

## Research Article

# Understanding home modifications impact on clients and their family's experience of home: A qualitative study

Tammy Aplin, Desleigh de Jonge and Louise Gustafsson

Division of Occupational Therapy, School of Health and Rehabilitation Sciences, The University of Queensland, St Lucia, Queensland, Australia

**Background/aim:** Home modifications aim to enhance safety and occupational performance in the home. However, given the complexity and unique meaning of the home, they can impact aspects other than function. This qualitative descriptive study aimed to explore the impact of home modifications on clients and their family's experience of home.

**Methods:** Home modification clients and their family and carers participated in 42 in-depth interviews which were analysed using a template analysis.

**Findings:** Home modifications impacted positively and negatively on five dimensions of the home environment, the personal, occupational, physical, temporal and social dimension. The outcomes of the modifications and the home modification process were influenced by three themes, workmanship, consultation or involvement in decision-making, and the societal dimension of the home environment.

**Conclusions:** The negative outcomes and poor consultation experiences suggest the need for occupational therapists to understand their client's personal experience of home and to comprehensively follow-up and evaluate these following home modifications.

**KEY WORDS** disability, home environment, home modifications, occupational therapy.

## Introduction

Home modifications aim to enhance independence in everyday tasks by decreasing physical environmental barriers in and around the home (Petersson, Kottorp, Bergstrom & Lilja, 2009). They also aim to increase ease of use, safety, and security in the home (Pynoos, Tabbarah, Angelelli & Demiere, 1998). A recent systematic review identified that home modifications reduce falls, and improve functional performance and caregiver outcomes (Stark & Keglovits, 2012) thereby supporting the fundamental aims of home modification practice to improve occupational performance and safety. However, qualitative research suggests that there are wider outcomes with modifications impacting relationships, social engagement, privacy and identity (Heywood, 2004, 2005; Jones, de Jonge & Phillips, 2008; Niva & Skar, 2006; Tanner, Tilse & de Jonge, 2008).

Two studies have identified that modifications can decrease carer's stress and frustration, therefore improving relationships (Heywood, 2005; Tanner *et al.*, 2008). The relationship between some older adults and their spouses were reported to be improved in Tanner *et al.*'s study where clients felt less sheltered by their spouses as a result of modifications. The literature also provides examples where relationships are negatively affected, such as, not allowing enough space for family members or family activities, causing family tension as the needs of the family member who required modifications were put ahead of other members (Heywood). Additional impacts of modifications include the promotion of social activities outside of the home (Niva & Skar, 2006), greater privacy (Fänge & Iwarsson, 2005; Heywood, 2004), and restoring clients' dignity (Heywood). Clients have also reported dissatisfaction with modifications because of their 'clinical appearance'; reflection of disability, or that they do not match the décor of their homes or represent their sense of self (Heywood; Jones *et al.*, 2008).

These studies point to how one's experience of home (one's individual experience of their home environment including its meaning and usability) can be both positively and negatively impacted by modifications, with a

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**Tammy Aplin** BOccThy (Hons); Associate Lecturer.  
**Desleigh de Jonge** Grad Cert Soc Sci (Health Practice), MPh (OccThy), BOccThy; Adjunct Position. **Louise Gustafsson** PhD, BOccThy (Hons); Senior Lecturer.

Correspondence: Tammy Aplin, Division of Occupational Therapy, School of Health and Rehabilitation Sciences, The University of Queensland, St Lucia, Qld 4072, Australia. Email: t.aplin1@uq.edu.au

