

DIY Home Modifications: an Australian case-study of choice and control

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Abstract. Recent disability and aged care reforms in Australia have shifted emphasis from ongoing support and care toward prevention and early intervention, complementing universal design values of equity and flexibility. The reforms encourage the active engagement of individuals in the choices they make about housing and the support and care they receive, and will drive a preference to age in place. Approximately 2% of Australia's housing stock is new built each year, with a small proportion incorporating universal design principles. Consequently, existing premises will need to be modified to enable people who are ageing and people with disability to live in the community and receive support at home. This paper considers how, in a person-centred support environment, do-it-yourself (DIY) home modifications expand our understanding of universal design, as DIY can empower individuals to exercise autonomy and control over their lives and the choices they make.

This paper uses preliminary findings from research undertaken at the Home Modification Information Clearinghouse (Australia) into DIY home modifications to illustrate how the DIY process reaffirms the role of the individual in universal design. First, the paper provides an overview of the Australian reforms and universal housing design in Australia to highlight the potential of modifications to enable aging in place. The paper then provides an overview of the project and research methods, followed by a discussion of preliminary findings. The paper concludes that DIY highlights the importance of individual choice and control over changes made to a person's home. DIY home modification practices should inform the way that universal design policies accommodate and facilitate the views and preferences of the individuals they are designed to serve.

Keywords. DIY, livable housing, reform, person-centred, Consumer-Directed Care

Introduction

The importance of universal design principles in building housing which enables people with disability to live independently is well established [1, 2]. In Australia, the provision of support and care to people who are ageing, and for younger people with disability, will increasingly be delivered within the home environment. This, together with the impetus for governments to lower healthcare costs as populations age, highlights the need for accessible home environments. Recent disability care and aged

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care reforms in Australia focus on the delivery of support in the home. They prioritise prevention and early intervention to avoid inappropriate entry into residential care, aim to increase independence, and decrease the reliance upon paid supports to undertake personal and domestic functions within the home [3]. The universal design principles of equity and flexibility complement the central pillars of Australia's reforming systems, namely Consumer-Directed Care (CDC) and person-centred support. These policy initiatives encourage the active engagement of individuals in the choices they make about where they live, the nature of their home environment, and the support and care they receive in the home and community [3]. These significant reforms present a challenge for policy makers to ensure that suitable housing is available for people to receive support and care in the home and enhance their independent functioning.

Currently 2% of Australia's housing stock is new built each year [4], with only a small proportion incorporating universal design principles [5]. This means that retrofitting existing housing through home modifications will continue to be the primary method of applying universal design principles. This paper considers the place of DIY home modifications² within the Australian reform context, and highlights the importance of the individual within design and decision-making processes. Firstly, the paper provides a brief overview of Australian reforms and the impact these are likely to have upon current home modification programs. The paper then provides an overview of the research project and methods and summarises the literature review. This is followed by a discussion of preliminary findings, focusing on the motivations for choosing the DIY options.

1. Background

1.1. Australian Policy Reform Context

The disability and aged care sectors in Australia are undergoing significant reforms, in the form of the National Disability Insurance Scheme (NDIS) [6] and Living Longer Living Better (LLLBB) [7] aged care reform package. Both aim to increase and improve access to supports in the home rather than in residential facilities. This paper will focus on the disability care reform and the NDIS as the scheme is further advanced and partially operational, and has specified a mechanism whereby eligible participants can access home modifications.

Reforms to the disability A government-initiated inquiry by the Australian Productivity Commission found that the State-based systems were "inequitable, underfunded, fragmented, and inefficient and ... (gave) people with a disability little choice" [3] (p.5). It recommended the establishment of a national insurance scheme to deliver the resources needed by people with disability to "enhance ... quality of life and increase economic and social participation for people with disability and their carers" [3] (p.93). The NDIS is based on an insurance model designed to overcome numerous barriers evident in the old State-based "provider-centric model" [3] (p.102) and increase "the capacity for people with disabilities or their families to exercise choice ... and to have control over the financial resources allocated to them" [3] (p.102). The

² We understand DIY home modifications to be: a *home modification project that is undertaken by a person with a disability themselves or with the assistance of family members or friends.*

incremental rollout of the NDIS adds another layer of complexity to the disability care sector, and may impact the way ageing Australians and younger people with disability modify their homes as the insurance scheme comes into effect nation-wide.

