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Home Modification Information Needs of Occupational Therapists Practicing in NSW

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Introduction

This research examined the home modification information needs of occupational therapists in New South Wales. Increasing numbers of people with disabilities and a growing trend toward making it possible for people with disabilities to remain in their homes have created a growing need for home modification services. Occupational therapists typically are responsible for determining what home modifications are appropriate. Indeed, government funding for home modifications is only available after an occupational therapist has made recommendations. Identifying therapists' home modification information needs is important so that the gaps in their knowledge may be filled. All participants in this study were occupational therapists practicing in New South Wales who devoted at least part of their practice to home modification.

1.1 Project Aims

This research sought information about the home modification needs of occupational therapists in New South Wales. "Information" includes facts told or heard or discovered (Hawkins, 1988), and "need" is the discrepancy or gap between current practice and best practice (Witkin & Altschuld, 1995).

This project aimed to gain information from practicing occupational therapists that would guide dissemination of information about home modification. Specifically, we aimed to:

- determine what home modification information occupational therapists need;
- learn how occupational therapists acquire information; and
- learn how occupational therapists' home modification knowledge affects the services they provide

1.2 Background

With increasing numbers of people with disabilities and rising costs of institutional care, home modification is an important alternative that permits many people with disabilities to remain in their own homes and function with a maximum degree of independence (Mann, Ottenbacher, Fraas, Tomit, & Granger, 1999; Stark, 2004). Occupational therapists play a key role in designing modifications and accessing home modification services, yet therapists may not have all of the information they need to provide the best home modification service. Therapists have identified several areas in which they believed they needed additional information (Bridge, 1994). The present study examines in greater depth the home modification information needs of occupational therapists, using the topic areas and interview techniques that Bridge and Martindale (2002) used to assess the home modification information needs of the Home Modification & Maintenance Service of New South Wales.

Due to demographic, economic and social change, there is a growing trend toward a community focus on health and a greater push to make it possible for older adults and people with disabilities to remain in their own homes and age in place (Wylde, 1998).

The incidence of reported disability in the Australian population increased from 13.2 percent in 1981 to 19.3 percent in 1998 (Davis, Beer, Gligora, & Thorn, 2004). Technological and medical advances have resulted in longer life-spans, with some people acquiring disabilities as they age and those with pre-existing disabilities living longer (Commonwealth Department of Family and Community Services, 2004). Due to the high cost of residential care, premature transition to residential care is not a viable long-term solution. National policy reflects the interest in enabling people to continue to live in their own homes. The National Strategy for an Ageing Australia (Commonwealth Department of Health and Ageing, 2001) and the Commonwealth

Disability Strategy (Commonwealth Department of Family and Community Services, 2004) recognised that older people and people with disabilities want to stay active, independent, and connected to the community. The Disability Services Act (1986) and the Disability Discrimination Act (1992) promote the autonomy of people with disabilities. The Home and Community Care Act (1985) established a variety of services for people with disabilities and frail aged people to enable them to remain in their own homes.

Home modifications change the home environment to allow individuals to function with maximum independence (Law, Cooper, Strong, Stewart, Rigby, & Letts, 1997). Common modifications include hobless showers for easy access, grab rails in the shower and toilet, access ramps, wider doorways, increased lighting, removal of mats to prevent falls, and assistive devices such as wheelchairs and shower chairs. The goals of home modifications are to make tasks easier, facilitate care giving, increase people's independence, improve safety, reduce the need for personal care services, and enable people to live in the place of their choice (Pynoos, Sanford & Rosenfelt, 2002; Hawkins & Stewart, 2002).

Home modifications also serve an injury-prevention function, which can contribute to a client's independence and defer costly institutionalisation. Fall prevention is of particular concern for older adults and people with disabilities because the risk of life-threatening injury and the risk of function loss are significant (Cumming, Thomas, Szonyi, Salkeld, O'Neil, Westbury, & Frampton, 1999; Smith & Widiatmoko, 1998; Tinetti & Speechly, 1989). For example, about 50% of older adults who sustain a hip fracture will never regain their pre-fall level of functioning; this often results in costly long-term institutionalisation (Tinetti & Speechly, 1989). Decreasing the risk of injury and subsequent hospital admissions by installing home modifications can reduce the overall cost of care (Gibson, Angus, Braddock, Fortune, Johnstone, Maddein, & Mason, 2001; Mann, et al., 1999). Preventive home modifications also can increase the level of safety people feel when performing daily tasks (Bridge, 1996). That feeling of safety increases confidence in performing tasks that clients previously avoided (Rogers, Holm & Stone, 1997).

Although a homeowner could make any modifications at his or her own expense, the Home and Community Care, Veterans Affairs and Department of Housing Home Modification Programs may subsidise or provide in full the cost of home modifications. These programs, however, require that the modifications be implemented in

accordance with an occupational therapist's recommendations (Home and Community Care Program, 1998; NSW Department of Housing, 2002). The Home Modification and Maintenance division of Home and Community Care funds and installs home modifications for the Home and Community Care population. No one can be excluded from the service due to inability to pay (Home and Community Care Program, 1998). There are three levels of Home and Community Care Home Modification services:

- Level 1 – Home modifications < \$5,000
- Level 2 – Between \$5,000 - \$20,000
- Level 3 - > \$20,000

Although State and Commonwealth funded, each Home Modification and Maintenance service is managed independently. The mandate of the New South Wales Department of Housing is to provide safe, decent and affordable housing for people on low incomes (NSW Department of Housing Home Page). If it is economically viable to do so, the Department will modify housing free of charge to suit people with disabilities or older adults (NSW Department of Housing, 2002). Department of Housing approval of modifications depends on the long-term value of the property, the cost of alternative approaches, the cost/benefit of relocating the tenant, and the priorities competing for funds (NSW Department of Housing, 2002).

Given the high cost of many modifications, occupational therapists must be able to justify clearly and describe precisely the recommended modifications. The cost of common modifications, such as bathroom renovations or access ramps, may exceed \$5,000, and sound justification is required before Department of Housing or Home and Community Care will approve funding. Clear justification is no less important if the client is to finance all or part of the modification. Similarly, the therapist must be able to specify the modification clearly so the trades people can properly install the therapist's designs. To adequately describe and justify recommended modifications, the occupational therapist must have the information necessary to design modifications for each particular client and the basic knowledge to guide information collection and modification design.

The accuracy and completeness of the information the occupational therapist obtains at each stage of the assessment process affects the suitability of the recommended modifications and the efficiency of the home modification process. Accurate and complete client referral data can help therapists to properly determine the urgency with which the client needs to be seen and the issues to be addressed during a home visit (Bridge, 1996). As stated by Rogers, Holm & Stone (1997), the home assessment may involve face-to-face interviews, a detailed examination of the home environment, observation of the client performing tasks, or a combination of all three (see Table 1). Based on those observations, the therapist will recommend environmental changes to maximise the client's independence, safety, and participation in light of the client's needs and wants (Pynoos, Tabbarah, Angelelli, & Demiere, 1998).

Table 1. Home Assessment Components

Data-Gathering Method	Purpose
Interview	Provide overall profile of the client's abilities Understand client's priorities in relation to task performance Target tasks requiring further in-depth evaluation
Observation of task performance	Assess the performance of components of tasks identified as being difficult for the client to perform Identify possible intervention strategies Ascertain whether a change in the environment would enable ease of task performance
Examination of the home environment	Assess for environmental hazards Suitability of environment for client Understanding of culture and values of client Assess structural and maintenance issues

If the therapist obtains complete and accurate information from the referral and the home assessment, and has a solid knowledge basis from which to analyse that information, he or she should be able to recommend and justify effective home modifications for the client.

There are instruments to help therapists collect pertinent home assessment data, but it is not clear that therapists are using the most valid and reliable instruments. Home assessment frameworks are structured guidelines that help therapists identify client needs and evaluate the home environment (Bridge & Martindale, 2002). Assessment frameworks generally come in the form of checklists that prompt the therapist to explore all areas of the client's physical environment and to consider the client's social and cultural perspective (Mitchell & Unsworth, 2004). A framework can help the therapist to problem-solve in a consistent and reliable way (Bridge & Martindale, 2002). Although several standardised assessment tools are available,¹ therapists more commonly use self-designed assessment instruments (Clemson, Roland, & Cumming, 1992; Corcoran & Gitlin, 1997). Because self-designed assessment instruments are not standardised or tested, their reliability and validity is open to question (Cooper, Cohen, & Hasselkus, 1991; Mitchell & Unsworth, 2004).