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range of dimensions such as the social dimension being impacted. Researchers investigating home modifications and the meaning of home for older adults and people with a disability have called for these wider dimensions which contribute to the experience of home to be considered in home modification provision (Dahlin-Ivanoff, Haak, Fänge & Iwarsson, 2007; Hawkins & Stewart, 2002; Heywood, 2005; Tanner *et al.*, 2008). There is a need to comprehensively identify and further understand the dimensions of home and their relationship with home modification practice. Given the negative outcomes that can arise from home modifications when clients experience of home is not understood (Heywood) the measurement of these dimensions seems particularly important for home modification evaluation. Home modification evaluation is generally informal in nature, for example, client feedback and observation (de Jonge, 2011a) and very few occupational therapists report using standardised assessment tools in their home modification practice (Russell, 2014). This may be due to a lack of appropriate and psychometrically sound instruments for home modification evaluation (Gitlin, 2003; Rousseau, Potvin, Dutil & Falta, 2001). Those instruments which are available focus on the physical environment, safety or occupational performance. For example, the SAFER-HOME (Chui *et al.*, 2006), Housing Enabler (Iwarsson & Isacson, 1996), and the In Home Occupational Performance Evaluation (I-HOPE) (Stark, Somerville & Morris, 2010). There is a need for an instrument which can measure the wider dimensions of the home environment which are impacted by home modifications.

However, first the dimensions of home must be comprehensively understood to inform the development of such an instrument. This study as part of a larger research programme sought to achieve this, to identify and describe the dimensions of home which contribute to the experience of home. Initially a literature review was conducted which included literature from occupational therapy along with, environmental psychology, gerontology and architecture as these disciplines have a long history of understanding the home environment. Five dimensions were identified, the physical, social, personal, temporal and occupational dimensions. These dimensions were introduced and discussed in detail in Aplin, de Jonge and Gustafsson (2013). Briefly, the personal dimension incorporates feelings of privacy, safety and security, freedom and control, self-expression, identity, and the sense of belonging with home (Dahlin-Ivanoff *et al.*, 2007; Despres, 1991; Heywood, 2005; Sixsmith, 1986; Tanner *et al.*, 2008). The social dimension represents the home as a place for relationships and family, it is a hub for social activities and connections with friends, neighbours and the community (Sixsmith; Tanner *et al.*). The physical dimension incorporates the five aspects of structure, materials and finishes; services and facilities; space; the location of the

home; and ambient conditions such as lighting, weather, view, and airflow (Despres, 1991; de Jonge, 2011b; Sanford & Bruce, 2010; Tanner *et al.*). The temporal dimension views the home within a temporal framework of past, present and future, where there is an ongoing cycle of the routines of daily life (Werner, Altman & Oxley, 1985). The occupational dimension recognises the home as a place of doing; a place of meaningful occupation (Despres; de Jonge, Jones, Phillips & Chung, 2011) where activities contribute to 'being' in the home or the meaning and value of home life (Rowles, 1991). The dimensions are linked and can overlap. However, they provide a guide for understanding the complexity of the home environment.

Following the literature review a qualitative study was completed to further develop and understand the dimensions of home which contribute to individual's experience of home. The qualitative study aimed to address two research questions with clients of home modification services and their families. The first research question asked 'How do the dimensions of home impact home modification decision-making?' and has been reported in Aplin *et al.* (2013). The second research question is the focus of this paper and asks 'How do home modifications impact clients' experience of home?'.

## Method

### Design

A qualitative descriptive approach was employed in this study to provide a clear description of clients' perspectives of how their experience of home was impacted by modifications. Maximum variation sampling seeking a range of people who had home modifications including older adults and adults with a disability was used to develop a rich understanding of the dimensions of home and home modifications.

### Participants

Clients of two home modification services were invited to participate if they could provide informed consent, were able to understand spoken and written English, could write in English, and were a recipient (or a family member, friend, and/or carer of a client) of a major home modification within the last two years. A community major home modification service and government housing service disseminated 235 letters of invitation. The community service distributed 115 letters to all their eligible clients and the housing service distributed 120 letters of invitation to a selection of their clients stratified by age and geographical location to enhance the diversity of the sample. The community service defined major modifications as any modifications in total costing \$1500 or more and the government housing service \$1000 or more. The participants therefore had a

range of modifications, often including one larger modification such as a hydraulic lift/elevator or level access shower, in conjunction with other minor modifications such as grab rails.

Participants of the community service most often owned their homes and were required to provide financial contribution for the modification based on their financial situation. Participants who lived in government housing were renters and were not required to make any contribution towards the cost of the modification. In both services, occupational therapists provided home modification assessment, planning and recommendations. The community service provided follow-up visits. The government housing service provided varying levels of follow-up from instructing the client to contact the occupational therapist if there are problems to phone calls and face to face visits.

