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Survey of Current Occupational Therapist Practice in the Emerging Field of Home Modification and Barrier Free Design

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SURVEY OF CURRENT OCCUPATIONAL THERAPIST PRACTICE IN
THE EMERGING FIELD OF HOME MODIFICATION
AND BARRIER FREE DESIGN

by

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A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Science
Department of Occupational Therapy

Western Michigan University
Kalamazoo, Michigan
April 2005

SURVEY OF CURRENT OCCUPATIONAL THERAPIST PRACTICE IN THE EMERGING FIELD OF HOME MODIFICATION AND BARRIER FREE DESIGN

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Western Michigan University, 2005

OBJECTIVE

We conducted a national survey of occupational therapists to ascertain what current trends are taking place in the field of home modification and barrier-free design and to examine how occupational therapists view their role in the practice of home modification and barrier free design.

METHODS

A 16-question survey was developed and included two hundred and fifty US licensed and or registered occupational therapists randomly selected from the AOTA membership listing.

CONCLUSIONS

The role of occupational therapy in the emerging practice of home modification and barrier -free design is regarded as important by occupational therapists in the United States. Many occupational therapists are involved with home accessibility considerations with their clients. More workshops should be made available for continuing education. Also, more outcome studies need to be performed to ensure quality outcomes and to ensure the reliability and validity of current assessment tools.

ACKNOWLEDGMENTS

I would like to begin to give thanks for the many people that have helped me finish my Master's Thesis. I would like to thank the members of my committee, Dr. Debra L. Hazel, Dr. Paula W. Jamison, Joseph Smolarkiewicz for taking the time to answer my questions and reviewing my work. I would like to extend my special appreciation to Dr. Debra L. Hazel for giving me guidance so that I may complete this work

Christian Michael Petrovich

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CHAPTER 1

INTRODUCTION

Background of the Study

The number of people who are disabled or elderly is increasing. According to gerontology experts, this amount will grow dramatically within the next three decades. From 1990 to 2020, the number of people over 65 is likely to increase to 54 million. According to U.S. census figures, by the year 2020, approximately one in six Americans will be 65 or over, and the amount of those 85 or older is expected to double that of 1990 (Johansson, 2003). The growing population of people 65 or older and those with disabilities are facing many constraints within their living environments. More than 1.8 million Americans reside in institutions, with the vast majority living involuntarily in skilled nursing facilities (SNF). Millions more are isolated in their homes due to lack of essential community services, with more than two million considered at risk for entering an institution in order to receive needed care (U.S. Department of Health and Human Services, 2000 & 2001).

The increase in people 65 and over or who are disabled and interested in living in the community is occurring as a direct result of improved health care and the desire to age in place. Growing awareness of the expense and negative effects of institutionalization has also drawn attention towards the benefits of aging in place. The shift of health care to client-centered and community-based services has been stimulated by both consumer demands (Gage, 1995) and legislation (Law et al., 1996). While achieving accessibility may mean finding a new residence or designing and building a home to the specifications that meet the needs of a person with a specific disability, it is often possible to adapt or modify current and existing housing using various assistive technologies. A direct relevance for occupational therapy's role in the field of home modification and barrier free design has been defined. Occupational therapists are frequently called upon to

assess the functional fit of housing for clients with limitations. People with limitations require barrier-free residences that are responsive to their needs and enable them to function in situations related to employment, recreation, education and other necessary services (Taira, 1984). A well-designed physical housing environment may contribute to self-maintenance (Rubinstein, 1989), strong feelings of independence, mastery (Reizenstein & Ostrander, 1981), and psychological wellbeing (Lawton, 1986).

A survey of 500 adults age 60 and older revealed that 90% rated caring for oneself and being able to live independently in one's own home as the most important factors of aging. This survey was commissioned by The Fund to Promote Awareness of Occupational Therapy and underwritten by Marsh Affinity Group Services (2003). "Occupational therapy is in a unique position to help people transition to old age. The Baby Boomers, as a population that is well-educated about health care, will increase the demand for therapeutic services that help them stay at home longer. They won't be satisfied with an institutional life," said Barbara L. Kornblau, JD, OT/L, FAOTA, president of AOTA (2003). Occupational therapists must be able to accurately assess client's capabilities and compatibility with their home environment. Occupational therapy is skilled treatment that helps individuals achieve independence in all facets of their lives. It gives people the "skills for the job of living" necessary for independent and satisfying lives. (AOTA 2005). This requires that the therapist is aware of the client's condition and needs, current laws and legislation, has a valid and reliable assessment tool, and can access community resources as needed.

Environmental attributes interact with human capabilities to enable performance, while others present barriers to an individual's attempts at meaningful interactions with his or her surroundings. Occupational performance is the result of complex interactions among person, environment, and occupation (Christiansen & Baum, 2005, pp. 300). Housing accessibility directly correlates with a person's ability to perform activities of daily living.

Statement of the Problem

Occupational therapists' work is focused on occupational performance and participation, or the point when and where the person, the environment, and what the person wants and needs to do intersect (Christiansen & Baum, 2005, pp. 243). Occupational therapists are involved in the field of home modification and barrier free design. However, there appears to be a lack of accepted protocols, evaluation tools, and outcome studies on these procedures to support the expected growth for occupational therapy in this field.

Purpose of the Study

To improve our understanding of the current occupational therapy practice in the field of home modification and barrier-free design and foster future research, we conducted a study. The purpose of this study was to learn about current trends that are taking place in the field of home modification and barrier free design and to examine how occupational therapists view their role in the practice of home modification and barrier free design.

Definition of Terms

Occupational therapists are required to follow The Standards of Practice for Occupational Therapy (AOTA, 1995) as well as the Occupational Therapy Code of Ethics (AOTA, 1998). The goal of occupational therapy is to enable individuals to achieve competency and satisfaction in life's chosen roles and in the activities that support function in these roles. An occupational therapist must be able to evaluate and address certain performance areas, components, and contexts that influence an individual's ability to achieve independence (AOTA, 1994). The occupational therapist evaluates the client's occupational function. Following identification of the issues of difficulty in occupational function, the therapist completes further assessments to determine what

factors limit performance. If the limiting factors can be improved or eliminated by direct intervention, the therapist chooses an intervention approach that is appropriate to the problem. The correct assessment tool is imperative in this decision-making process. During our search for home modification assessment tools we have come across many evaluations, checklists, surveys, and assessments. Many of these look at home safety and offer simple and basic solutions, but few have proven validity and reliability. An assessment should also lead to valid and reliable recommendations. In the area of home modification and barrier-free design the occupational therapist may be a part of a team of professionals working with a client. The Person-Environment-Occupation-Performance Model may help the occupational therapist build a collaborative plan with the client and other professionals as the client seeks the knowledge and skills of the occupational therapist to address issues that impact occupational performance (Christiansen & Baum, 2005). As professionals, occupational therapists should be using assessment tools that have both psychometric properties as well as sound clinical utility (AOTA, 2004).