Even with an ideal home assessment framework, collaboration with the client in the decision-making process is pivotal to the success of home modifications (Law, Cooper, Strong, Stewart, Rigby, & Letts, 1997; Stark, 2004). Client motivation to learn and maintain a skill is higher when the client determines the goals and controls the way they are performed (Barnes, 1991). Collaboration permits the therapist to work with the client to establish goals that are realistic and meaningful to the client (Law, Cooper,

Strong, Stewart, Rigby, & Letts, 1997; Law, Polatajko, Pollock, McColl, Carswell, & Baptiste, 1994). The occupational therapist also should seek input from family members, carers, and other professionals who work closely with the client (Ford & Tonkin, 1994).

A therapist's basic knowledge and experience can affect his or her ability to collect necessary information and formulate appropriate recommendations. Table 2 sets out the relevant competencies documented by Ford & Tonkin (1994) expected of Occupational Therapists within the first few years of commencing Occupational Therapy practice.

Home Modification competencies relevant to Occupational Therapists

- | | |
|------|--|
| 1.4 | Respects the individuality and worth of each client within their environment |
| 1.5 | Establishes and maintains collaborative working arrangements with other disciplines |
| 2.2 | Assesses the occupational environment(s) of the individual or group |
| 3.3 | Prescribes specialised adaptive equipment and techniques |
| 3.5 | Provides consultation regarding modification to the workplace, home and leisure environments |
| 3.12 | Understands the role of the client's caregiver |
| 3.13 | Utilises available community resources and facilities |

In 1988 the NSW Occupational Therapy Association expressed concern that the undergraduate course did not prepare graduates to advise clients about environmental modifications (Bridge, 1996). To investigate occupational therapists' perceptions of their need for home modification information, In 1994, Bridge surveyed 29 occupational therapists and asked them to identify their home modification knowledge needs the results of this survey are displayed in Figure 1.

1 The Westmead Home Safety Inventory (Clemson, 1997) and the Safety Assessment of Function and the Environment for Rehabilitation (SAFER) (Oliver, Blathwayt, Brackley, & Tamaki, 1993) are examples of standardised home assessment frameworks.

Building on the information that Bridge (1994) acquired, the present study sought to gather more specific information about therapists' home modification knowledge needs. In the present study, therapists were interviewed about knowledge they gained through formal education and about their information needs in ten basic categories: requirements for meeting standards of care, spatial requirements, carer requirements, funding policies and options, building and land laws, product requirements, disability access components, natural environment, built environment, and requirements for community inclusion.

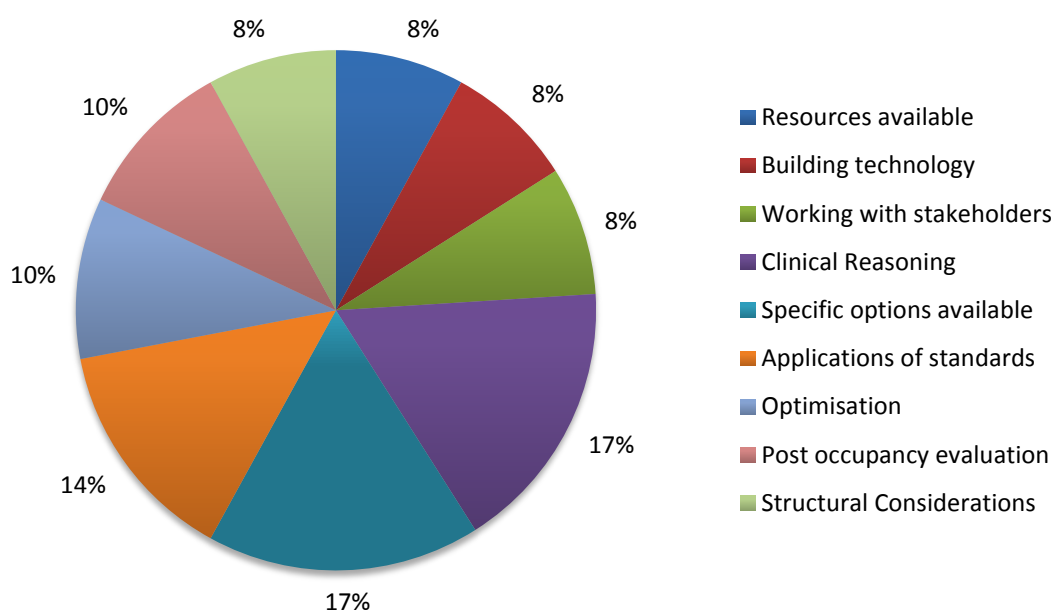


Figure 1. Knowledge needs identified by NSW occupational therapists circa 1994

2. Methodology

A three-phased needs assessment model (Witkin & Altschuld, 1995) was used to identify the information that participating therapists need regarding home modification. In Phase 1, six occupational therapists were observed in order to explore the needs of therapists involved in home modifications and to provide a better understanding of behaviours in context (Grbich, 1999; Emerson, 1981; Bogdewic, 1992). In Phase 2, nine therapists practicing in the area of home modifications across urban and rural New South Wales were interviewed. In Phase 3, the results were disseminated.

2.1 Phase 1: Exploration

Eighteen visits by six different occupational therapists were observed over a 3-week period comprising two weeks in two different urban settings and one week in one rural area. The purposes of the observations were to:

1. gain knowledge of occupational therapy roles and responsibilities in the area of home modifications for a range of client groups;

2. gain practical experience in home modifications;
3. observe and record occupational therapy interaction with clients, builders, home modification service providers, and co-workers; and
4. examine and document current practices to allow for comparison with in-depth interview transcripts and current literature.

Participating therapists ranged in experience with home modifications from 2 to 30 years. One of the therapists had trained overseas; some had practiced in other areas, such as mental health, before taking community positions and focusing on home modifications.

The observer could not take notes during home visits; however, notes were made immediately after each visit and expanded when recorded on computer at the end of each day. The notes were then coded according to the interview topic areas to allow for comparison to current literature and the in-depth interview results.

2.1 Phase 2: Data Collection

2.1.1 Sampling Frame

It was estimated that a sample of 8 to 10 participants for Phase 2 would provide sufficient information to identify key issues affecting the home modification occupational therapy practice (Llewellyn, Sullivan, & Minichiello, 1999). Interview participants were recruited using a purposeful random sampling method (Llewellyn, et al., 1999). Five rural and five urban occupational therapy departments were selected at random from 281 public and 162 private New South Wales hospitals listed in the Australian Yellow Pages on-line. One therapist was invited to participate from each department. If no occupational therapist was employed, or if the therapist or department declined participation, another hospital was selected at random until the sample was complete. A number of private occupational therapy companies also were contacted, but all declined to participate.

Five female² occupational therapists practicing in urban areas and four female occupational therapists practicing in rural areas across New South Wales participated in Phase 2. Participants had between 1 and 35 years' experience in home modifications and worked with a range of client groups including general hospital, spinal cord units, disability services, specific home modification services, and paediatric services. To be included in the study participants were required to:

- have completed an undergraduate occupational therapy degree;
- currently practice as an occupational therapist in New South Wales; and
- provide home modification services in their current employment

2.1.2 Interview Process

Therapists interested in participating in the study were sent an information package containing a letter of invitation explaining the study (Appendix A), an interview consent form (Appendix B), and an interview framework that outlined the topic areas to be discussed and examples of information within each topic area (Appendix C).

Table 3 lists, defines, and provides examples of each interview topic area. Interview times were scheduled through follow up telephone calls.