Of the 235 letters distributed, 42 responses were received, 21 from each service, resulting in a response rate of 18%. The 42 household interviews included 13 joint interviews, yielding a total of 55 participants comprising clients, spouses, family and carers of the service recipient. Participants lived in a metropolitan area in Australia, with an average age of 64 ranging from 25 to 87 years. They had lived in their homes on average for 18 years, ranging from six months to 62 years. Further demographic details are provided in Table 1.

## Data collection

The study was approved by the University of Queensland Ethics Review Committee. Participation was voluntary and informed consent was obtained from participants. Confidentiality and privacy was maintained at all times and as such pseudonyms have been used for participants' quotes. Participants completed one in-depth interview using a semi-structured questionnaire in their own home with the principal researcher, of approximately one hour duration, which was audio recorded and transcribed verbatim. The interviews explored client's experience of home, what contributed to home modification decision-making and the changes that resulted from the modifications. Questions used to facilitate discussion about changes included, *how have the modifications changed things for you, what have been the positive and negative changes, what have these changes meant to you, does the home feel any different to you since the modifications have been completed, and is there any way the modifications could have been improved.*

## Data analysis

Template analysis was selected as this form of qualitative descriptive analysis uses *a priori* of themes to analyse data, but is flexible to allow themes to change, and new themes to be established (King, 2004). The five dimensions of home identified prior to the study were used as the *a priori* themes to inform the analysis. Template analysis was also suitable as it accommodates

**TABLE 1:** Participant demographic information

(N = 55)	n	%
Gender		
Male	25	45
Female	30	55
Relationship to modifications		
Direct client of service	36	65
Parents/guardians of children receiving services	5	9
Spouses of clients	13	24
Carer	1	2
Living situation		
Lived alone	18	33
Lived with spouse	24	43.5
Lived with family/carers	13	23.5
Housing situation		
Own home	21	50
Government housing	21	50
Dwelling type		
Low set house (small number of stairs)	13	
High set house	10	
Ground level house (no more than one step into house)	6	
Unit – ground level	7	
Unit – upper levels	4	
Townhouse	2	
Modifications completed		
Grab rails	19	
Major bathroom modification	18	
Step ramp	5	
Chair lift	4	
Hydraulic lift/elevator	4	
Kitchen modification	4	
Ramp	3	
Stairs installed or replaced	3	
Widening door/hallway	3	
Handrails	6	
Hand held shower hose	5	
Drop down shower seat	3	
Other†	16	

†Other modifications included automatic door, repositioning toilet, balustrading, oven timer, lever taps, concrete paths, re-swinging doors, raising toilet, removal of cupboard, parcel hoist, elevating a driveway and bed raisers.

large volumes of data (King), as was produced in this study.

Initially each transcript was read by the principal researcher to gain a preliminary sense of the information. The five dimensions of home identified in the literature and their aspects for example, space and ambience for the physical dimension were used to

initially code a small number of transcripts. The codes were changed or supplemented with new codes where data could not be placed in the pre-determined codes or a more detailed code was required as recommended by King (2007). The new codes were applied to new transcripts and the previously coded transcripts were reviewed and recoded with these new codes also. After the coding of approximately half of the transcripts, the initial template was developed, including hierarchical grouping of themes (King). At this time a broad theme outside of the initial research questions emerged, that of client's experiences of the home modification process. This theme described what contributed to the outcomes of modifications and client satisfaction with the service provided.

The remaining transcripts were coded and if new codes emerged these were added to the template and previous transcripts were re-coded if required. At this time, text which was coded as a theme contributing to the impact of home modifications on the experience of home was also coded as either a positive or negative impact.

Rigour was established through peer and member checking. In an attempt to enhance credibility, participants were provided with a summary of the main themes after each interview. The participants were encouraged to clarify and elaborate on any content to ensure their story had been understood accurately. Peer checking occurred when members of the research team individually coded a small number of transcripts during the initial coding stage. The team then met to discuss the coding. Where differences occurred, they were discussed and a consensus was negotiated. Further discussions occurred on the coding of data and groupings of higher order codes as analysis progressed.