Psychometric properties are those aspects of test development and evaluation that are essential to ensure that an assessment is appropriate for a particular client group, provides reliable and valid information, and is administered and interpreted in a consistent and ethical manner (AERA, 1999; Nunnally & Bernstein, 1995). The use of non-standardized checklists is not recommended because of their inherent lack of evidence of reliability and validity. The tasks listed in non-standardized checklists are rarely even operationally defined, the initial step in establishing reliability and validity (Trombley & Radomski, 2002, chap. 36). Evaluation instruments should be valid, reliable, and responsive enough to detect important changes (Law & Letts, 1989). A reliable assessment is one that measures the attribute under study consistently no matter who performs it (interrater reliability) or when the assessment occurs (test-retest reliability). A valid assessment is one that measures what it purports to measure (Hasselkus & Safrit, 1976). Clinical utility, also an important part of an assessment, refers to ease and efficiency of use of an assessment, and the relevance and meaningfulness, clinically, of the information that it provides (Law, King, & Russell,

2001; Letts et al., 1999). There are many home modification assessment tools available. Some of the assessments appear to be comprehensive and easy to use. However, there are few with published studies that have examined reliability, validity or clinical utility.

Significance of the Study

There is currently an increase in the elderly and disabled population in the United States. The elderly population is projected to double in size to well over 70 million by 2025 (Lawler, 2001). The home is uniquely important in addressing a client as a whole in that it is the one factor that may encompass all or part of one's performance areas, components, and contexts. It is often possible to build environments that are barrier-free or to adapt and modify existing housing using various assistive technologies. In order to improve occupational therapy practice in the field of home modification and barrier free design, an accepted protocol for evaluating and making recommendations for modifications is needed. To do this, outcome studies to examine protocol effectiveness for evaluation tools and recommendation practices need to be conducted. Evaluation tools along with effective recommendation policies need to be psychometrically sound. We decided to address these issues by examining the current occupational therapy practice of home modification and barrier free design.

Outline of the Study

Chapter II continues with a review of the literature focused around the use of valid and reliable evaluations, outcome studies that have been conducted to demonstrate the effectiveness of occupational therapy recommendations for home modification, and literature concerning occupational therapists' knowledge relating to home modification and barrier free design. Chapter III is a description of the research design and implementation. Chapter IV presents the findings

from the survey and analysis of the findings. The study concludes with a summary, implications of the findings, and recommendations for future study in Chapter V.

CHAPTER II

LITERATURE REVIEW

Introduction

A review of the occupational therapy literature on barrier-free design identified a lack of related occupational therapy research on the topic of the development and use of environmental assessments (Cooper, Cohen, Hasselkus 1991). The same can be said of outcome studies conducted to demonstrate the effectiveness of occupational therapists' recommendations and knowledge of home modification related legislature. In order operate most effectively for our clients, occupational therapists should possess valid and reliable assessment tools, valid research to support our recommendations and a basic awareness of legislature relating to barrier free-design (AOTA, 1995). Laws may determine how much financial assistance a client may receive, and there are public building codes that include standards, dimensions and characteristics for many recommendations relating to home modification and barrier free-design (AOTA, 1995).

Home Modification Assessment Tools

In our research we have come across only three assessment tools used during the home modification assessment process that have had a published study that reveals the assessments' reliability, validity and clinical utility. The Housing Enabler and the Safety Assessment of Function and the Environment for Rehabilitation (SAFER) were developed as home modification assessments. The third assessment, the Canadian Occupational Performance Measure (COPM) was not developed as a home modification assessment. However, the data obtained from this

assessment provides specific information regarding occupational performance issues and indication of the client's perception of importance and satisfaction with occupational performance as well as any change that has occurred (Toomey, Nicholson & Carswell, 1995). This allows for the therapist to determine possible modifications that can be made to fit a specific clinical situation. More research needs to be done to insure that evaluation assessments are valid and reliable. Major occupational therapy texts and practice sources illustrate that environmental assessments are viewed by the profession primarily as situation specific and centered on the home. A list of home modification assessment tools that were reviewed for this study along with author or source are listed in Appendix B.

An informal survey consisting of identical questions and formatting to that of this study was conducted by Joe Smolarkiewicz, OTR, and licensed contractor at the 2003 AOTA conference in Washington D.C. This survey included 24 occupational therapists who were attending a home modification workshop; their responses revealed that only one of twenty-four surveyed occupational therapists admitted to having used an assessment tool that has published reliability and validity. All other responses revealed that occupational therapists are using custom made assessment tools that do not have any published evidence that addresses the assessments' reliability, validity and clinical utility. This survey also revealed that of those who list a home assessment tool or tools they have used within the past year all with the exception of one answered being either dissatisfied or neutral towards how satisfied they were with their current assessment tool. One therapist reported satisfaction with their assessment tool and that they were using an assessment that had good psychometric properties. This survey also revealed that the same therapist that reported satisfaction with using an assessment that had good psychometric properties also felt that their home assessment tool provided adequate data that communicated effectively across disciplines (i.e. physicians, architects, builders, clients) to provide justification for implementation and for funding of home modifications. That same respondent, along with one other of the surveyed therapists, responded "yes" to having been involved with an outcome study or follow up study

assuring proper implementation and follow through with recommendations for home modification and barrier free design.

The Housing Enabler

The Housing Enabler is one home modification assessment tool currently being used by occupational therapists that has published reliability, validity and clinical utility. The Housing Enabler, developed in Sweden, is a detailed tool for norm based objective assessment of the housing environment and the immediate outdoor environment (Iwarsson, 1999; Iwarsson & Slaug, 2000). The Enabler instrument is comprised of three parts.

The first portion is the assessment of functional limitations and dependence on mobility aids. By a combination of observation and interview, functional limitations and dependence on mobility aids are assessed as present or not present. There are 13 items for perceptual and physical functional limitations and two items for dependence on mobility aids. Profiles of functional limitations can be described on individual or group level.