Table 2. List of topic areas, definitions and examples of topic areas

Topic Area	Definition	Explanatory examples
Spatial requirements	'Of, relating to, involving, or having the nature of spatial	Anthropometric measurements, turning space, front and rear
	data pertaining to the needs of people with disabilities'	access
Carer requirements	'Individual who attends or assists an individual to carry out daily self-care activities'	Parent, spouse, home care attendant, community nurse
Product requirements	'Information on building products that are bought or sold commercially'	Walls, tiles, doors, vanities
Requirements for community inclusion	'Information strategies used to involve clients in the community'	Ageing in place policy, community services, respite care
Requirements for meeting standards of care	'Established procedure to be followed in carrying out a given home modification'	Occupational Health & Safety, duty of care, documentation
Disability access components	'Products fabricated especially for use by people with disabilities'	Grab rails, chair raisers, slip-resistant paint, hand-held showers
Funding policy	'All decisions, policies, and sums of money or resources set aside for a specific purpose'	Home and Community Care funding, Department of Housing
Building and land regulation	'Principles and laws designed to control and influence building construction'	Building Code of Australia, NSW Home Building Act

Topic Area	Definition	Explanatory examples
Natural environment	'Natural environment surrounding client's home'	Terrain, air, weather, location
Built environment	'Basic soundness of housing structures'	Maintenance of house and structure
Education	'Knowledge gained through formal study'	Undergraduate degree, post-graduate study, courses

2.1.3 Interview Schedule

A semi-structured interview framework was used to elicit information about home modification knowledge needs (Kaufman, 1994). Each interview consisted of three phases: introduction, semi-structured section, and conclusion. The introduction included nonessential questions to develop rapport (Berg, 1989). The semi-structured portion of the interview comprised the 11 pre-determined topic areas described in Table 3 (Bridge & Martindale, 2002). The conclusion stage of the interviews provided an opportunity to summarise and clarify issues discussed throughout the interview and to tell participants how the data would be used and when the transcript would be provided for endorsement.

During the interviews, participants were invited to give their perspectives on each topic. When necessary, the interviewer used pre-determined open-ended questions to gain more specific information and to clarify meaning. See Table 4. The interviewer also used probing questions to elicit further information after participants' initial statements (Berg, 1989). Examples of probing questions include "What does that involve?", "How do you cope with that?" and "What do you do in those instances?"

Topic Area	Example of open ended question
Spatial requirements	What do you look for when assessing a client?
Carer requirements	How do you consider carers when prescribing home mods?
Product requirements	How do you find out about new products?
Requirements for community inclusion	How do clients find out about your service?
Requirements for meeting standards of care	Do you follow any standard guidelines when prescribing home modifications?

Topic Area	Example of open ended question
Disability access components	What do you consider to be access barriers?
Funding policy	What funding options do you access for clients?
Building and land regulation	What is the process for obtaining council approval for home modifications in your area?
Natural environment	What do you assess differently in urban/rural areas?
Built environment	What are the processes you follow if you are unsure about the suitability of the structure for home modifications?
Education	How have you further developed your home modification skills?

All interviews were recorded on audiotape (Witkin & Altschud, 1995), and the interviewer took notes. Tape transcripts were sent to participants, who were given the opportunity to alter the transcripts (Minichiello, Fulton, & Sullivan, 1999).

After the participants returned the transcript and any changes were incorporated, the transcripts were coded for analysis. Each of the 11 topic areas was divided into themes and sub-themes, and each theme and sub-theme was assigned an alphabetical code. Each transcript was then coded according to its themes and sub-themes. Finally, quotations from the transcripts were grouped in a separate document by theme or sub-theme to create a quotation bank. The quotation bank was used during the analysis to determine the relationships between participants' responses and to identify the emerging premises of the interview data. The results of the interview analysis were compared with information obtained from the literature and participant observations.

2.1.4 Theoretical Sensitivity

Although the interview framework was shown to be effective in other studies (Cruickshank & Bridge, 2004; Bridge & Martindale, 2002), a pilot interview was necessary to determine its suitability for obtaining information from occupational therapists. The pilot interview was carried out with a therapist who met the study criteria and who had extensive knowledge and training in the area of home modifications. Although no changes were necessary to the semi-structured interview guide, the pilot did highlight the need for more open-ended questions, prompts, and probes. Relevant changes were made to questioning before proceeding with the interviews.

2.2 Phase 3: Dissemination

During the final stage of the research, each participant received a copy of the thesis and information about the Home Modification and Maintenance Information Clearinghouse website, and each was invited to provide feedback.

3. Thematic analysis

The results of this study indicate that occupational therapists require more information about 8 of the 10 topic areas: spatial requirements, carer requirements, requirements for meeting standards of care, disability access components, funding policies and options, building and land regulation, natural environment, and requirements for community inclusion. Therapists knew of many sources of product information, but time constraints limited their use of some sources. All participants acknowledged the importance of involving building professionals to assess structural integrity and to help plan major modifications, and they used various techniques to accomplish that consultation. Participating therapists commented on changes in education and supervision that might help to close the gap between information they have and information they need to provide the best possible home modification service. Finally, participants discussed the impact of staffing on services and the importance of communication with various home modification service providers.

3.1 Spatial requirements

Spatial requirements include anthropometric measurements, such as range of motion and reach capabilities, and environmental measurements, such as the necessary turning space in the home for a wheelchair. The Australian Standards for Accessibility provide useful guidance for the therapist who is assessing spatial requirements, but they are based on a generic template, and do not apply to private homes (Bridge, 1996). Sometimes the Standards may not be appropriate for a private home because of structural limitations (e.g., the bathroom is too small) or because they do not meet the client's individual requirements. Even then, however, the Standards can guide the clinical reasoning process, allowing the therapist to assess the reasons why the modifications cannot be designed to Standard specifications and to rationally develop alternatives.

The results indicate that therapists require information about the importance of individual anthropometric measurements, the Australian Standards, and the importance of providing scaled drawings to service providers and tradespeople. Although client collaboration should be a key component of the assessment process, the results indicate that therapists may not always involve clients in decision-making. Finally, the results suggest that the assessment process, from referral through home assessment, could be modified to enhance consistency and objectivity.

3.1.1 Client-Specific Measurements

All therapists participating in this study discussed the need to take spatial measurements of the home when recommending modifications, but only a few mentioned individual client measurements. Many participants acknowledged that it is not always possible to have the client present during a home assessment; some were able to compensate for the client's absence by taking individual setting.

Three participants who specialised in paediatrics emphasised some of the differences between assessing children and adults for home modifications. Paediatric therapists need to plan modifications that children can use immediately and in their teenage and adult years. For example, if the child uses a wheelchair, modifications should accommodate the size of the chair and the turning space that can be expected when the child reaches adulthood.

“It involves quite a bit of creative playing around to meet the Australian Standards but we really try to meet them because it's a long-term plan for these families. So even though you might be doing the modification when they are seven, you have to keep in mind that they are probably still going to be using it when they are 50.” (6)

3.1.2 Australian Standards

Therapists varied in their use of the Australian Building Standards. Therapists with more clinical experience stated that they used the Standards regularly as a guide to practice.

We use the Australian Standards all the time; we have all the copies you could possibly have, the latest standards, particularly things like waterproofing, electricity, and all those types of things.” (2)

In contrast, over half of the therapists, including two new graduates, discussed their difficulties in interpreting the Standards.

Therapists accustomed to working with the Standards recognised that it may not always be possible or appropriate to modify a private home to comply with the Standards because of structural limitations:

“Many times I've had to modify places and they don't and they never will be to AS because of the structural limitations, like you just have a bathroom that is way too small.” (1)

Even though the Standards don't typically apply to private homes, several participants discussed the importance of documenting their clinical reasoning processes when recommending modifications that depart from the Standards:

We don't do things necessarily to the Standard because we're working in a private home and not a public building; but as long as we have the clinical reason that explains why we've done it to that standard, then that's fine.” (2)

A few therapists expressed concern that builders, both those connected with the Home Modification and Maintenance Service and private contractors, did not always follow

the Australian Standards or the occupational therapist's recommendations. For example:

Our builders do, but lots of other builders don't. Lots of other builders haven't heard of the access standards and so on. They might have heard of the waterproofing and the electricity, but some of them aren't working to that either.

3.1.3 Scaled Drawings

Response was divided regarding the responsibility to provide scaled drawings for proposed modifications. Home Modification and Maintenance Services in New South Wales expect occupational therapists to provide all spatial data, including drawings (Bridge & Martindale, 2002). While all participants reported that they faxed a report, complete with diagrams, to the Home Modification and Maintenance Service, there were significant differences in the level of detail provided in the diagrams. As one therapist pointed out:

If it was straightforward, so just a few rails and things, we would do the home visit, come back and write up our report and draw our scaled diagrams. (5) For minor modifications we might even tend to do it without even a ruler and do a quick sketch and that's acceptable. (3)

3.1.4 Carer requirements

Information from carers also is essential to the formation of effective home modification recommendations, and involving carers in the decision-making process may increase the likelihood that the modifications will be approved. The carer has a unique perspective on the client's needs and abilities and may be able to provide useful information about proposed modifications. Moreover, one goal of home modification is to make it easier for carers to provide care (Pynoos, et al., 2002), and their input can help meet that goal. Finally, carers may control decision-making or finances for the client (Luker & Chalmers, 1989), and carers who have been involved in the assessment process may be more likely to approve recommended modifications.

