual and hearing impairment. The World Health Organization supplied an

ecological definition of disability and took into consideration an inability in terms of the natural and social environment. Because of this, impairment is a complex phenomenon that illustrates how a person's environment and the network in which they live interact (WHO, 2007).

The free-living development expects that all human existence is of worth, anybody is fit for applying decisions and applying command over their lives (Morris, 1993). Disabled people expect to be able to make their own decisions in response to housing options (Stewart and Ranson, 1988). This problem specializes in home, housing and community as starting point for an inclusive society. Adapted housing refers to social rented properties which have been modified in some way to improve accessibility for an individual's specific housing needs. For disabled people, reasonable accommodation and community living are recognised under the United Nations Convention on the Rights of Persons with Disabilities (UNCPRD; United Nations,2006) as crucial elements for independent living on an equal basis with others. In numerous nations, housing strategy progressively mirrors the segment pattern of a maturing population, a rising number of disabled individuals and the need to admire impaired individuals' rights throughout the lifestyle course (United Nations, 2006). In nations that have advanced social rented housing, the area represents a vital useful resource for supplying suitable housing and unbiased dwelling to disabled humans in a community setting (Mackie, 2012).

Accessible properties are those constructed to meet inclusive design or accessible standards, such as housing for varying needs (Scottish Homes, 1998; Watson and Joseph, 2012) or lifetime homes (Goodman, 2011). Accessibility can also refer to the degree to which information, a service or a device/product is available to people with different impairments. However, individual permits are part of a broader process that encompasses applying for housing, matching to a suitable property, offers of a property viewing and settling into a new residence.

Need for space management

People with exceptional or more than one disability have exceptional desires and necessities for accommodations, helps and facilities differentiate to the everyday people. Housing is measured as a necessary element to the public support system that will affect the quality of life and community variation of disable people (SFELP, 2002; Wong and Stanhope, 2009). According to Habraken (1972) and Turner (1976) the quality of dwellings is related to much more than physical or technical design criteria. Similarly, Rowe (1993) also express some awareness and uncertainty about the importance of a knowledge of housing quality. Harrison (2004) emphasized that beneficial outcomes of physical and other specialized principles which are applied to dwellings.

According to Mansell and Brown (2008) the total number of people with disabilities who live at home together with their family and friends is increasing. Thus, housing layout is result to be the start line to influence reintegration and unbiased dwelling for disabled people. For people with intellectual disabilities, clustered housing gives them inferior results than the dispersed housing. Young (2006) states scattered housing enhances life quality, increases opportunity for making decisions, encourages successful behaviour and is very economical.

Housing quality in a physical sense is only one part of the basic needs of people (irrespective of whether or not they have a bodily impairment). The different fine issues with regards to dwellings consist of the meanings and expectancies vested by people for their homes and neighbourhoods, including social collaborations with neighbours and opportunities to self-manage the residence experience (Harrison, 2004). Allen et al.'s (2002) research of vision-impaired children living in a poor neighbourhood, showed

the children's confidence being diminished by their poor living environment. Children's living conditions were significantly more influenced by wider environmental issues than by issues with poor urban planning. Such experiences of dwelling are variable across time and space and are likely to lead to diverse interpretations of what housing quality is or ought to be. According to Lawrence (1995), housing quality is intersection of the availability, affordability, physical condition and functioning of dwellings. These qualities determined by socio-economic status, institutional and political relationships. Consequently, an understanding of housing quality requires the integration of diverse subject matter, including studies of the supply of dwellings, the material characteristics of housing and value systems of different types of residents.

Challenges Faced by People with Special Needs in Housing

Disabilities that involve sensory limitations like sight, hearing and sensation, motor impairment. A significant number in motor group affacted with lower extremity dysfunction are confined to wheel chairs (Patel and Gandotra, 2007). The focal point of the eye can become dark and yellow of sight impaired person that influence capacity to perceive colors like blue-green finish of the variety range. Partially blind person's eyes take more time to change focus from an object close at hand to another farther away and to focus when they move from light to dim regions or the other way around. During these intervals, they may not be able to see hazards such as steps or furniture. Fortunately, visually impaired people can adapt familiar spaces such as their own homes. A profoundly deaf person often has difficulties to hear sound then appropriate emergency communication systems are critical for deaf people. Audible caution alerts, vibration devices and Teletypewriters can greatly increase communication between hearing-impaired people, their families and friends. working controls, switches handling, grasping items like door handles and utilizing instruments are the main issues for individuals with motor impairment. Large lever type controls on faucets, door latches and appliance knobs are effective solution for person with arthritis. The minimal space in doorway can hinder the movement of person seated on wheelchair so clear opening width is required. Person seated in a chair or wheelchair is limited to a maximum side reach and front reach so the lowest easy reach from a seated position is approximately 9 to the side and 12 to the front. Objects and tools that require hand grasping must utilize designs that reflect capabilities of the user. Ergonomic tool design, foam and grip tape on tool handles, tool holders and connective cords are helpful to prevent tools from falling. Modifications that minimize the use of the hands include speaker phones, headsets, automatic diallers and voice recognition computer input systems (Patel and Gandotra, 2007).