Secondly, comes an assessment of the physical environment. Details in the environment are framed as items and every item is assessed as present or not present. The environmental details are to the fullest possible extent linked to legislation, regulations or general recommendations.

Lastly, an accessibility score is calculated. The assessment of functional limitations related to the assessment of physical environment. For each environmental item, the instrument comprises predefined points (1 to 4), as measures of the severity of the problems predicted to arise in the relation to each of the functional limitations. The sum of all the points is a measure of the degree of accessibility problems. The higher the score, the greater the accessibility problems (Iwarsson, 1999; Iwarsson & Slaug, 2000). The environmental part in this instrument comprises 188 items, divided into four sub-sections: outdoor environment, entrances, indoor environment, and communication. A total score is calculated, that is, a quantification of the degree of accessibility problems in a particular case. The total score predicts the load caused by a particular combination

of functional limitations and environmental design, thus giving a predictive measure of the degree of accessibility problems. The analysis makes it clear that accessibility is a relative concept, since problems only arise when environmental design is put in relation to an individual or group population with functional limitations. This means that the total score is always 0 if the individual or population has full functional capacity, whatever the design of the environment. To be able to perform the assessment, one must have access to this manual, including rating forms, a rule, and the handbook, (current edition comprising current Swedish accessibility norms, or corresponding guidelines for the relevant country). Rating forms may be copied freely for one's own use or printed from the files that are copied to the computer hard disk when the Housing Enabler 1.0 program is installed. In addition, with the aid of the program one can print a short version of the rating forms. Scores can be calculated manually, but access to a computer with the program Housing Enabler 1.0 is strongly recommended.

One important factor regarding the Housing Enabler is that the items are linked to current Swedish building regulations, Swedish accessibility guidelines, and current legislation on housing adaptation grants. It would be difficult to generalize this tool to use in the U.S. because of the significant differences between housing environments. At this point there are few completed and published studies to demonstrate the Enabler's reliability, validity or clinical utility in Sweden; however, it is very important to reveal that there are several studies in progress related to the Housing Enabler. An important part of the development of standardized methods of assessment and analysis is the establishment of normal values for an environment. A study was carried out to test inter-rater reliability. It was tested in practice by occupational therapists in primary health care. After further revisions of "The Enabler" and pre-teaching of raters, each of 30 individuals in their home environments was assessed by two independent raters. Reliability was evaluated using the kappa statistic. After only a few lessons in advance, the raters were able to administer the assessment in practice in a reliable way. Agreement between raters was very good to good, $K = 0.68-0.87$. The results showed that the instrument has high or very high reliability. Moreover,

during the course of the study the definitions and instructions were successively clarified, which led to improvements in the content validity of the instrument (Iwarsson & Isacson 1996). According to their study, the Housing Enabler assessment yielded an objective, professional, norm based, and predictive result. This study may have many limitations such as variations between individuals depending on age, gender, diagnosis and housing. A large number of empirical studies are needed to establish normal values in Sweden. The Housing Enabler suggests that 0 should be regarded as the normal value, since this is the total score in all cases where the individual does not show any of the functional limitations assessed by the instrument. In order to capture subjective, user-oriented data, another kind of instrument must be used. When using the Housing Enabler, the environmental analysis requires a familiarity with assessing physical barriers in the built environment and up-to-date knowledge of standards and functional demands from the point of view of accessibility. It is difficult for persons outside the profession of occupational therapy to administer Step 1 in a reliable and valid way, while Step 2 could be administered by architects, technicians or occupational therapists. If different professions are involved, it is strongly encouraged to have close co-operation, especially when it comes to data analysis. This assessment is available in book and software form in both Swedish and English.

The Safety Assessment of Function and the Environment for Rehabilitation (SAFER)

The Safety Assessment of Function and the Environment for Rehabilitation (SAFER) has been studied by Rosemary Oliver, who represented the Canadian Occupational Therapy Association and Comprehensive Rehabilitation and Mental Health Services in Toronto, Ontario. The SAFER Tool is an occupational therapy assessment of home safety and function for individuals who live in their own homes. It is designed to identify and describe safety concerns of an individual in his or her own home and to collect information to plan interventions and recommendations to improve

safety. Theoretically, the instrument is grounded in the assumption that people's performance in activities at home is a function of their skills and abilities interacting with their physical and social environments (Lawton & Nehemow, 1973). It is not appropriate to look at the home environment alone nor is it adequate to concentrate on a person's abilities alone. Both aspects are a vital part of assessment of function and safety. Initially, the items for the SAFER Tool were generated for use with a psycho-geriatric population. Later, with minor revisions, it was expanded to be appropriate for use with clients with physical disabilities as well. The SAFER Tool measures 14 domains and 97 items. The domains are living situation, mobility, kitchen, fire hazards, eating, household, dressing, grooming, bathroom, medication, communication, wandering, memory aids, and general issues. It is primarily designed for the elderly with cognitive and or physical disabilities, but it can be used for the assessment of other age groups and clinical problems. Reliability and validity of the SAFER Tool were examined in two studies. The first study was undertaken in two steps (Letts & Marshall, 1995; Letts, Marshall, & Cawley, 1995). First, an expert panel of clinicians and older adults reviewed the content of the instrument. Panel members categorized each item of the instrument and consensus was achieved. The meaning of each item was clarified. In the second step, data were collected on 56 older adults referred for OT services in the community. In the second study, data were collected on a sample of 38 people receiving OT services from five participating sites in Ontario and British Columbia. Along with the SAFER Tool, measures of ADL (Physical Self-Maintenance Scale), IADL (Instrumental Physical Self-Maintenance Scale, (Lawton & Brody, 1969)) and (Standardized Mini-Mental State Examination, (Molloy, Alemayehu, & Roberts, 1991)) were administered (Letts, Scott, Burtney, Marshall, & McKean, 1998). Internal consistency was examined with data from the first study. The evaluation of internal consistency examines whether or not the items included in the SAFER tool consistently measure the same basic construct. The data were analyzed using Kuder-Richardson estimates. A coefficient of 0.70 was considered acceptable, and the actual co-efficient was 0.83, well above the criteria giving the SAFER Tool statistic internal consistency. Inter-rater reliability as well as test-retest reliability was

tested to be very good. Content validity was examined and 97 items were established and it was determined that the SAFER Tool was comprehensive in its coverage of items to examine a person's ability to function safely in the home environment. Construct validity is tested when hypotheses about the instrument were established and tested. Both of the studies examined construct validity and validity has been supported in relation to cognitive impairment, which is certainly an important hypothesis for clinicians in practice, however, further research is needed to examine the construct validity of the SAFER Tool (SAFER 2001). The SAFER assessment is available in manual form.