Interview results indicate that occupational therapists obtain carer information, but therapists not working in paediatrics do not routinely involve carers in the decision-making process. Paediatric therapists must include the child's parents or guardians because they will make the decisions regarding home modifications. All three participating paediatric therapists included the family in the decision-making process. Two paediatric therapists did this by using cut-outs that the family could move around an area to determine which lay-out would best fit the family and the child with the disability. Other practices included taking families to the Independent Living Centre NSW where there is a bathroom and kitchen display or showing them pictures of completed modifications from brochures or the Internet. Therapists reported a wide range of responses from carers to their proposed home modifications.

3.1.5 Product requirements

Therapists need to be familiar with available products in order to design effective and desirable solutions for their clients. One of the major reasons clients refuse to implement home modifications is that they do not want their home to look 'disabled' (Taira, 1984; Mann, Hurren, Tomita & Karuza, 1993). A therapist who has current and comprehensive product information may be able to allay those concerns. Moreover, Home Modification and Maintenance Services routinely rely on the occupational therapist to provide updated product information and to specify where to obtain special order products.

Participants were aware of many sources of product information, but may need more time to stay up to date. Occupational therapists use a variety of sources to obtain information about available building products (see Figure 3).

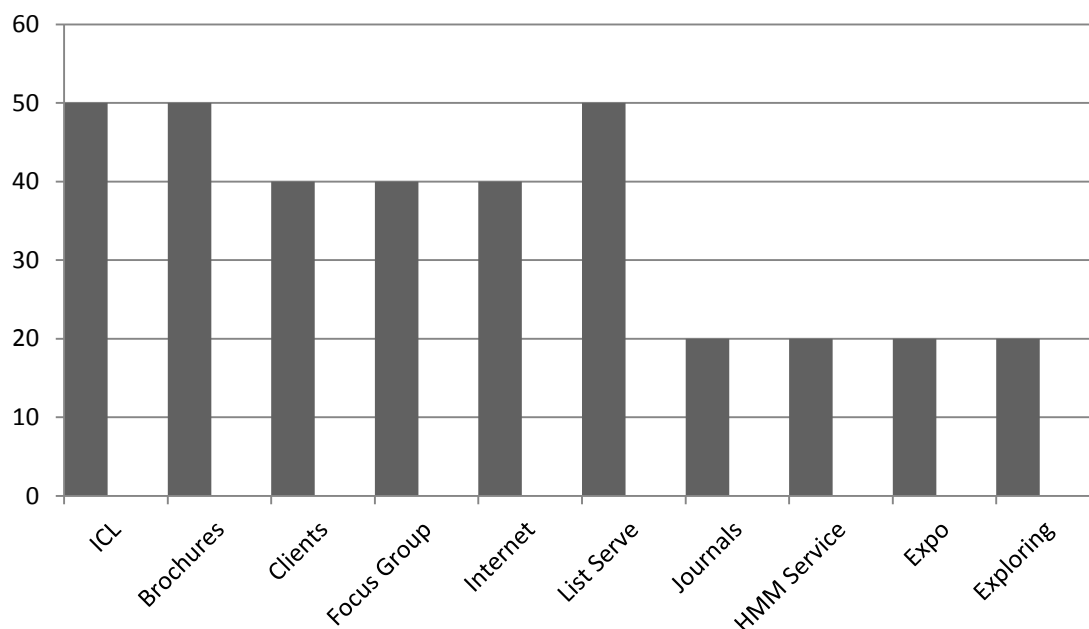


Figure 2. Sources of Product Information used by Participants

One of the most common sources of product information for occupational therapists is the Independent Living Centre (ILC) NSW. Therapists mentioned using the ILC catalogue, ILC staff and the ILC website to source and price products. Occupational therapists also received brochures by mail from local and national equipment companies. In contrast, only two therapists mentioned having regular contact with sales representatives who provided information about new products.

Interestingly, most therapists also discussed receiving input from clients or family members who had sourced new products. The Internet is a valuable resource for product information, and over half of the participants participated in list serves. Therapists most commonly mentioned the University of Queensland home modification list serve. Only two participants received information from their local Home Modification and Maintenance Service and builders, and these therapists had developed a positive

working relationship with the coordinators and builders of the Home Modification and Maintenance Service. Due to time constraints, attendance at disability expos usually was limited to once every couple of years.

3.2 Requirements for community inclusion

Community services can complement home modifications to maximise client independence (Trickey, Maltais, Gosselin & Robitaille, 1990). Most community councils offer a range of services for older adults and people with disabilities, such as meals on wheels, transport services, neighbour aid programs, household cleaning assistance, and garden maintenance assistance. Home nursing and respite services often are available to carers (Australian Institute of Health & Welfare, 2004; Opacich, 1997). A therapist who is familiar with available services will be better able to provide comprehensive services to his or her client.

The results indicate that therapists appear to need more information about the nature and importance of community services. Only half of the therapists interviewed discussed the need to educate clients about available services.

3.2.1 Requirements for meeting standards of care

Most legal cases against health professionals are based on the claim that the professional breached his or her duty of care. Health professionals have a duty to exercise reasonable care to avoid foreseeable risks (Creyke & Weeks, 1985). To prevail in a case against a health professional, the claimant must show that the professional's breach of duty caused injury or loss. Standards of care help to define what care is reasonable and what risk is foreseeable. Occupational therapy standards of care include, for example, the basic competencies expected of new graduates, the occupational therapy code of ethics, documentation requirements, and occupational health and safety considerations. Sound basic knowledge, effective information-gathering skills, and good clinical reasoning are essential to the exercise of reasonable care to avoid foreseeable risks. When a client is injured because a therapist prescribed an unsuitable modification, failed to prescribe a needed modification, or failed to train the client to use a modification, the client may sue the therapist for compensation. While professional liability insurance can protect an occupational therapist's financial resources against such claims (Creyke & Weeks, 1985), prevention of such claims is better for all concerned.

The results indicate that most participants took a proactive approach to assessments in that they considered modifications for injury prevention and modifications that would accommodate a client's changing needs. Injury prevention often arose in the context of elderly clients or clients with progressive illnesses:

“If they were elderly and they had had a fall and they had other medical problems then you might think that they're not getting any younger and it might be beneficial for you to have an extra rail there and it saves you having to do it later.” (5)

A few therapists outlined the special difficulties that arise in discussing modifications for clients whose function is going to decline as a result of their illness. For example:

“Sometimes families have difficulty in coping with that because I suppose the reality of it is that [they] see someone who is . . . able to walk, [and wonder] why are you talking about wheelchair access.” (7)

Therapists noted that discussing the need for modifications while the client is still functioning independently can prepare the client and his or her family to deal with loss of function by making them aware of modifications, equipment and services that are available. In addition, major home modifications involve structural changes to the house and require time to plan for financially and to install.

Conversely, several therapists mentioned difficulties experienced when the client perceived a need for modifications that the therapist determined were not necessary. For example:

“We find as far as things like ramps go we have often told people that it’s not appropriate and they will go and demand that it happens anyway.” (5)

“In most cases they don’t actually need a ramp. They are actually asking because someone has said you should have a ramp instead of steps. But they are actually quite mobile and are quite able to manage steps.” (3)

A therapist’s duty to provide reasonable care to avoid foreseeable risk often presents challenges when a therapist is confronted with a client who is reluctant to follow recommendations. Participants identified many ways to help clients make informed choices about home modifications. While most understood the importance of documentation when a client declined to follow recommendations, therapists may need more information about what their duty of care requires when a client ultimately decides not to implement recommended home modifications.