1.2. Universal Housing Design in Australia

The application of universal design principles in Australia is not regulated. Rather, it is subject to a voluntary code produced by Livable Housing Australia (LHA)³. ‘Livable housing’ or ‘livable housing design’ has become an accepted and common term as a means of realising universal design principles within the Australian housing industry. These terms are used synonymously with ‘universal design’, ‘accessible design’, ‘accessibility’, ‘standards’ and ‘sustainability’ to describe “a home (which is) designed and built to meet the changing needs of occupants across their lifetime” [8] (p.8). LHA’s goal is for all new housing to be built to a minimum accessibility standard (Silver) by 2020 [8]. Currently, 2% of Australia’s housing stock is new built each year and only a small proportion incorporates livable housing design principles [8]. As such, housing for people who are ageing or people with disability will be predominately sourced from existing stock. Thus retrofitting will be the principal way in which universal and livable housing design principles are applied. The high proportion of home ownership, coupled with limited appropriate housing and a reform environment which encourages aging in place, is likely to foster the modification of existing premises to enable individuals to live in the community and receive healthcare support at home. Livable housing and universal design principles [8, 9] complement the aims governments are trying to achieve through these care reforms in Australia.

2. Case Study: DIY Home Modifications

This paper uses the *DIY Home Modifications: Point-of-Sale Support for People with Disability and their Carers* project (the project) as a case-study to illustrate the potential of DIY home modifications and highlight the importance of individual choice and control in the changing reform environment.

2.1. Project Outline – Aims and Methods

The project is scheduled to run from October 2013 to December 2014. The overarching goal of this project is to produce a suite of resources to provide advice to consumers intending to undertake DIY home modification projects. These resources will be made available online and at the point-of-sale for retailers and consumers. Five common modifications have been chosen, these are:

- grab rails;
- ramps;
- hand-held showers;
- level-access shower recess; and
- hand railings for stairs and steps.

³ LHA is overseen by an organisation that is made up of industry, government and community groups.

The project was informed by anecdotal evidence which suggests DIY home modifications are commonplace. There is little evidence about extent of DIY home modifications, or the reasons why individuals choose this option over others. The project will address this knowledge gap in home modifications research by investigating why people with disability and their carers choose to undertake DIY home modification projects. The key questions for the research are:

- What home modification components are being sold in consumer quantities from Australian retail outlets, both physical and on-line?
- What information do retailers of home modification components have or need?
- What information is currently provided to consumers who purchase these home modification components?
- What information do consumers need, and in what formats?

From these key questions the following sub-questions emerge:

- What impact has doing the home modification project/s had upon the person and their household?
- What assessments are made about the quality of the home modification project/s?
- What aspects of the planning and implementation of the project process are people with disability and/or their carers mainly involved with?
- Where do people with disability and/or their carers source information about the products they require and how to plan and complete their projects?
- How did people rectify the mistakes?
- What things stood out for people in the successes?
- Do people talk about their experiences as positive or negative and/or with pride?

In order to answer the questions identified above the project will employ a range of qualitative methods, combined with an economic cost-benefit analysis. These methods are summarised in [Table 1](#) below.

Table 1: Research methods

Method	Participant/s	Data	Phase
Semi-structured interviews (conducted in person and over the phone)	Representatives from key stakeholder organisations including: - Government Departments - Disability and Carer Organisations - Retailers	Organisations' perspectives and experiences of DIY home modifications	1 (October 2013 – March 2014)
Surveys (online and hard copy)	Individuals: - Consumers - Hardware store employees - Pharmacists - Building industry association members	Individual experiences of DIY home modifications	2 (April – June 2014 [8 weeks])

Method	Participant/s	Data	Phase
Economic cost-benefit analysis	Hardware retailers Wholesalers of related products	Sales volumes	3 (April – May 2014)

This paper will report on the first phase of the project. This phase consisted of a literature review and semi-structured interviews with representatives from key stakeholder organisations and agencies⁴. The semi-structured interviews (key informant interviews) aimed to learn what existing data and project-relevant information was held by organisations whose members include people with disability and carers, relevant government departments and agencies, and retailers of hardware products and their associations. Each semi-structured interview took approximately 30 to 60 minutes and followed a generic interview schedule. At the time of writing, interviews had been conducted with representatives from 15 organisations. The next section of the paper provides a summary of findings from the literature review, an overview of the semi-structured interview process, and a discussion of preliminary findings.

2.2. Literature Review

A systematic literature search was conducted using three key terms ('DIY', 'home modification' and 'disability') and their common variants. This revealed a small selection of articles focused on assistive technology and home-based adaptations, and a number of self-help resources focused on ageing in place. A wider search was conducted about DIY home renovation, to establish whether similarities or differences exist between the general practice of renovations and home modifications.