The Canadian Occupational Performance Measure (COPM)

The Canadian Occupational Performance Measure (COPM) is an individualized measure designed for use by occupational therapists to detect change in a client's self-perception of occupational performance over time. This tool does not offer specific home modification recommendations. The COPM is intended for use as an outcome measure, and as such, should be administered at the beginning of occupational therapy services, and again at appropriate intervals thereafter, as determined by the client and therapist.

The COPM is a standardized instrument, with specific instructions and methods for administering and scoring the test. It is designed as an outcome measure, with a semi-structured interview format and structured scoring method. Change scores between assessment and reassessment using the COPM are the most meaningful scores derived from this tool. The COPM has been used in over 35 countries in the world, and has been currently translated into more than 20 different languages. The test-retest reliability of the COPM is good to excellent, with intraclass correlations coefficients of .63, .79 and .80 for performance score and .84, .75 and .89 for satisfactions scores and the validity. Research indicates that change in overall functions as rated by caregiver, clients, and therapists correlates significantly with change scores on the COPM (Law et

al., 1998). In a review of the emerging research and clinical literature related to the COPM since 1994, the conclusion was that the COPM is a valid, reliable, clinically useful and responsive outcome measure acceptable for occupational therapist practitioners and researchers (CAOT, 2004).

The test manual indicates that the COPM takes between 30 and 40 minutes to administer (Law et al., 1998). It is easily accessible and economic to use. Information is recorded directly on the form. Both a detailed manual and training video are available from the publishers. A majority of clinicians report that it provides meaningful and useful information and that it helps frame practice within a client-centered model. The semi-structured interview format is acceptable to both clients and clinicians (Toomey, Nicholson & Carswell, 1995). The measure is flexible since allowances and modifications can be made to address specific functional concerns. One concern with the measure included the difficulty for some clients, particularly those early in the rehabilitation process or those with limited insight, to identify occupational performance issues. The rating scale has also been problematic with some clients and there can be a tendency not to use its full range (Law et al., 1998). The information gained provides specific information regarding occupational performance issues and indication of the client's perception of importance and satisfaction with occupational performance as well as any change that has occurred (Toomey, Nicholson & Carswell, 1995).

The COPM information includes a video, workbook, manual and client forms. The training video demonstrates how to administer and score the COPM with clients. The workbook is a self-instructional program companion to the training video; the manual describes the history, features, development, reliability & validity of the COPM. It includes instructions for test administration and scoring, the process to follow, examples of using the COPM, and references. Individual forms are used to record data for each client.

There are many assessment tools being used in the field of home modification and barrier-free design. A standard protocol for home assessment has not yet been developed. A process that encompasses both The Person-Environment-Occupation-Performance Model and utilizes a valid

and reliable assessment tool resulting appropriate recommendations is not yet common practice in the field of home modification and barrier-free design. There have been few research studies on the topic of barrier-free design and there seems to be a lack of a common conceptual base with which to guide the development and use of environmental assessments (Cooper, Cohen, Hasselkus 1991). Also, none of the assessments reviewed for this study provide detailed instruction on what actions to take as a result of data collected from assessment. One assessment did offer suggestions on what changes to make, adaptive aids to be used and even listed their vendor and price. That assessment developed by Lifease®, Inc., is a software program. This assessment addresses the home environment for the consumer but also offers appropriate suggestions from assistive technology or home modifications to the appropriate products. This assessment, however, has not yet been shown to possess both adequate clinical utility and psychometric properties.

Major occupational therapy texts and practice sources illustrate that environmental assessments are viewed by the profession primarily as situation specific and centered on the home. Referential texts; Willard and Spackman's Occupational Therapy (Hopkins & Smith, 2003), Christiansen and Baum's Occupational Therapy (Christiansen & Baum, 2005) and Trombly and Radomski's Occupational Therapy for Physical Dysfunction (Trombly & Radomski, 2002), address the need for home modifications through barrier free design but provide only a brief overview for making these changes.

The assessments reviewed are similar in price. The Housing Enabler is on the expensive side; however, the software makes replication of the forms easy. The Housing Enabler does offer assessment software. Neither the Canadian Occupational Performance Measure and the Safety Assessment of Function and the Environment for Rehabilitation have software; however, they do have a video available for purchase. The Housing Enabler did state that it is only valid and reliable when an occupational therapist is performing the assessment. The environmental analysis requires a familiarity with assessing physical barriers in the built environment and up-to-date knowledge of

standards and functional demands from the point of view of accessibility. Similarly the COPM and the SAFER were tested with occupational therapists.

These assessments offer very little insight into how well their results may be utilized by others. This begs the question as to how universal current home modification assessment tools are with other persons involved in the assessment and modification process such as architects, contractors, or even the clients themselves. Ongoing studies on co-variation between objective, norm-based Housing Enabler analyses and results of users' subjective rating of accessibility problems will give more knowledge about the validity. Even the authors of the Housing Enabler mention that this assessment may only give crude predictive results, that there are some inconsistencies in the scoring and that only after further studies are conducted will we be able to give recommendations as to the accuracy with which rating results should be reported. All three assessments offer information relating to performance, however, they do not offer much in the area of providing sound recommendation.

Each of the assessment tools addressed in this document was developed outside of the United States. Current research involving these assessment tools are being conducted over-seas. However, there has been no indication that they will address current U.S. housing and population trends. Until more outcome studies are done to research the effectiveness of current home modification assessment tools, occupational therapists in the U.S. are limited to utilizing tools that do not possess tested validity, reliability or clinical utility.

The Effectiveness of Occupational Therapy for Home Modification Recommendation

Few outcome studies have been conducted to demonstrate the effectiveness of occupational therapists' recommendations for home modification. This is disturbing considering that according to the Standards of Practice for Occupational Therapy, Standard 1: Professional Standing and Responsibility 10, a registered occupational therapist is knowledgeable about research in the

practitioner's areas of practice. A registered occupational therapist applies timely research findings ethically and appropriately to evaluation and intervention processes (AOTA, 2004).