Participants identified various reasons that clients refuse or are reluctant to implement recommended home modifications. Cost was a major factor in clients’ refusal or reluctance to install home modifications. Clients also refused modifications because they perceived a stigma attached to home modifications; others thought that home modifications were unappealing and could make the home look like a hospital; some feared that modifications would devalue the home. For therapists working in paediatrics, the most common reason for refusal of modifications was that parents or guardians found it difficult to emotionally acknowledge their child’s disability.

As cost is a major reason for client reluctance, it is not surprising that clients may agree to the modification, but want to have a friend install it or to substitute a generic item for a costly specialised assistive device. All participants recognised the right of clients to install modifications themselves or to hire non-professionals at their own expense. All participants emphasised that improper installation can pose a safety risk for clients. One therapist outlined her concern:

“They try and substitute by saying ‘I’ll put the rail in myself or I’ll get the garden chair from out the back and use that’ instead of getting a shower chair. We try and negotiate that with them but often they take the recommendations and say ‘we’ll organise it’ and that concerns me” (5)

Participants stressed the importance of insuring that clients made informed choices about professional installation and specialised assistive devices. Therapists advised that, in order to protect themselves from legal action, they should inform the client of the potential safety problems with lay installation or generic devices, provide information on the Home Modification and Maintenance Service, and document discussion in client files.

There were many ways in which therapists dealt with clients’ reluctance to install home modifications. Most therapists mentioned the need to involve the client in the decision-making process; however, the ways in which therapists did this differed significantly. Three involved clients in the drawing up of plans. Others provided opportunities for clients to view modifications by showing photos of completed modifications from the Internet or from previous clients or by taking clients to view completed modifications in other settings:

“One thing we have done is taken clients out to visit ex-clients so they can have a look because some of our clients have an image that a wheelchair-accessible home looks different but are quite surprised when they visit [another] client’s home.” (8)

Most therapists noted the importance of patience with reluctant clients. Clients and families who are initially reluctant may come to accept the need for modifications after they have had time to think it over. Another noted that some clients will install the minimum modifications and, when they have experienced a number of functional benefits, they are then willing to have the other modifications installed.

“I’ll have somebody who has found the rail so wonderful and they’ve since been able to think and contemplate what I’ve talked to them about weeks prior and thought that would be good to then have a rail in the shower”(9)

The responding therapists differed in their perceptions of their duty of care in the face of clients’ ultimate refusal to follow recommendations. Occupational therapists could benefit from additional information about this challenging situation. Most participants stated that, from a legal standpoint, it was sufficient to document recommendations and the client’s refusal in the client’s file:

“As long as you document exactly what happened and if you are making a recommendation and they are saying no, then you write your recommendation and state that patient refused the service and there is much else you can do.” (4)

One therapist, however, went a step further and stated that she believed that she had a professional responsibility to make the client as safe as possible in performing the activity that the client wanted to do. She gave the example of a terminally-ill client who continued to use the bath even though the therapist had advised the client not to do so

for safety reasons. The therapist sought legal advice regarding her duty of care and explained

"I do the right thing by advising her the safest measure, she makes the decision not to do that and I would tell her my reasons of course and then look at other options...but ultimately if someone is going to refuse then I consider then what is the safest way to do what she wants to do". (1)

3.2.2 Disability access components

Therapists should be familiar with the functions of products made especially for people with disabilities, include clients in the decision-making process, and train clients how to use devices in the settings in which they will be used. These may be items installed in the home (such as grab rails and visual signalling devices) or assistive devices (such as wheelchairs, walkers, and shower chairs). Such products can be critical components in restoring occupational performance and preventing further functional decline. The major purpose of assistive devices is to minimise the mismatch between the client's ability and the demands of his or her environment (Trefler & Hobson, 1997). The most common reasons for non-use of such aids are the unsuitability of the aid, client rejection of the aid due to associated stigma, and client claims that the device is too complicated (Haworth & Hopkins, 1980). Research has shown that training by the occupational therapist increases the client's use of the device. In many cases, therapists train clients to use prescribed devices in the hospital; however, clients often have difficulty adapting the hospital-based training to their home environments (Trefler & Hobson, 1997). At least some training should occur in the setting in which the client will use the device. A knowledgeable therapist will be able to work with the client to prescribe appropriate products and properly instruct the client in their use.

The results suggest that occupational therapists need more information about disability access components, particularly the importance of trialling devices in the client's home. One participant explained:

If trialled in the home, the same wheelchair may still have been the most suitable; however, the necessary home modifications could have begun immediately. Because that did not happen, the client had to wait one year for the wheelchair, three months for a visit from the community occupational therapist and an additional eight months for the home modifications to be completed. The prescribing therapist's lack of knowledge about the client's home environment resulted in poor clinical reasoning and significant delays for the client.

3.3 Funding policy

A good understanding of funding policies and options is essential to a complete home modification practice. While subsidies are available through the Home and Community Care program, non-uniform fee policies across New South Wales make it difficult to advise clients about Home and Community Care funding policies and options (Bridge & Martindale, 2002). To fully advise clients about the cost of home modifications, therapists need to understand a variety of funding and payment options.

Although participants identified cost as a major consideration for clients deciding whether to install the recommended home modifications, some participants lacked even basic knowledge about funding policies and options. Most participants knew of the different Home and Community Care home modification levels and their funding caps; a few, however, lacked even this basic information. Only about half the therapists interviewed had a good understanding of the financial contribution required by clients who were receiving modifications through the Home Modification and Maintenance Service. These were therapists who experienced good relationships with their local Home Modification and Maintenance Service. Some clients may be able to afford their share of the cost if they are allowed time to pay, but only about half of the participants mentioned the option of allowing clients to pay for modifications, interest free, over two years. In general, therapists with more experience in the area of home modifications had an in-depth knowledge of funding options.

Therapists also should be aware of alternative sources of financial assistance. For example, only two participants mentioned contingency funding from the State Government. One therapist described this process:

“If we have to fund it then it goes to the management committee to ask for funding and the management committee would then approve that. If we didn’t have the money we would ask for contingency funding from the State Government. At the end of the year there is often money that is not used by other services that goes back into the pool.” (2)

Other alternate funding sources participants mentioned included trust funds, community care packages, Legacy, and the Department of Veterans Affairs. Some therapists also mentioned community organisations such as Rotary or Lions Club, but reported that it is often difficult to secure funding from these organisations. There appears to be more community funding available for children than for adults. Paediatric therapists reported higher levels of cooperation from local charities than did therapists working with adult clients.

“We’ve got quite a good area of local charities that are more than willing to help kids. ... The local Lions Club and those types of things will provide assistance with funding for these types of things and they have been happy to provide it.” (6)

Because cost is a key cause of client reluctance to implement home modifications, therapists need to understand funding policies and alternatives. While the results indicate some therapists are well-equipped with such knowledge, others need much more information to effectively advise clients.

3.4 Building and land regulation

The Building Code of Australia (BCA) and the New South Wales Home Building Act (Bridge & Martindale, 2002) contain information relevant to a home modification practice. Although the BCA applies only to public buildings, it contains many accommodations with which builders are familiar and that may provide useful guidance for private home modifications. Examples include access accommodations (e.g., ramps, door openings, and landings for wheelchair access) and circulation accommodations (e.g., turning space, lifts, tactile indicators, and audible and visual signalling devices). The New South Wales Home Building Act (1989) may apply to many home modifications. It requires a written contract for any work over \$1,000 performed by a builder or tradesperson. The contract must include, among other things, a sufficient description of the work to which the contract relates and any plans and specifications for the work (New South Wales Home Building Act of 1989, Section 7). While occupational therapists are not legal advisers, they can help clients by informing them that a written contract is or may be required. The contract requirement also highlights the importance of clear and precise written specifications, as the therapist's written specifications may be incorporated into the contract.

The results indicate that therapists require more information about building and land regulation. When asked about this topic, most therapists expressed frustration because major modifications were not always installed according to the therapists' recommendations. None of the therapists, however, mentioned that the Home Building Act's contract requirement.

3.5 Natural environment

The natural environment includes terrain, air quality, weather and location of the client's home (Cruickshank, 2003). It influences the types of modifications recommended, the materials used to construct those modifications, and whether assistive devices can be used outside (Bridge & Martindale, 2002). For example, due to limited space in an urban area, a chair lift rather than a ramp may be necessary to provide wheelchair access. To provide effective home modification recommendations, an occupational therapist should understand the implications of the natural environment at a client's home.