Strategies for Effective Space Management

The disabled persons are characterized through the limitations they come upon with inside the body and social surroundings wherein they live. Social fashions generally tend to activate guidelines and regulations that search for to create common layout environments, appropriate for every age and abilities. Issues are seen not as primarily individual, but concerned more with the disabling effects of inaccessible environments. As a result, there is a focus on creating accessible mainstream housing, transport, public amenities and services (WHO, 1997).

Access to buildings and spaces can be set at different levels of functionality for disabled people. Milner and Madigan (2004) identify a continuum of accessibility for domestic buildings that moves from:

- **Negotiable** in cases when a facility permits some mobility across its lower floors and only permits aided entry, but not always access to toilets.

- **Visitability** is the degree to which a building permits autonomous wheelchair access to the grounds, mobility to lower floors and toilet accessibility.
- **Liveable** if a building allows wheelchair users to reach the lowest floor, navigate between rooms and have access to a functional bathroom, toilet and bedroom without assistance.
- **Adaptable** refers to a home or apartment that has been completely renovated or constructed with the intention of providing the appropriate degree of accessibility needed when the occupant's social and life circumstances evolve over a minimum of thirty years.
- **Universal** housing refers to fully accessible homes or apartments for individuals with functional disabilities or wheelchair users who don't require assistance.

Accessibility in a building including housing is important. According to Dalilah (2011), the Universal Design Index rates accessibility based on six factors: connectivity (15%), accessibility (25%), usability (20%), safety (20%), integrated design (10%) and operation and maintenance (10%). A passing score of 65% is required for each of these factors. Each of the six elements is connected to the others. A universal design in housing should provide a ramp, toilet, appropriate space, entrance, handrail and practical design.

Design consideration

Walks and paths

- Walks should have a flat, level surface that is smooth and suitable for wheelchair use. Uneven rides are frequently caused by irregular surfaces like cobble stones, bricks, concrete with coarsely exposed material, etc.
- The recommended pedestrian way width for moderate two-way traffic is between 1650 and 1800 mm, with a minimum width of 1200 mm.
- Longitudinal walk gradient should be 3 to 5% (30 mm - 50 mm in 1 meter)
- It is ideal to have benches and a rest place next to the walk at regular intervals when the trek is longer than 60 meters. The height of the seat should be between 350 and 425 mm, but not more than 450 mm, for comfort.
- It will be preferable for blind people if walkways next to seating had a different texture.
- Stay away manholes and grates on walkways. If grates are unavoidable, bearing bars should be positioned perpendicular to the travel route with no more than a 12-mm-wide gap between them.

Lifts

If a lift is needed per the bylaws, at least one must be provided for wheelchair users. The Bureau of Indian Standards recommends that lifts of the following cage dimensions be used for passenger lifts with a capacity of thirteen people.

- Clear internal depth: 1100mm.
- Clear internal width: 2000 mm.
- Entrance door width: 900 mm.

A. A hand rail that is 800–1000 mm above floor level and at least 600 mm long must be installed next to the control panel.

B. The interior dimensions of the lift lobby must be 1800 x 1800 mm or greater.

C. The time of an automatically closing door should be minimum 5 seconds and the closing speed should not exceed 0.25 M/ Sec.

D. There must be a device installed inside the cage that can be heard to signal the floor it has reached and whether the entrance/exit door is open or closed.

Car parking

- Width of the parking bay shall be minimum 3.60m.
- The length of the parallel allocated parking spots should be 7000mm, with a minimum canopy height clearance of 2600mm.
- When paid parking is available, there should be a clear space in front of the machine that is at least 2100mm wide and 1850mm deep.

Access routes

- A clear width of 2000mm is recommended.
- Where the clean width of a get right of entry to direction is much less than 2000mm, passing locations have to be provided. It has to be 2000mm wide x 2500mm long
- Guardrails or barriers should be 1200mm high

Ramp

- External ramps should have a gradient no longer exceeding 1 in 20, with an extreme ascent of 450mm.
- Prevent the installation of steep ramps.
- A ramp should have a mild rise of 10 mm for every 120 mm of travel.
- At both ends of the ramp, there should be a level area measuring at least 1500 mm in length so that a wheelchair may stop and not spin out of control.

Stepped Approach

A minimum tread size of 300 mm and a maximum riser of 150 mm are required for stepped approaches. Similar to the ramped approach, there is a 900 mm high hand rail available on both sides of the stepped approach.

External steps

- External steps must have a minimum clear width of 1200mm.
- A flight of stairs' total height between landings should not exceed 1500mm.
- Entrance Landing: An entrance landing that is at least 1800 x 2000 mm in size must be provided next to the ramp.

Corridors

- It is suggested that corridors have a minimum width of 1500mm.
- If there is a variation in the level slope, pathways must have a slope of 1:12.
- Hand rails must be installed for slope ways and ramps.