The study, “Adherence to Occupational Therapist Recommendations for Home Modifications for Falls Prevention,” would be an exception (Cumming et al., 2001). This study examined adherence to home modification recommendations made by an occupational therapist and attempted to identify predictors of adherence. This outcome study included 178 persons whose mean age equaled 74.6 years old. Those persons were visited by an occupational therapist for an evaluation and recommendations for appropriate home modifications for falls prevention. One year later, a research assistant visited these persons’ homes to assess adherence. The outcomes of this study yielded 52% of the recommendations were fully or partially adhered to. The study concluded that a major barrier to adherence to home modification recommendations is that many older people do not believe that home modifications will reduce their risk of falling. In older people, falls are associated with significant mortality and morbidity and frequently lead to a decline in physical and/or psychological function, ultimately encroaching on independence and autonomy. Given that most falls result from a dynamic interaction between intrinsic and extrinsic factors, a multidisciplinary approach to their management incorporating medical, functional, and environmental assessment is likely to be most effective. To date, there is limited evidence to support a population-based preventive strategy. It has become imperative to focus on high-risk groups with the potential to benefit. There is increasing evidence to support intervention in specific populations. The role of the occupational therapist and home environment modification has not been concretely established. However, a study has shown a reduction in falls in patients having a home environment assessment by an occupational therapist on discharge from a hospital (Cumming et al., 1999).

According to a study from the University of Buffalo’s occupational therapy department, supplying the frail elderly with needed low-tech assistive devices and home modifications reduced health care spending on average by \$17,437 per person. Those in the control group, who were

supplied with the usual care including nursing home, at-home health care and services provided by community agencies, averaged a health care cost of \$31, 610 per individual during the 18 month study period. This cost was compared to \$14, 173, costs for the intervention group that received the low tech devices and home modifications (Mann, Ottenbacher, Fraas, Tomita, Granger, 1999). Most of the savings resulted from reduced institutional care costs', including shorter hospital stays. Persons who received assistive devices and home modifications also had fewer falls, indicating that prevention of injuries was also a factor.

According to The Standards of Practice for Occupational Therapy, a registered occupational therapist should systematically assess the efficiency and effectiveness of occupational therapy services and design and implement processes to support quality service delivery (AOTA, 2004). In spite of this expectation few outcome studies have been conducted to demonstrate the effectiveness of occupational therapists' recommendations for home modification. If occupational therapists are going to respond to the need for performing home safety evaluations, we need efficacy outcome studies to support this practice and convince our patients, the referring physicians, legislators and the payers that our services are in fact beneficial.

Legislature

In order to best serve our clients, occupational therapists must understand current legislature relating to home modification and barrier free design. According to The Occupational Therapy Standards of Practice, an occupational therapy practitioner maintains current knowledge of legislative, political, social, cultural, and reimbursement issues that affect clients and the practice of occupational therapy (AOTA, 2004). Also, in relation, The Occupational Therapy Code of Ethics states that OT's shall critically examine and keep current with emerging knowledge relevant to their practice so they may perform their duties on the basis of accurate information (AOTA, 1998). Occupational therapists should possess a basic awareness of such legislature since laws dictate standards, dimensions and characteristics for many of our recommendations relating to home

modification and barrier free design. It is important for occupational therapists working in the field of home modification and barrier free design to be aware of the laws and regulations that apply to their clients at a city, state and federal level.

Americans With Disabilities Act of 1990

The Study Empowerment Through Occupational Therapy: The Americans With Disabilities Act Title III deals with such issues as occupation therapist's knowledge (Redick, McClain, Brown, 2000). The study randomly sampled 510 occupational therapists with 229 responding. Of those surveys returned, 159 respondents who serve clients who use wheelchairs met inclusion criteria. The purpose of this study was to determine whether occupational therapists (a) value a role educating consumers about the Americans With Disabilities Act of 1990 (ADA; Public Law 101-336); (b) are knowledgeable regarding Title III of the ADA; and (c) implement provisions and empower consumers who use wheelchairs to access public accommodations. The conclusion of this study revealed that therapists' lack of knowledge and their self-reported inaction with regard to ADA Title III may affect the accessibility of the environment, independence, and empowerment of clients who are wheelchair mobile and, therefore, may impede progress toward fully inclusive communities (Redick, McClain, & Brown, 2000).

Knowledge about the Americans With Disabilities Act of 1990 should not be our only concern as therapists. Other current legislature relating to home modification and barrier free design that occupational therapists should possess are a basic awareness of The Fair Housing Act, Section 504 of the Rehabilitation Act of 1973, state Medicaid Waiver Programs and No-Fault Laws, and The Architectural Barriers Act of 1968. Laws dictate standard dimensions and characteristics for such features as door widths, clear space for wheelchair mobility, audible and visual signals, grab bars, switch and outlet height, and more. There are requirements found in state, local and model building codes. The accessibility standards of the Americans with Disabilities Act (ADA) regulate the accessibility of public buildings and facilities. Even though the ADA is limited to

public areas, the adoption of this act into the constitution symbolizes a great achievement for accessibility for all. Also if there are changes in legislature in the future at a federal level to include private dwellings the ADA may be used as a building block for those changes. Most states or localities in this country have adopted building codes to govern construction within their jurisdictions. These building codes are enforced by local or state code officials. The Civil Rights Division believes that incorporation of the design and construction requirements of the Fair Housing Act and the Americans with Disabilities Act into building codes represents an opportunity to enhance compliance with these federal laws. Some model codes and some state and local codes include provisions that may afford an even greater degree of accessibility in some respects than does federal law. There are many other important legislatures that involve home modification and barrier free design. Appendix C will include internet links to relevant information regarding home modification legislature and reference material.

Medicaid

The Medicaid Program is responsible for the implementation and ongoing administration of home and community-based services, waivers and targeted case management programs for special population groups. The Medicaid Program studies, plans, and implements services relating to the needs of special populations such as the elderly, the mentally ill, and the physically and mentally disabled. Under Section 1915(c) of the Social Security Act, Medicaid law authorizes the Secretary of the U.S. Department of Health and Human Services to waive certain Medicaid statutory requirements. These waivers enable States to cover a broad array of home and community-based services (HCBS) for targeted populations as an alternative to institutionalization. Waiver services may be optional State Plan services which either are not covered by a particular State or which enhance the State's coverage. Waivers may also include services not covered through the State Plan such as respite care, environmental modifications, or family training.