The results suggest that occupational therapists gain knowledge about the importance of the natural environment by experience. Experienced participants mentioned that they considered the natural environment when formulating recommendations for home modifications, but newly graduated therapists did not discuss natural environment during the interview.

3.6 Built environment

The basic soundness and structure of the client's home are important because they may make it impossible to install certain modifications. Therapists are not trained to evaluate the structure of a building, but may undertake a joint home assessment with

the Home Modification and Maintenance Service, Department of Housing technical officer, or builder/tradesperson. Experienced building professionals can evaluate the structural soundness of a property and determine whether spatial or structural limitations affect the kinds of modifications that are possible.

Many common modifications are major. Bathroom modifications were most commonly recommended by most of the participants. Major bathroom modifications usually involved replacing the existing bathroom with an accessible design, often requiring removal of the wall between the toilet and bath areas. Minor bathroom modifications included handheld showers; grab rails by the toilet or in the shower or bath; and slip-resistant coating on tiles. Access into and out of the home was the second most commonly prescribed modification. Access modifications ranged from handrails to ramps or lifts.

All participants recognised that major modifications require collaboration between the builder and the occupational therapist to determine how to meet the client's needs within the structural limitations of the home. For most therapists, consultation with the builder occurred on site, which allowed the client to be involved in the discussion. The primary purpose of such consultation was to determine the structural soundness of the property and to determine if the recommended modifications were suitable for the home. For example:

“If it's a major mod like kitchen, bathroom, converting the garage to a self-contained unit I will usually bring in one of the builders, tradespeople to help me identify any structural issues that I'm not aware of...” (9) “I will go with the builder and look at what the recommended drawings are and have the input of the builder as to whether it is possible or not possible.” (7)

While all therapists consulted with builders before recommending major modifications, the consultation process varied. The most common practice was for the therapist to conduct an initial assessment to determine the client's functional needs. Following that initial assessment, the therapist would meet with the builder at the client's home to discuss how to structurally implement the home modifications. The therapist then provided a report, including scaled diagrams, to the relevant home modification service. One participant obtained information from clients before the first home visit and, if major modifications were required, arranged to meet with the builder on site at the time of the first home visit. Another department faxed reports to the Home Modification and Maintenance Service or Department of Housing with the invitation to meet with the builder if required. Three participants mentioned that they regularly attached digital photos to the report to further clarify issues raised.

3.7 Other Education

The participants' comments about their education and their assessment of new graduates' information needs provide insights about training and supervision that may be helpful to educators and policy makers interested in closing the gap between needed and acquired information. Participants' comments confirmed the New South

Wales Occupational Therapy Association's concern that occupational therapists are not as prepared as they should be to advise clients about home modifications.

Therapists who supervised occupational therapy students on placement observed:

"I think every single one of them, and I know I certainly did when I was a student, felt that I didn't have enough knowledge on that area." (8)

"That's where our training needs to be as that we are able to make educated decisions and following the decision-making process which has some analytical base. I can see that in the students that come through and have pracs here and it is not coming through automatically." (3)

One therapist saw a need for more education about theory:

"I think there needs to be more training at the theory level as to understanding why you are recommending a rail versus a shower chair or what the whole mechanical advantage of having a rail next to the toilet is for example." (5)

Others emphasised the need for more practical skills training. For example:

"Most students on a one-to-one basis is very good for teaching home modifications because we are doing a lot of home visits and you get to do hands on because you can't really stand back and watch a home modifications occupational therapist. You feel obliged to hold the other end of the tape measure." (2)

The most common reason participants gave for their difficulty using the Australian Standards was that they did not learn to interpret and apply the Standards while at university:

"We would just be busy writing down that frame and writing down exactly what the whole standard is about instead of learning how to interpret what that meant and how you apply that to home modifications." (4)

Several participants viewed supervised practice as one way to improve understanding and performance with the Standards. For example:

"You can have the basic information and they can know about Australian Standards but they'd have to start applying them and using them and working with a client. I think they need that in a supervised environment." (1)

The most common methods participants used to acquire more information about home modifications were completing short courses in home modifications offered by the ILC, reading publications and journals, attending in-service presentations, discussing home modifications with builders, and receiving support from other therapists. Two therapists had completed the Graduate Diploma in Home Modifications offered by University of Sydney.

Given the many areas in which occupational therapists need additional information and experience, supervision is very important, particularly for recent graduates. All participating therapists recognised the need for supervision. For example, one commented:

“You are making recommendations not only for today but for 5 or 10 years down the track and that is hard to do. I think that having a good supervisor who has already had that experience can help guide a new therapist.” (1)

Unfortunately, participants did not always have ready access to an experienced supervisor. One of the new graduates involved in the study had accepted a position as a sole therapist in a rural area, someone from outside her area agreed to supervise her and she then reported experiencing difficulties when complex decisions had to be made quickly and her supervisor was unavailable.

3.7.1 Assessment Process

Although practicing therapists acknowledge the importance of conducting home assessments, there is no consensus on how these assessment information is used to prioritise caseloads; telephone interviews may help streamline the assessment process; and practicing therapists need more information about standardised home assessment frameworks and the risks of using untested frameworks.

Referrals, which typically may come from any source, are used to prioritise clients. Common referral sources include the client (self-referral), doctors, nurses, hospitals, special care units, Home and Community Care, and other service providers. One therapist, however, stated that her department requires a referral letter from a doctor or specialist:

“We have just recently changed our service policy at the hospital that outpatients now have to have a GP or a specialist referral to access the OT service. Just purely from a waiting list and a priority point of view” (5)

Telephone, fax or letters were the tools typical used for making referrals. One participant discussed her department’s involvement in a State Government initiated electronic referral program:

“We did participate in the electronic referral project. We didn’t find that very good because of the way that the system operated you couldn’t actually include a lot of useful information in the referral...We are very happy with our referral process and we haven’t had any problems with the old-fashioned methods.” (3)

After the department has prioritised referrals, the next step usually was a face-to-face interview with the client. One therapist, however, conducted telephone interviews before the initial home visit to gain extra information about the client’s situation and to discuss expectations for the occupational therapy visit. This enabled the therapist to prepare for the home visit and bring necessary equipment, possibly eliminating the need for a further visit.

“Basically we conduct the initial interview over the phone because what we found is that actually having a little bit more information before going out we can see if there are any other issues and maybe bring out some equipment and things like that.” (9)

For all participating therapists, the home visit began with a face-to face interview with the client about his or her situation and functional ability. Most therapists also

discussed the need to observe the client performing activities because the functional level clients described often differed from the functional level observed.

“They'll often say ‘oh no, I'm all right’ or ‘I do this or that’ and then when you get them to show you and they actually can't’. They haven't realised how bad they were or that they could have improved their situation very quickly.” (3)

Some participants were aware of standardised assessment frameworks, but chose not to use them; others, including a new graduate, were not even aware that standardised frameworks existed. All participants used self-designed assessment frameworks or frameworks designed by the area health service. A few therapists stated that their forms covered all aspects of the client home.

“We developed the home assessment form so it will make things a lot easier especially in regards to documentation. It's also good for people who are relatively new to OT practice to give an idea of the sorts of things that you should be looking at in terms of home mods. Before we just played it by ear by going in there and having a look”.

It appeared that most therapists used their frameworks as general guides and relied on their own knowledge to determine what to look for and to make extensive notes.