A strong correlation exists between home ownership and DIY [10], with growth in the DIY sector reported in countries with high rates of home ownership such as the USA, the UK, Australia and New Zealand [11, 12, 13, 14]. Factors that impact whether or not projects are DIY included the skill and competency of a householder, their age, household composition, and the size and scope of the project itself [15].

Existing studies into DIY home renovations aim to understand why people choose this option over employing a contractor [14], and whether this is due to choice or necessity [12]. DIY home renovations are common to self-provisioning where people choose to participate in alternative economies [16]. One motivating factor for this is the lack of availability or reliability of tradespeople, and the lack of value attributed to their charges. This reluctance to hire contractors may also be based on a "fear of poor work standards or excessive charges" [12] (p.753).

The desire to make functional changes to a home for minimum cost and with high aesthetic values may drive a significant amount of DIY activity, but it is influenced by the personal values held by the householders. Mackay [17] argues that some people actively seek recycled materials and tools to use in their DIY projects, highlighting a tendency toward thrift and sustainability. Personal values and aspirations also drive the aesthetic choices of some, determining the extent to which they are involved in those renovations. The "desire to decorate and possess beautiful things" [18] (p.392) is a

⁴ Ethics approval for the semi-structured interviews was sought and granted by the Human Research Ethics Committee within the Faculty of Built Environment, UNSW Australia (Reference Number: 135096) in September, 2013.

narrative identified in the literature review. In this instance, the personal tastes of the householder are prioritised.

Similar motivations are evident in the literature specific to DIY home modifications. Stewart [9] recalls her frustration with the local authority's response to her application for a ramp for her ageing mother's home to avoid residential care, and her decision to contract a trades person. This account highlights the disparity between the policy aim of individualisation of care and the actuality of delivering it. The barriers confronting people with disability are well illustrated in accessible housing discourse, where housing often presents different disabling situations [19].

Whilst DIY home modifications are under-researched, the needs for greater involvement by individuals in need of or in receipt of modifications, and the validation of their choices, are significant themes. The subjective choices of individuals about home modifications are increasingly viewed as important to aid successful functioning in the home environment [20]. Issues such as dignity, positive self-image, and inclusion of personal and cultural values are important in decisions about modifications, as are relief from danger and discomfort, the removal of barriers, the need for choice, and good communication about the options available [20]. Heywood [21] reported that some people with disability are negatively impacted by home modifications, which, while they have in many cases addressed the physiological needs of the individual, were installed with little consideration of individual preference or of the home's aesthetics, and led to feelings of depression and isolation: "When unwelcome adaptations are installed, the recipient sees their helplessness reflected, both by the object that reminds them of their disability and by their inability to prevent its being put in" [21] (p.138).

Similarly, focus groups conducted in the UK identified a significant level of understanding and knowledge about the types of modifications required and their impact, highlighting the willingness of participants to take more responsibility for modifications by being involved in the decision-making process [22]. The research recommended that "information and opportunities to take control should be made available to the client ... at the outset of the ... process" [22] (p.8). The literature discussed in this paper clearly underlines the links between DIY and consumer choice and control, and places particular emphasis on the complex and varied motivations for choosing the DIY option. These motivations are examined in the next section of the paper through a discussion of preliminary research findings.

2.3. Preliminary findings: motivations for doing DIY home modifications

This section discusses the preliminary findings from a sub-sample of key informant interviews. The sub-sample (12 interviews) highlights the importance of universal design principles, in particular equitable use and flexibility in use – these two principles and their guidelines emphasise aesthetics, individual choice, inclusion, equality and independence [2]. When examined within the reform environment, the motivations for choosing DIY are crucial to any discussion of universal design as they highlight individual choice and control. The literature review identified the complex and varied motivations for DIY. These motivations were discussed in the key informant interviews. The interviews and literature review foregrounded the following motivations:

- *Aesthetics* (personal taste or preference)
- *Availability/Ease* (of products, i.e. hardware retailers or online shopping)

- *Confidence* (in one’s own abilities)
- *Control* (i.e. over choices, expenses, contractors, design, etc.)
- *Cost* (of contracting or of co-contributing in a HMMS)
- *Expertise* (self/family member/friend who has expert skills/perceived expertise)
- *Independence* (as an expression of one’s independence or to assert this)
- *Knowledge* (lack of knowledge of other options or avenues)
- *Time* (constraints due to hospitalization/length of time between assessment and modification)
- *Trust* (lack of trust of others such as trades people, government etc.)
- *Sustainability* (self-provisioning/environmentally sustainable modification/s).