To be a waiver participant, an individual must be medically qualified, certified for the waiver's institutional level of care, choose to enroll in the waiver as an alternative to institutionalization, cost Medicaid no more in the community under the waiver than he or she would have cost Medicaid in an institution, and be financially eligible based on their income and assets. If one chooses to enroll in the waiver as an alternative to institutionalization it is imperative that this person be as independent as possible. Modifications to a persons' dwelling may increase the independence level of a waiver participant thus lowering their cost to remain in the community.

No-Fault Law

One of the largest single expenses incurred in catastrophic injury cases is that of provision of home modification and barrier free accommodations. The no-fault law provides little guidance to claimants and insurers as to the determination of how much will be paid. According to Section 3107(1)(a) of the Michigan No-Fault Act, personal protection benefits are payable for all reasonable charges incurred for reasonably necessary products, services and accommodations for an injured person's care, recovery or rehabilitation (2005). The law's general mandate that all, "reasonable charges" be paid leaves room for much flexibility in resolving such claims. Modifications can range from simple placement of handrails in the bath tub, to the building of an entirely new home. Insurers may wish to place limits on the ability of the claimant to sell the home for profit or to make subsequent claims for further accommodations. Where dramatic modifications are called for, the claimant should first consult with an occupational therapist to determine what should be done, and indeed, whether modification is reasonable. An architect may be required to translate the therapists' recommendations into a solid plan. A contractor may then bid on the architect's plan. An important aspect of these claims is the lengthy delays that often attend their resolution. This is because home modification claims are usually the largest single claim beyond the acute hospital stay. Insurers may be reluctant to pay in the absence of an agreement specifying terms and limitations; claimants usually do not have the means to purchase these modifications in the absence of insurer assistance.

Claimants should be aware of their right to a "declaratory" ruling, in advance of incurring any expense on home modifications. The unpublished cases of *Mase v. Auto-Owners* (1992) and *Proudfoot v State Farm Mutual Insurance Company* (2003) are helpful in this regard.

During our research for this project it was noted that many contributions to the field of home modification and barrier free design were of foreign origin. For example all of our assessment tools discussed were developed in other countries. It should also be noted that there are different legislature governing the use of home modification and barrier free design in countries around the world. It is important to realize what trends are occurring in other countries so that we may better practices in the United States.

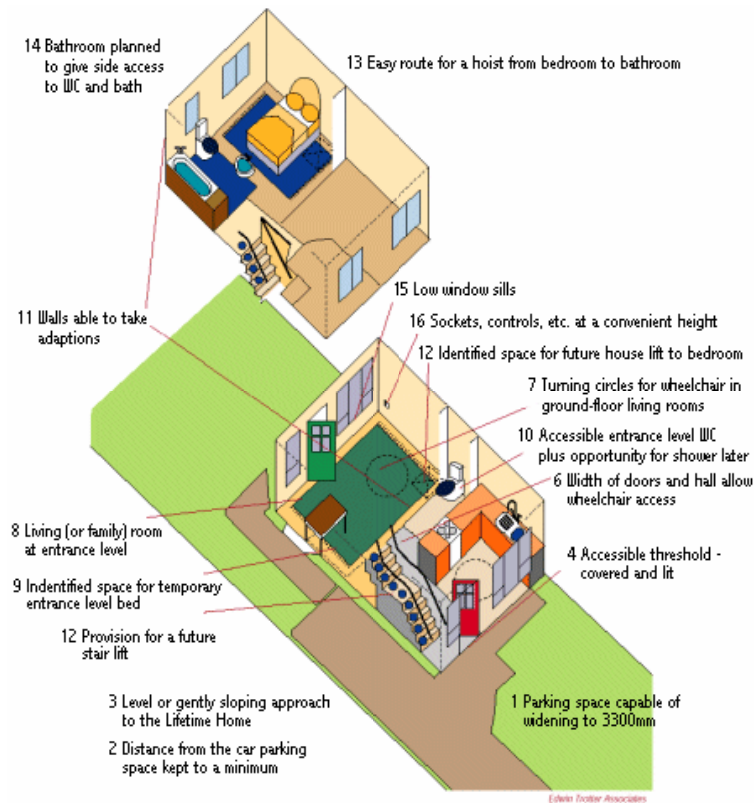
Lifetime Homes Concept

In 1991 the Lifetime Homes concept was developed in the United Kingdom. In the mid 1990s the Government indicated its wish to extend Part M of the building regulations, which deals with accessibility in public buildings, to cover houses as well. New regulations came into force for all housing built after October, 1999 (Joseph Rowntree Foundation, 2005). Following government approval of the London Plan in February 2004, Lifetime Homes are now mandatory across London and it is anticipated that the rest of England will follow suit when the Regional Spatial Strategies are drawn up (Lifetime Homes, 2005). Lifetime Homes have sixteen design features that ensure a new house or flat will meet the needs of most households. For example, all new homes must have level front entrances for the benefit of disabled or elderly people (Lifetime Homes, 2005). This simple design adjustment would make many U.S. homes, where traditionally steps are standard, more accessible. The focus is on accessibility and design features that make the home flexible enough to meet whatever comes along in life.

A research report suggests that not only will the occupiers of homes benefit from Lifetime Homes, but so too will tax payers. Savings will come from reduced expenditure on adaptations and

reduced need to move people to residential care, saving in health care and re-housing costs. When designing new homes it is now necessary to take account of three sets of requirements: The first is Part M of the Building Regulations that has been extended to include all new homes. The second is the Housing Corporation's Scheme Development Standards, which all housing funded with Housing Corporation money must meet. The third is Lifetime Home standards, which many commissioning clients and local authorities now require. The figure below (See Figure 1) provides an illustrated example on meeting Lifetime Homes 16 design standards (Joseph Rowntree Foundation, 2005).

Figure 1. Lifetime Homes 16 Design Standards



From Building Lifetime Homes Foundations, published in 1997 by the Joseph Rowntree Foundation. Reproduced by permission of the Joseph Rowntree Foundation. (c) Edwin Trotter Associates.

Designing new homes to the Lifetime Homes standards makes sense. They include a number of differentiating features. Lifetime Homes are providing those who live in them with many advantages, and are giving private builders a marketing edge in relation to the second-hand housing stock. Lifetime Homes will be suitable for the increasing older population, the vast majority of disabled people, as well as the non-disabled person. This will insure a wider market of potential buyers and residents, probably increasing the value and the ease with which the house can be re-sold.

Recognition of the positive effects of homes of flexible design and adaptability on longevity of tenure and community sustainability is apparent. Lifetime Homes is the accepted standard across the UK ensuring that everyone will eventually be given the choice of living in a Lifetime Home (Lifetime Homes, 2005).