## Findings

Clients and their family's experience of home were diversely impacted by home modifications both positively and negatively, with twice as many clients of the government housing service reporting negative outcomes than those of the community service. Most participants reported positive changes to their experience of home, with the personal and occupational dimensions being the most commonly improved. The analysis also revealed themes which contributed to the experience of the home modification process, including, the workmanship of the builders, consultation or involvement in decision-making and a new dimension, the societal dimension.

### Personal dimension

#### *Safety and security*

The modifications often resulted in an enhanced sense of safety, which was highly valued by participants.

They expressed relief and a reduction in anxiety and fear when they were able to perform activities comfortably and confidently again. Some participants also reported a decrease in injuries and falls.

Made it a hell of a lot easier, and I don't mind going and having a shower if I'm here by myself now, because I feel a lot safer with it. (Rhonda, client, 71)

It has made a difference, I don't fall as much as I did, and I don't get as many bruises as I did. (Helen, client, 61)

However, some participants described how their modifications resulted in unsafe situations. For example, dangerous materials being used on step ramps which were slippery or likely to deteriorate with the weather. Other modifications had not included features which would have enhanced safety, such as handrails or kerbing on paths to ensure a wheelchair could not slip off the edge.

#### *Appearance and identity*

The home's appearance is integrally linked with the occupant's identity, reflecting who they are. The appearance and the connection to identity were both positively and negatively impacted by modifications. Some participants reported that the appearance of the modified area was enhanced by the modification. A new modern bathroom, kitchen or front access was often enjoyed by participants.

We actually think it (ramp) improves the look of the house. (Keith, client, 80)

However, there were a number of participants who were disappointed with the appearance of the modifications, feeling that they made their home look 'disabled' or 'like a hospital'. Another point of disappointment was modified areas being left unfinished, with no towel rails or toilet roll holders, for example. However, many participants were not worried about the appearance of the modifications, valuing their homes as practical and functional places.

#### *Independence and freedom*

Regaining or maintaining independence and freedom in the home was a valued outcome for participants. To be able to do things for one self, to choose activities freely, to move from room to room and to come and go as one pleases was extremely important to participants.

A number of clients spoke of the freedom they now enjoyed in being able to have a shower when they choose and not having to ensure their spouse or a family member was present.

In the bathroom, as I said, back to independence and being able to do things myself. (Linda client, 66)



The freedom experienced at home was negatively impacted or not restored for a small number of participants. One participants' autonomy was not improved, as she was not provided with modifications that enabled her to access her garden and outdoor area.

I miss even being able to take my washing and hang it out myself ... I can go out to the little balcony but it's not the same as pottering outside and pulling a weed or cutting a flower or something, I miss that. (Judy, client, 48)

Others wished that they had more control over the home modification process, frustrated by service provider's restrictions and guidelines on the type, location and details of the modifications allowed.

### Occupational dimension

Participants spoke often of modifications making everyday life easier, that they were able to live in their home without effort. This was the most commonly reported outcome by participants and incorporated a variety of activities and roles performed in the home. It was easier to move around and access the home, to do everyday activities like showering, toileting, laundry and to care for children and family members.

Well they made it easier for me, I mean as far as how the stroke affected me, it just changed my life dramatically. So anything that makes life easier such as the lift, just helps me get through each day without a lot of effort and pain. (Betty, client, 58)

Modifications also maintained or restored participation in valued occupations at home such as gardening, cooking, social activities and work. This enabled participation in valued roles, for example, a parent being able to cook for his children. When talking about the modification of his bathroom and kitchen one participant described his enhanced role as a worker as a result of modifications.

I can actually not only invite visitors in now, I can actually invite clients in too and that's another level again and that's what I've been going for, is to be able to invite clients and that's why I needed that separation, that's why I needed it not to look like a hospital. (Matt, client, 48)

The role of carer and the activities of carers also became easier as a result of the modifications. Participants spoke of less physical demand and strain on them, and decreased risk of injuries.