Entrances

- Every entrance door should have enough room outside for individuals to comprehend, access, and use any entry systems or intercoms.

Doors

- For new structures, entry doors should have a clear opening width of 1000mm, but for existing buildings, it should be at least 850mm.
- Exit/entry Door: The entry door must have a minimum clear opening of 900 mm and cannot have a step that would hinder a wheelchair user's path. Raising the limit by more than 12 mm is prohibited.

Toilet

- It is recommended that grab rails be installed on both sides of the cubicle.
- The toilet seat height should be 480mm above the ground.
- Larger cubicles have to be 1200 mm in width and offer a clean circulation area of 900mm x 900 mm.

- The suggested measurements for a self-contained, accessible changing space are 2300mm x 2500 mm, with a minimum size of 1500 x 1750 mm.
- The door must swing out and have a minimum clear opening of 900 mm.
- In a toilet, a suitable arrangement of vertical and horizontal handrails with a 50 mm gap from the wall must be built.
- The W.C. seat needs to be 500 mm above the ground.

Internal stairs

- Internal stairs should have a minimum clear width of 1200mm. Measurement between the handrails is necessary.
- The upper surface of handrails should be positioned between 900mm and 1000 mm above the stair flight pitch line and between 900mm and 1100 mm above landings.

Sanitary facilities

Within a public facility, the horizontal travel distance to the closest restrooms shouldn't be longer than 40 meters.

Signage

Signs should primarily serve to clearly point out locations, provide warnings and offer directions. A wheelchair user is less than 1200 mm in height. A person with impaired vision requires audio warning signs for hazardous locations and pathways with contrasting textures. Signs have to be easily legible with the fingers, visible at eye level, and brightly lit for nighttime identification.

- Signs must include the symbol of access and specify the name and direction of the accessible facility.
- Sign lettering must be readable and clear in terms of size, style, and arrangement.

Home modifications for special needs

Physically handicapped require having a clean, clutter-free home environment for their safety and comfort. For individuals with visual impairments, discovering an object where it should be is much more than just a pleasant surprise. Strains from bending and stretching can be avoided by setting up storage at the proper height. Goods scattered all over the house could cause a fall or make an area of the house completely inaccessible. Being structured is not only beneficial for this particular group, but it may even save lives (Patel and Gandotra, 2007). Modifying the home for their specific needs will make it easier to create a highly functional environment and allow them to live independently. It is necessary to evaluate the difficulties in each room.

Sue Fox (2005) has suggested some modifications of homes for special needs.

Kitchens: The more accessible kitchen storage spaces make easier to put things back where they belong and less clutter. These kitchens adapt lower counters for accessibility from a wheelchair, shelves in closets and pantries for easy reach, sliding baskets and lazy susans in cabinets, open tubs and baskets for storage when possible, racks and hanging storage, store everyday items between knee and shoulder height, centers for each type of food preparation activity and power strip for easier use of electric appliances

Living Rooms and Hallways: Living rooms and hallways may require some modification to reduce the amount of furniture and other clutter that could be a mobility hazard. These modifications are rearranging room to clear walking areas, low pile carpet for ease of movement, open storage baskets near activity areas, lower shelving to make books more accessible, cord wraps or guards to keep wires under control, remove furniture or storage pieces along hallway walls and install handrails along corridor walls.

Bathrooms: Bathrooms are the most challenging room in the house but many organizational changes are essential for ensuring safety. Store bath products on shelf next to bath bench, remove excess clutter from shower or bath area, set up a power strip for easier use of electric appliances, use pull-out baskets and lazy susans in deep storage, set up centers for each type of grooming activity, store medicines and emergency items within reach and keep a phone in the bathroom are the necessary modification for bathrooms.

Bedrooms: In bedrooms, the major areas where clutter collects are by the bed and in the closet mostly because the storage isn't set up appropriately. So, the proper arrangements of goods are necessary to reduce accidents. Some modifications like use shelving instead of drawers for folded items, lower rods and shelves in closets for easy reach, organize clothes by type and use for easy access, keep a small basket at bedside table for loose items and limit the items on bedside table, are important in bedrooms.

These are small changes that can be made for minimal expense. If cost is not an issue, new innovative solutions in universal design are available. The marketplace today offers a tremendous array of products to help provide solutions to make independent living easier. These products, combined with simple adjustments in the home, can create a safe, organised and accessible environment for people with special needs.

Conclusion

In conclusion, the concept of disability extends beyond physical limitations, encompassing societal barriers hindering full participation. Accessibility and inclusivity are vital in housing design, fostering independence and quality of life. Through universal design principles and tailored accommodations, homes can support diverse abilities. Technological innovations offer further opportunities for enhancement. Social support systems and policy interventions are crucial in ensuring equitable housing options. Creating accessible housing is not only about compliance but about promoting dignity and inclusion. By prioritizing universal design, collaboration and amplifying the voices of disabled individuals, we can build communities where everyone can thrive.

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