As we look at current trends on the current occupational therapist practice in the field of home modification and barrier free-design, it is important for the occupational therapist that is performing a home assessment to understand current legislature relating to home modification and barrier free design. In order to advance in the field of home modification and barrier free design, occupational therapists should possess an awareness of related legislation as well as what trends are taking place throughout the world.

Research Question

A literature review was conducted to identify the current literature in the field of home modification and barrier free design in both the U.S. as well as the U.K. This study was conducted to answer the research question, “What is the current practice of occupational therapists in the United States?”

CHAPTER III

METHODOLOGY

Introduction

There exists a relationship between the occupational therapy profession and the field of home modification and barrier free design. By the year 2020, approximately one in six Americans will be elderly (Johansson, 2003). Many of these aging adults will not have safe and accessible home environments. It is often possible to adapt or modify current and existing housing using various assistive technologies. The AARP reported in May 2000 that the desire to remain in ones current residence for as long as possible becomes more prevalent as age increases. Seventy-five percent of those age 45 to 54, and 83 percent of those age 55 to 64 strongly or somewhat agree that they wish to remain in their homes as long as possible, while 92 percent of those age 65 to 74 and nearly all of those age 75 and over (95 percent) want to do so (AARP 2000). Occupational therapists may be called upon to assess the functional fit of housing for clients of any age with disabilities. This study will explore what current trends are taking place in the field of home modification and barrier free design and to examine how occupational therapists view their role in the practice of home modification and barrier-free design.

Review of the Research Question

The study was designed to improve our understanding on the current occupational therapist practice in the field of home modification and barrier free design in the U.S. Occupational therapists are involved in the field of home modification and barrier free design. However, there appears to be a

lack of outcome studies and continuing education workshops needed to be ensuring quality outcomes and to ensure the reliability and validity of current assessment tools.

The research questions included in our survey were developed based on theoretical discussions about what may be pertinent in the area of home modification and barrier free design.

Sample Demographics

All participants of this study were United States occupational therapists and members of the American Occupational Therapy Association. Two hundred fifty occupational therapists were randomly selected to be invited to participate in this study from the AOTA membership listing. One hundred twenty one occupational therapists returned the survey. The American Occupational Therapy Association (AOTA) is the nationally recognized professional association of more than 35,000 occupational therapists, occupational therapy assistants, and students of occupational therapy. These practitioners serve people with physical illnesses and injuries, congenital and chronic conditions, and mental and developmental disabilities, helping them to regain, develop, and build skills essential to restoring or maintaining independent function, health and well-being, and social participation (AOTA, 2005). Occupational therapists held about 82,000 jobs in 2002, (U.S. Department of Labor).

Survey Instrument

A 16-question survey was developed for the study (Appendix A). Surveys were mailed out on July 1, 2003 and were collected on July 29th, 2003 to be included in the study. A cover letter introduced the survey, explaining the voluntary nature of the study (See Appendix E). Participants were asked not to put their names anywhere on the survey. The survey contains questions, which include some personal demographic items and takes approximately 10 minutes to complete. If the

participants chose not to participate, they were asked to return the survey in the envelope provided. Participants were informed that returning a completed survey indicated their consent for use of their responses. Completing this survey was voluntary and anonymous. The study was approved by the HSIRB at Western Michigan University, USA.

Data Collection and Analysis

Our survey was created and has been analyzed for descriptive statistics. Data was collected from direct mailing from a random sample of occupational therapists. The survey questions are composed of 14 forced choice and two open ended questions. Participants were asked to respond to each question by circling the appropriate number or response. Questions 1-11 and 13-15 were either multiple choice, fill in the blank, or selecting a choice on a Likert scale from. All survey responses that are nominal were tallied on a data collection sheet (See Appendix D). Descriptive statistics were further analyzed using Microsoft Excel. Questions 12 and 16 are open ended questions. Question 16 asked participants for their opinion of what they felt is the role of occupational therapy was in the emerging practice of home modification and barrier free design. Current training methods were considered, and possible correlations between therapist's views on what the role of Occupational therapy in home modification and barrier free design were examined; themes from the open-ended question 16 were documented. Quantitative data from the returned surveys were coded and entered into a Microsoft Excel spreadsheet. Open-ended data was analyzed for themes.