For example:

“We have a standard home assessment form which looks at the access, all the bedrooms, the kitchen, dining room, the bathrooms, of course, and the laundry. They are very general so you can slot in the information that you want but it doesn't give you any prompting of what you should actually be looking for.” (4)

3.7.2 Understaffing

Lack of funding has resulted in extensive waiting lists for the majority of NSW occupational therapy practices in both rural and urban areas. Most departments were able to see urgent clients within a week or two of receiving the referral, but non-urgent clients often had to wait more than 3 or 4 months. One therapist expressed the frustration of not being able to see clients immediately for home assessment:

“Waiting lists are always hard because you find that if it's too long by the time you get there, the person has either died or become so much worse and are so devastated at having had to wait all that time and it becomes really difficult.” (3)

Lack of staff places an increased strain on already limited services in rural areas. In a rural practice, travelling to and from client appointments takes up a considerable portion of a therapist's time and may decrease the number of clients he or she can see. Travel time is increased for a therapist when positions are vacant in nearby areas and he or she must help to cover that neighbouring area:

“It (staff shortages) only becomes a difficulty if a particular area has a position vacant, which happened in **** for about 12-18 months. There were no services there so we were finding it really hard to get people assessed... So we would often go to **** which was an hour away which caused a strain on our services.” (5)

Therapists also noted that delay is compounded because the wait for modification installation after the assessment is completed can be 6-8 months. For some participants, the push from management to decrease waiting list times without funding to employ more therapists resulted in ethical problems:

“I know some of the other therapists I work with prefer to spend less time on each person and get through more on the waiting list and expect the person to nominate the areas of difficulty. I've found that you can't rely on people to do that.” (3)

3.7.3 Client Collaboration

It does not appear that participating therapists always involved their clients fully in the decision-making process. A number of therapists talked about the importance of communicating and involving the client in the clinical reasoning process. One therapist gave an example of the situation often encountered when installing access ramps:

“It's common that people don't like the idea of a 1 in 14 ramp or a 1 in 16 ramp, who just want their mate to do a nice little short thing that's about a 1 in 5 gradient but once you explain the safety... it's very unusual for people to say; no I want my brother-in-law to put in this itsy bitsy little one.” (2)

In practice, however, therapists did not always involve clients in formulating recommendations. For example, participating therapists who were unable to take the client on home assessments did not mention discussing recommendations with the client either before or after the home assessment.

3.7.4 Communication with Home Modification Services

There were varying levels of communication with home modification service providers. None of the participants mentioned consumer organisations as information resources. Therapists may be aware of the importance of these organisations, but the interview topic areas did not specifically invite comments about them.

All participants who worked with Department of Housing expressed concern about poor follow up and lack of communication that often resulted in sub-standard modifications. The following comment illustrates the importance of follow up during and after installation:

“What I usually find is that I've sent this report and all these drawings and I walk in and the rail is set diagonally in the shower up to the ceiling or something like that and what's happened and the contractor has just walked in according to the client and the client has said they like the diagonal rail and I'll have it here thanks, and put it in and left and Department Of Housing hasn't followed it up” (8)

A few therapists expressed concern about inconsistency within Department of Housing regarding the allocation of resources:

“I don't see it as an equitable service as an outsider looking in. I've had some clients who get everything done and it's done quite timely and then I've had other clients who have never heard from them and maybe it's been a year later and they have been asked to look at it.” (3)

Occupational therapy departments that have been proactive in initiating communication with Department of Housing have improved communication and expedited home modification installation. One participant's department initiated a monthly meeting with its local Department of Housing office:

“What we do there is log it in a book and each month we have a meeting with Department of Housing just to find out where everyone is and what status the job is at and if they need more information or if they need a joint home visit we can organise it then.” (4)

One participant illustrated how sensitivity to Department of Housing's decision-making process also can expedite home modifications. Rather than submitting plans and having the Department of Housing reject them on the basis of limited funding, one participant arranged to meet with the Department of Housing's Technical Officer on site before submitting plans to determine the feasibility of modifications and whether Department of Housing would provide funding.

Occupational therapists' relationships with Home Modification and Maintenance Services appeared to be more positive than those with the Department of Housing. Therapists who worked with their local Home Modification and Maintenance Service on a regular basis reported having a good understanding of the role that each played in the provision of home modifications. Respect for each party's specialty resulted in a good working relationship.

Therapists offering specialised services often worked with a range of Home Modification and Maintenance Services, which made it difficult to develop a relationship with a particular Home Modification and Maintenance Service. These therapists were often confused about Home Modification and Maintenance processes because each service provider had a different policy:

“They seem to operate quite independently of each other and every area has a different referral form and a different method of processing the application and a different attitude towards managing the client so that can be a bit frustrating.” (8)

Therapists identified some areas where communication could be improved, such as notification from the Home Modification and Maintenance Services when modifications have been completed. Occupational therapists need to know when modifications are completed to insure that the client has received the promised service and to provide any necessary training. Most participants contacted the client periodically to assess the progress of modifications; with limited time and high caseloads, however, clients could be overlooked. Improved communication would allow therapists to monitor more reliably and efficiently the progress of home modifications and insure that clients are promptly trained to use the modifications.

4. Summary of findings

The demand for home modification services has grown in the last decade due to demographic, social, and economic changes. New South Wales occupational therapy services have not kept pace with the demand, placing time constraints on already busy occupational therapists. The results of this study indicate that occupational therapists recognise the importance of home modifications and work hard to conscientiously meet their clients' needs. Many have good working relationships with home modification service providers and have developed innovative ways to promote effective and timely communication. Some participants have devised creative ways to involve clients and their families in making decisions about home modifications. The findings also highlight ways in which services could be improved. The findings of this research confirmed and reiterated themes of the home modification literature:

- occupational therapists need additional specific home modification information;
- many occupational therapists do not involve clients and carers sufficiently in the decision-making process;
- occupational therapists are concerned for the safety of clients because tradespeople do not always implement home modification as prescribed by the therapist;
- the establishment of good communication processes between occupational therapists and home modification professionals can improve service efficiency and quality;
- time constraints affect service; and
- the assessment process could be improved.

Simple procedural changes could improve the assessment process. Changes in undergraduate education, better supervision, continuing education and better staffing could improve the situation for clients and therapists.

4.1 Specific Information Needs

The results highlight several areas where therapist knowledge could be improved: the use of the Australian Standards for accessibility, the importance of individual client measurements, the use of standardised assessment frameworks, duty of care when the client declines modifications, funding policies and options, prescribing assistive devices, the role of community services, the impact of natural environment on home modifications, and building and land regulation. All of these topics are included to some extent in the undergraduate course, but for some topics, the necessary knowledge and the ability to apply it appears to be acquired with experience. Supervision by or collaboration with a more experienced occupational therapist, continued education, and consultation with local Home Modification and Maintenance Service directors may help practicing therapists increase their competence.

4.2 Collaboration with Clients and Carers

The results confirmed earlier findings that occupational therapists are taught the importance of client collaboration, but do not always involve clients in the decision-making process (Brown & Bowen, 1998). The nature of home modification underscores the importance of client involvement: home modifications not only change the look of a client's most personal space, but they are designed to increase client comfort and safety in completing routine and often highly personal tasks, such as bathing or toileting. Earlier research suggests that clients are more likely to use modifications if they participated in decision-making. Established procedures that gather assessment information from clients and involve clients in decision making could promote regular client collaboration.

Similarly, many participants did not report involving carers in decision-making. Carers are often in positions of control (Luker & Chalmers, 1989), and involving the carer in decision-making could decrease the carer's resistance to recommendations. Separate forms or questions for carers may promote involving carers in decision making.

4.3 Modification Installation

Better information and improved communication can help alleviate problems with noncompliant installations. For major modifications in NSW, the Home Building Act's contract requirement could increase compliance because the contract must include specifications for the work. That requirement may encourage therapists to be more precise in their descriptions and encourage tradespeople to seek clarification if the specifications are not clear. The contract also could provide a remedy when modifications do not conform to the specifications. Improved relationships and communication with builders, tradespeople, Home Modification and Maintenance Services, and Department of Housing also could increase the likelihood that installations would comply with recommendations. Understaffing, however, makes it difficult for occupational therapists to have time to develop those relationships and organise regular communication and follow up.

4.3.1 Communication with Service Providers

The results suggest that proactively establishing communication with funding agencies, builders, and tradespeople can encourage timely problem solving dialog and promote follow up to ensure compliance with recommendations. Therapists' time constraints and inconsistent policies across Home Modification and Maintenance

Services in NSW make it difficult for some occupational therapists to develop relationships and engage in regular communication with service providers.