It has saved my back. I haven't had a serious back injury yet and I think it is because I'm doing less of that lifting and also Jack is getting bigger so the timing was really good. (Kate, parent, 40)

Although the changes to the home as a place of occupation were overwhelmingly positive there were some participants who reported negative outcomes. Everyday activities in the home became more difficult. For example, one participant was unable to access a new sink to brush his teeth, and for a number of participants cleaning was made more difficult. For example, non-slip tiles and ramps were reported to be hard to keep clean.

### Physical dimension

The physical dimension of home, in particular the ambience of the home, was described by participants to be more often negatively impacted by modifications than positively. A number of participants who had water powered lifts or new landings and stairs installed, reported that they had installed their own roofing or awning to combat the rain and sun for these areas.

Those stairs are pretty solid and the landing's very good. But I had the awning put over it later. Because it sort of meant that the rain doesn't come in any more. (Eveyn, client, 87)

Other participants described that it was difficult to keep warm in their bathroom because it had been modified to an open plan design.

### Temporal dimension

The future was an important outcome for participants, previous to modifications some struggled with the choice to modify or move to somewhere more appropriate. However, once the decision was made to modify and the modifications were completed, there was an enhanced sense of permanency for participants, that this home was now a home for life. This was a result of the time, money and energy invested along with the modifications providing for peoples future needs. Participants described a future in their homes, where ageing, deteriorating or improving health or the growth of children was accommodated for.

It's good now that I've got the shower and its wide enough that if ever I needed to put a wheelchair in there, its big enough for that. (Faye, client, 80)

Some participants also felt that the future resale value of their home had been improved by the enhanced appearance and quality of the modification.

### Social dimension

Aspects of the social dimension of home, relationships, others in the home and social activities which occur in the home were less often reported to be impacted than other dimensions. However, they were only reported to be affected by the modifications in a positive way. A welcome but unexpected benefit for participants was the value of the modifications to others in the home and

visitors, with the modifications being utilised by family and guests.

I have a granddaughter who is in a wheelchair and she came and stayed with me for a fortnight and she found she coped well. She said 'Your bathroom's terrific, Nana'. (Evelyn, client, 87)

Some participants also felt that the modifications had changed their engagement in social activities, that they were now able to have friends visit or were able to access the neighbourhood and community.

Yeah well you see, you were locked onto the patio and that's as far as you could go. Now I can go down the ramp and sticky beak (look) around the neighbourhood. It's surprising the number of people, when they are walking past and sing out 'Hello' which is good. (Keith, client, 80)

## The experience of the home modification process

### *Builder and workmanship*

Participants who were most happy with their modifications, more often than not had a positive experience of their builder. A builder, who was respectful in their home, clean, took care to involve them in the process and listened to their needs, was highly valued by participants. For example, when a ramp was installed to the front of her home one participant was delighted that her builder was able to keep a native bee hive which had been on her porch for years. Almost all of the clients who reported positive experiences of their builders were clients of the community home modification service. In this service occupational therapists had close contact with the builders and used the same builders consistently rather than contractors.

The poor workmanship of builders and/or their disrespectful presence in the home contributed to negative experiences of the home modification process. Poor workmanship resulted in modifications that were messily completed, de-valuing participants' need for a comfortable aesthetically pleasing home, and in the most concerning circumstances caused safety hazards.

They had to come out and redo that (toilet grabrail) because I felt unsafe getting up off the loo, and it was just wobbly and apparently according to the occupational therapist, they didn't find the studs in the wall properly. (Sarah, client, 46)

The service sent over a chippie (carpenter) to supposedly secure the lock on the door. It was badly fitted it fell off the next day, and he accused me of breaking it. (Rodger, client, 54)

He abused Rodger something chronic. (Rodger's spouse, 48)

### *Decision-making and consultation*

Another factor that strongly contributed to a positive experience was involvement in decision-making and consultation throughout the home modification process. As one participant describes:

Yeah there was consultation, which I'm pleased to see has happened. For us personally it's the assurance that we can communicate my own personal requirements to meet the needs and just make you feel a little bit more secure and that you've been included. Because this is where I live, we live, and it just makes you feel like you're actually involved and that's very comforting. (Rodger, client, 54)

However, a poor consultation experience contributed to a negative experience of the home modification process. There was little involvement in decision-making for some participants, a few were simply told what they would be receiving or it was just installed. One participant described how a lack of consultation resulted in her back stairs being installed at a location which did not consider the use of her home.