The motivations for doing home modifications DIY range from a lack of knowledge about funded alternatives (such as the HACC services); or the ability to access “the home-based mods scheme for even small jobs like changing a light bulb” (Disability/Carer Organisation); to a mistrust of existing systems or tradespeople. For example, where one has to go “through the bureaucracy of service providers and ... go on waiting lists” (Disability/Carer Organisation), “[the home modification service] quoted two years to see a community OT⁵” (Disability/Carer Organisation), the DIY option may become more feasible especially coupled with a “lack of trust around somebody going to be there when they say they’re going to be there ... (and) staying home all day wondering ‘when are they going to get there?’” (Retailer/Retailers Organisation). These sentiments underline Davidson and Leather’s [12] discussion of the reluctance to hire contractors caused by a fear of poor workmanship or high cost. Indeed, the nature of home modifications and trust of tradespeople was discussed from a privacy point of view as sometimes “people are pretty protective of that environment ... (and) would more naturally go ‘I’ll have this done with this chap because I know him, and it might be a bit expensive but I need to have it done and it’s a private matter’” (Disability/Carer Organisation).

Consumers and retailers both note cost as a significant contributing factor. The discussion to undertake DIY home modifications was also linked to confidence (in one’s self or abilities) and the availability or ease of access to products and sources of help. The following quote exemplifies this “... pricing certainly has an impact ... I think now the confidence of actually being able to come in to a store ... and have an opportunity to ask a friendly and helpful team, get their expert advice from the shop floor, and be able to go home and have the confidence to do it yourself” (Retailer/Retailers Organisation). A retailer representative stated “... the ease of which you can purchase things, like grab rails and hand showers ... [and] the ease with which some of these things can be done now, purchasing reasonable quality products from major hardware stores, certainly has opened the door to some of these [modifications] being do-it-yourself” (Retailer/Retailers Organisation).

In contrast, it was noted that “just because you’re a user of modifications doesn’t mean that you know anything about it” (Disability/Carer Organisation). This cautions against DIY being undertaken without the appropriate level of skill, information or support from experts. Although ‘experts’ are often seen as builders and tradespeople, for home modifications experts are OTs or access consultants and are often necessary to provide advice individual requirements.

⁵ OT refers to an Occupational Therapist

Time is another important motivating factor for DIY, especially as it relates to an individual's health and wellbeing. As indicated earlier, the interviewees made mention of the, at times, lengthy assessment processes under the State-based systems and the importance of carrying out modifications quickly. Common descriptions included hospital discharge influencing the DIY option as "often [patients] don't get a long time from when they're told their time at the hospital is coming to an end, so they are rushed to get things done" (Disability/Carer Organisation) and deteriorations in health where "people want things done now, earlier, especially ... where they're progressing quite rapidly" (Disability/Carer Organisation) and do not have the time "to go through a very lengthy process to get something that is actually quite low cost" (Government Department).

The key informant interviews support the definition of DIY that we have adopted for this project. Interviewees referred to people's existing relationships with "tradesman friends" (Disability/Carer Organisation), "a family builder who they trust" (Government Department) or the existence of "expertise in the family" (Government Department). Individual choice and control were referred to throughout the interviews, as aesthetic control (i.e. "don't want it to look like a hospital..." [Disability/Carer Organisation]) and "have a say in how things are renovated, how things are going to look" [Disability/Carer Organisation]), quality control (i.e. "there's a real feeling that 'If I'm putting in money for this I want to be able to have control over it'" [Government Department]), as a means of expressing independence (i.e. "for me it's very much about independence ... to make everyone's life easier" [Disability/Carer Organisation]) and also of maintaining feelings of normalcy. The key stakeholder interviews support and highlight the importance of individual choice and control in the design and decision-making processes, re-asserting the importance of the individual to improve wellbeing through active engagement: creating a "sense of control over what's happening in their life ... rather than give control to someone else" (Disability/Carer Organisation).

3. Conclusion

DIY home modification projects allow a much more active engagement with universal design principles. The DIY home modifications project preliminary findings suggest that rather than the principles applying solely to the design outcomes, individuals actively engage with the principles by exercising choice and control in the process of conceptualising, designing and building their home modifications. DIY home modifications highlight the importance of individual choice and control over changes made to a person's home. DIY home modification practices should inform the way that universal design policies accommodate and facilitate the views and preferences of the individuals they are designed to serve.

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