4.3.2 Staffing

Increased caseloads impact client service in more ways than one. In the present study, staff shortages presented particular problems in rural areas. These results are consistent with numerous studies that have reported difficulties in filling rural occupational therapy positions (Millsteed, 2000; Bridge, & Martindale, 2002). Clients may have to wait as long as four months, and the length of delay continues to increase (Harries & Gilhooly, 2003; Mitchell & Unsworth, 2004). Because neither Home and Community Care nor Department of Housing will approve funding for modifications without an occupational therapist's recommendations, the entire home modification process is delayed when occupational therapy departments are short-staffed. If the case is urgent, Home Modification and Maintenance Services must contact a private occupational therapist, which can increase the cost of individual jobs by as much as \$60-\$200 (Bridge & Martindale, 2002). As funding is limited, the increased cost for urgent cases can reduce the number of clients that the Service is able to assist. Clients waiting for home modifications may be unable to perform basic functional tasks and risk injury. Some clients, such as those with recent spinal cord injury, cannot even return home until the home is wheelchair accessible. Pressure on therapists to do 'quantity' work may mean that therapists spend less time on the assessment process, which could result in inaccurate assessments. Higher workloads also mean that therapists have less time to spend staying up-to-date on funding policies and options, products, assessment techniques, and the law. Overworked therapists don't have time to cultivate good relationships that could expedite the home modification process. Inaccurate assessments and delayed home modifications will have a far greater impact on the financial resources of the health system than employing more therapists to meet the increasing demand for services (Kraskowsky & Finlayson, 2001).

Therapists are hesitant to accept positions in rural areas because of limited resources, reduced access to continued educational opportunities, distances of work-related travel, insufficient support, and feelings of isolation (Welch, McKenna & Bock, 1992; Podsakoff, MacKenzie, Podsakoff, & Lee, 2003; Millsteed, 2000). State and territory governments have implemented some initiatives to encourage more allied health professionals to accept positions in rural Australia (e.g., scholarships, a state-advisor for allied health services, and increased funding), but rural health services are still losing allied health positions (National Rural Health Alliance, 2004). Additional efforts that focus on the reasons therapists decline rural positions may be necessary to avert the shortage.

4.3.3 Assessment Process

Referral procedures that insure the consistent collection of relevant and accurate referral data may help assure proper prioritisation and more efficient service. The results from this study are consistent with those of other studies, showing that the referral base for occupational therapy services is broadening (Luker & Chalmers, 1989). More referral sources may mean increased variability in the quality and quantity of referral data. Because clients are prioritised on the basis of referral information, consistency is important to fairness. Procedures to promote the consistent collection of complete and accurate referral data may improve the fairness and efficiency of home modification services.

Telephone interviews could streamline the assessment process. Gathering basic information prior to the home visit permits the therapist to focus the home visit specifically on the everyday difficulties experienced by the client, rather than using the first session to gain basic information that could have been acquired over the telephone (Korner-Bitensky & Wood-Dauphinee, 1995). A telephone interview also may increase the efficiency of the process because the therapist will be more likely to have everything he or she needs at the time of the home visit and avoid the need to return. The phone interview could even signal the need to have a builder accompany the therapist to the home assessment. The phone interview also can be used to provide the client with information about the roles and responsibilities of the therapist and services available, which may facilitate better rapport and more meaningful communication during the home visit.

4.3.4 Filling the Information Gap

There are several possible ways to fill the gap between information therapists have and information therapists need about home modifications.

More problem based learning opportunities may enhance students' competence in home modification. Several participants identified a need for more practical educational opportunities in home modification. Problem-based learning has helped undergraduates to develop better clinical reasoning skills and to better apply their new knowledge (Hammel, Royeen, Bagatell, Chandler, Jenson, Loveland & Stone, 1999).

Supervision and professional support also can provide an expanded knowledge base and facilitate clinical reasoning and effective practice. One third of rural therapists are new graduates when they begin their positions, and the majority of the rural therapists work as sole practitioners (Podsakoff, MacKenzie, Podsakoff, & Lee, 2003). One possible solution would be for Area Health Departments to appoint an area advisor for home modification services. The benefits could far outweigh the cost. Prescription of inappropriate home modifications and assistive devices are costly mistakes that might be avoided with proper supervision.

Continued education and graduate training can expand therapists' basic knowledge and educate them about current issues and new developments in home modification. To insure that practicing therapists receive timely and useful information, the information needs of occupational therapists should guide continued education program development.

The Home Modification Information Clearinghouse website can provide some of the home modification information required by occupational therapists. Results of this study indicate that the majority of therapists have access to the internet and that this is a quick way for time-pressed therapists to obtain home modification information.

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APPENDIX A: Invitation to participate

Dear

The Ageing, Disability and Home Care Department of NSW and the University of Sydney would like to invite you to discuss your information needs and priorities as a part of the preliminary work being undertaken to establish a Home Maintenance Modification and Information Clearing House.

Older people and people with disabilities and their carers are living in homes that are inappropriate for their needs. Not only is this a large problem today, it is also a problem that is increasing as the number of older households and households of people with mobility restrictions increase in NSW.

The collation of interview findings from a range of service providers, industry and consumer advocates will be used to inform the design and contents of an information clearing house. This collaborative action based approach is we believe the best means to ensure that stakeholders needs are appropriately identified and prioritised.

As a key stakeholder you may wish to contribute. Consequently, we want to explore your perspectives on a number of issues concerning Home Modification and Maintenance information needs, policies and services. We would like to conduct the interview via telephone and expect it to take approximately 60 minutes of your time. Following notification of your interest in this project we will contact so that a visit or telephone interview can be arranged at a time most convenient to you. With your written consent, we will audiotape the interview so that you can later verify the key themes and priorities that emerge.

If you are interested in contributing to this important project we would ask that you complete the attached forms, and reply in writing to Mrs Fiona Cowell at the address given below. If you have any queries regarding the project, please do not hesitate to contact Dr Catherine Bridge or Dr Peter Phibbs (the Chief Project Investigators)

We look forward to your response and contribution to this exciting project.

Yours faithfully

Fiona Cowell
Co-Investigator

APPENDIX B: Ethical consent

Consent Form

Please take as much time as you wish to consider participating in this study before you sign.

Feel free to contact the project investigator (details below) to ask any questions on aspects of this study that are not clear.

In no way should you feel obliged to participate in this study.

I _____ have read and understood the
Name (please print)

'Subject Information Statement' and letter inviting me to participate in the above research project, and have chosen to participate in the study.

I am aware of what is involved in the study and understand that I may withdraw at any time.

I agree/disagree to the interview being audiotaped (Please indicate your preference by crossing out the response that is not applicable).

I also understand that for the purposes of this study my identity will remain confidential.

My signature indicates that I have received a copy and agreed to this consent form.

(Signature of participant) ___/___/___
(Date)

(Signature of witness) ___/___/___
(Date)

APPENDIX C: Interview Framework

Issue: Lack of knowledge about information needs on a regional and service level basis.

Purpose: To inform action to develop a web based clearing house and to determine the priorities and topic areas for information to be cleared.

Background: How are information trends impacting on Home Modification services?

- What knowledge/Information is most crucial to you? Why
- Could you rank or prioritise this? Why or why not?
- What areas of information do you want/need to know more about? Why?
- How do you obtain information at present? Why?
- What specialist information has been developed that you are aware of? How helpful is this to you and your service
- Spatial requirements (i.e. how is knowledge about dimensions such as width length, height etc. gathered/examined? To what extent is this knowledge/information related to information about walkers, wheelchairs, scooters, ambulance trolleys, canes, traymobiles etc.)
- Carer requirements (i.e. how is data about needs of other users considered/factored in? To what extent is this related to knowledge/information about occupational health and safety regulations, public liability etc.)
- Product requirements (i.e. how is data about products gathered? To what extent is this contained in policy and procedure manuals, independent living centre equipment data base, building supply catalogues etc.)
- Requirements for community inclusion (i.e. how is information made available to consumers? To what extent is information available in other languages, accessible formats etc.)
- Requirements for meeting standards of care (i.e. how is information about policy and procedures documented and obtained? To what extent are manuals, how to guidelines etc. available?)
- Disability access components (i.e. how is data about fabrication and installation of ramps, lifts, doors, floor treatments, sanitary facilities, thermostatic mixer valves etc. obtained?)
- Funding policy (i.e. how is information about funding gained? To what extent is assistance for purchasing or loan of equipment etc. considered?)
- Building and Land Regulation (i.e. how is information about building and land regulation obtained? To what extent are access standards, human rights and equal opportunity guidelines, building approval guidelines etc. considered?)
- Natural environment (i.e. How is information about the natural environment related to the home modification under consideration? To what extent are issues such as terrain, altitude, weather and air quality, light, sound etc. considered?)
- Built environment (i.e. how is information about the property considered? To what extent is structural stability, age, health etc. considered?)
- Other (i.e. what other information might service providers have to keep and or maintain? For instance, to what extent are occupational health and safety regulations etc. expected?)