See I wanted to put the steps down that way, but no they just completely removed those steps, even the builders said it would have been so much easier just to run the steps down from the patio and then we would have cover when we came home you know, somewhere to put our things down until we got inside. Couldn't tell them, they knew better. (Rhonda, client, 71)

### *Societal dimension*

The final theme which strongly influenced the home modification process and its outcomes was the societal dimension. This included themes such as the Australian standards for public access (building codes for publicly accessible buildings) and service provider's restrictions, or budgets, standard procedures and guidelines. Due to these limitations, some participants were unable to restore their home to a level which they felt was acceptable. Standard guidelines and budgets of services resulted in what participants felt were unfinished work, with missing towel rails, unpainted areas, and lifts and ramps needing awnings.

For Judy, limited space and the requirements of access standards left her unable to access her yard and garden as a ramp was unable to be installed. She had installed her own ramp which appeared to be quite unsafe and which she used infrequently as she required assistance and it was difficult to use. Another participant describes his struggle with occupational therapists

and architects to design something that was not conventionally completed, outside of the Australian access standards, and standard procedures of the service. On the day of the work he asked builders to change the design to avoid the hassle of working with the service.

The design process was difficult with them. It took a long, long, long time, like over a year just because every six weeks you'd meet and half the stuff that we'd talked about wasn't there and there was stuff there that we didn't talk about. In the end I just said 'yep that's right' and then said to the builder 'look, these last few bits aren't right. Please fix them on the job'. (Matt, client, 48)

## Discussion

The five dimensions of home identified in the literature review were supported by the findings, with all the dimensions being impacted by modifications. However, the dimensions are interconnected, with the findings showing a rich tapestry of the dimensions and their influence on each other which contribute to the experience of home. For example, enhanced freedom (personal dimension) leading to easier activity completion (occupational dimension) and access standards (societal dimension) preventing a ramp being installed leading to reduced freedom and access to meaningful occupations.

The aims of modifications, namely to improve occupational performance and safety in the home, are being met, with most participants reporting increased safety and an ease in the ability to perform everyday tasks. This is consistent with studies reporting a reduction in fear, accidents and injuries (Heywood, 2004, 2005; Tanner *et al.*, 2008) and decreased difficulty in everyday activities (Petersson *et al.*, 2009; Stark & Keglovits, 2012). However, there was a large number of negative impacts on the experience of home, with modifications left unfinished, unsafe or not suitable to the client's needs.

The physical dimension was most often described in relation to negative changes to the home. However, positive changes to the physical environment were possibly not discussed as this was the expected outcome of the home modifications, i.e. that there is an improvement in materials and finishes, and more space. The ambience of home has been described as including the weather, noise, temperature and lighting that affect the home (Sanford & Bruce, 2010). These factors appear to be an important consideration for modifications such as stair lifts, hydraulic lift/elevators and ramps, which need to be protected from the rain, wind and heat of the sun for use.

A new dimension, the societal dimension emerged from the findings reflecting the societal influences on the experience of home and home modification provi-

sion. The pervasive influence of this dimension has been described elsewhere. In a Swedish study, older adults described difficulties with the home modification system, where standards, a lack of consultation and limited information provision from service providers resulted in unsatisfactory outcomes (Johansson, Borell & Lilja, 2009).

The societal dimension was responsible for many of the negative outcomes found in this study and as discussed in Aplin *et al.* (2013) highly influences home modification decision-making. The Australian public access standards were a particularly restricting contribution to the design of modifications. These standards are not required to be used in private dwellings in Australia. They are primarily intended for public environments and their use in the home environment is often questioned as they are based on limited research and not representative of the population of people with a disability and older adults who use modifications (Ainsworth, de Jonge & Tanner, 2011; Imrie & Hall, 2001). Further, they do not accommodate for carers and have limited understanding of the complexity of person environment interactions (Imrie, 2006; Sanford, 2001). Further research is required to establish whether the current standards are suitable for differing populations and if not further standards need to be developed for older adults, people with disabilities of differing levels of function, and the consideration of carers.

The societal dimensions influence was also felt by those participants who thought their modifications reflected disability or looked 'like a hospital'. This dissatisfaction with the appearance of modifications has been reported elsewhere (Jones *et al.*, 2008). For home modification clients in Australia, there is little choice in grab rails and other modification products, restricting what can be achieved aesthetically. More importance needs to be placed on the appearance of the modification with a larger range of options being available to clients, as this directly impacts the identity of the client and family using the home and may result in the non-acceptance of modifications (Hawkins & Stewart, 2002; Nocon & Pleace, 1997).

The more positive experience of the community service clients is likely a result of the different systems and policies in place at each of the services. The government housing service whose clients had more negative experiences of the home modification process and outcomes, use contract builders who have little or no contact with the occupational therapists who prescribe the modifications. This combined with the positive experiences of the community service clients of their builders, suggests a need for home modification services to aim for working partnerships between occupational therapists and builders where they can work collaboratively, develop respect for each-others knowledge and have opportunities for discussion regarding projects.

## Implications for occupational therapy practice

The negative outcomes which resulted from poor consultation processes and participants having little involvement in decision-making highlight the importance of client centred practice. This poor consultation during home modification assessment and planning has been reported elsewhere to result in negative outcomes and wasted resources where modifications were not even used (Heywood, 2005). A more collaborative approach is required by occupational therapists and home modification service providers, allowing clients more choice and control in modification products, materials and design so that their experience of home can be protected and enhanced during this disruptive process (Tanner *et al.*, 2008). For this to occur occupational therapists must have a deeper understanding of this unique and personal environment when providing interventions in the home (Dahlin-Ivanoff *et al.*, 2007; Heywood; de Jonge *et al.*, 2011; Tanner *et al.*). It is particularly important for therapists to understand aspects of the societal dimension which influence their work, such as eligibility criteria, access standards and the restrictions of their services as these may prevent them from considering the wider dimensions which contribute to their client's experience of home. When these aspects are in opposition to enhancing clients experience of home therapists may need to advocate for the other dimensions such as occupational or personal to be valued in the home modification process.

It is unclear which modifications are more likely to result in negative outcomes and future research investigating this and factors that contribute to this is required. The large number of negative impacts on participants' experience of home reveals a need to follow-up and measure home modification outcomes. Home modifications are installed with little or no follow-up (de Jonge, 2011a) and considering the unsafe outcomes found in this study, there is at the least an ethical responsibility to ensure no harm is caused. Routine evaluation of home modifications will not only ensure that interventions are effective and cause no harm, but will also create evidence for practice (de Jonge). The findings also suggest that traditional outcome measures focusing on occupational performance and safety are not adequate as it may not provide sufficient insight into the broader impacts of home modifications. The experience of home also needs to be seen as potentially being impacted by modifications.

## Limitations

The study was exploratory in nature, and although efforts were made to seek the perspectives of a variety of clients, participation was voluntary and people were primarily drawn from one metropolitan area in Australia. The results should therefore be viewed in the con-

text of the study and the nature of the participants. Further data from a variety of home modification clients and their family including younger adults and parents of children with a disability, differing geographical areas and clients who receive minor modifications would enhance the generalisability of the findings. The variety of participants however presents a deep understanding of the impact of home modifications on the experience of home.

## Conclusion

The findings add to a growing body of evidence which demonstrate that modifications affect the experience of home. The high numbers of negative outcomes illustrate the need for occupational therapists to understand what client's value about their home and intended modifications and for service providers to routinely evaluate home modifications. The findings of this study will be utilised in future research to develop a measurement instrument for home modification practice examining the dimensions of home.

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