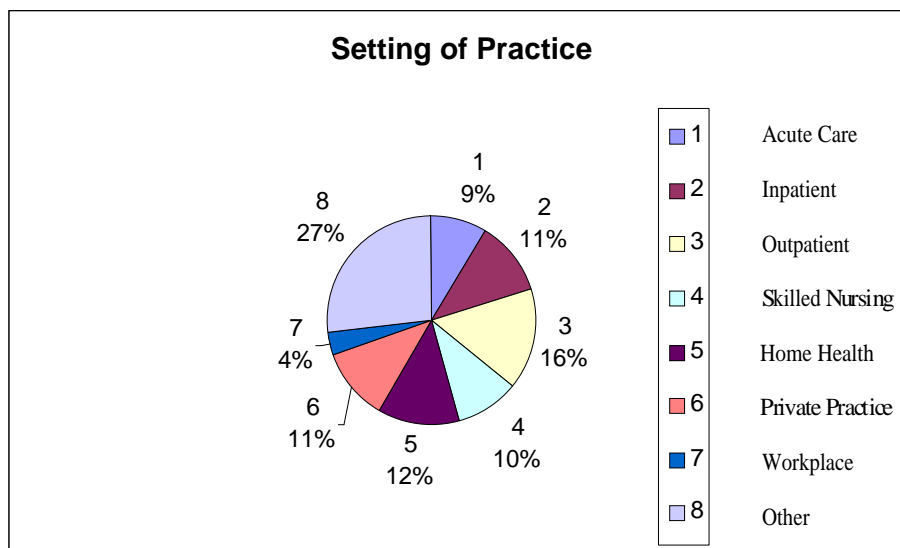
CHAPTER IV

FINDINGS

Survey Results

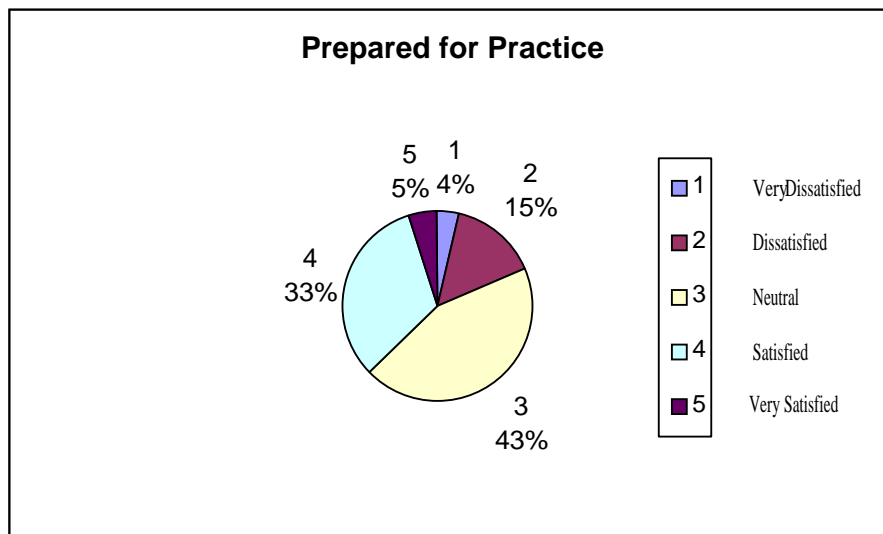
This survey revealed 121 responses equaling a return rate of 48%. Of the 121 occupational therapists that responded 66% had achieved a bachelor's degree and 55% had reached a masters degree level of education. Most of the respondents (47%) had been practicing between 16-30 years followed by those who have been practicing between 1-5 years (39%). Most respondents were currently working with pediatric clients 55%, geriatric clients 44%, and with adults 42%. Those therapists completing this study were working in a wide variety of settings with many working in several settings at once (See Figure 2).

Figure 2. Setting of Practice



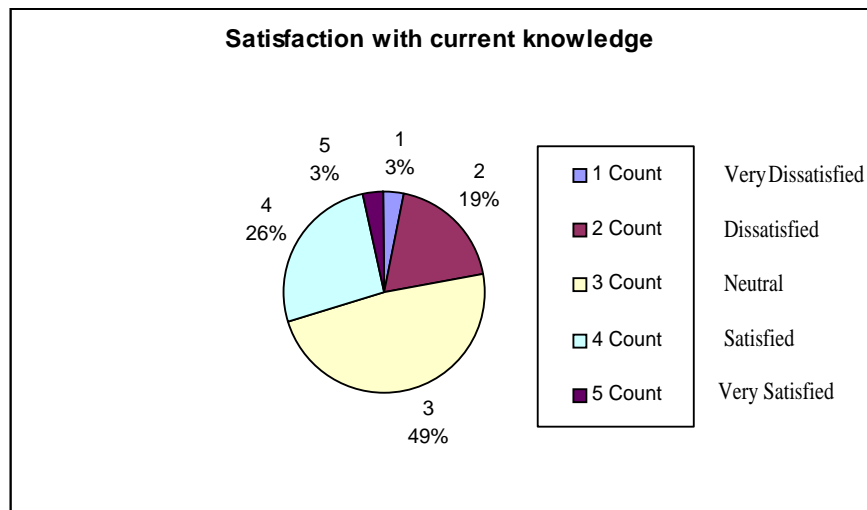
Therapists were asked if they are ever involved with home accessibility considerations with their clients. Of those 121 therapists that responded 35% answered no and 65% answered yes to being involved with home accessibility considerations with their clients. Therapists were asked what training had they received in the area of home modification and barrier free-design. Respondents could have selected multiple ways in which they had received training; the two most common areas in which they answered were self taught 60% and college course 41%. Less than 30% responded that they had received training from a seminar or workshop. Sixty four percent of respondents also answered “yes” to training being offered in the area of home modification and barrier free design as part of their entry-level curricula, with 36% answering that education was not offered in that area of practice. Of those who responded yes to training being offered in the area of home modification and barrier free design as part of their curricula, only 25% felt satisfied or very satisfied as to how well they felt prepared for practice in this area. A majority of the respondents answered neutrally (30%) and 13% felt dissatisfied or very dissatisfied as to how well they felt prepared for practice in the area of home modification and barrier free design (See Figure 3).

Figure 3. Prepared for Practice



Therapists were then asked to rate how satisfied they were with their current knowledge of home modification and barrier free-design (See Figure 4). Almost half (49%) of the respondents answered neutrally to this question, with an almost equal amount answering satisfied/very satisfied (29%) as those who answered dissatisfied/very dissatisfied (22%).

Figure 4. Satisfaction with Current Knowledge



This survey found only two assessment tools currently being used by occupational therapists' in the area of home modification that have published studies revealing both adequate clinical utility and psychometric properties. Those two assessments were the SAFER and the COPM. The SAFER was listed to have been used by only two therapists who responded to this survey and the COPM was listed once. Twenty-nine percent of those who responded to question 11 answered "yes" to having administered home assessments that encompass home modification and barrier free design solutions within the past year, and 71% that responded that they had not. Those therapists responding to this survey were then instructed to skip to the final question if they had answered "no" to having administered home assessments that encompass home modification and barrier-free design solutions within the past year. Of the 29% of respondents that answered "yes" to administered home assessments that encompass home modification and barrier free design solutions

within the past year, the majority (14%) answered to having performed 1-5 assessments per year (See Table 1).

Table 1. Number of Assessments Performed Per Year

Number of Assessments performed per year	Respondents	Percentage
1 through 5	17	14%
6 through 15	11	9%
16 through 30	2	2%
31 and over	5	4%

Of those respondents who responded “yes” to having administered home assessments that encompass home modification and barrier free design solutions within the past year, over 97% responded “no” to having been involved with any outcome studies or follow-up studies assuring proper implementation and follow through with recommendations for home modification and barrier-free design with less than 1% responded “yes”. Question 16 asked participants for their opinion of what they felt the role of occupational therapy was in the emerging practice of home modification and barrier-free design. Common themes were established from responses given. There were 103 participants who responded to question 16 out of the 121 total who responded to the survey, equaling an 85% response rate. The three common themes that were derived from question 16 are that occupational therapy plays an important role in the emerging practice of home modification and barrier free design, (51% of responses); continuing education is important, (14% of responses) and that communication with the patient as well as other professions is imperative, (72% of responses).

Discussion of Findings

We found that many occupational therapists are involved with home accessibility considerations with their clients. However, there are limits to the representativeness of our sample because of the 48% return rate. This may be because those therapists who are not currently working in the area of home modification and barrier-free design may not have chosen to partake in this study. It was deduced from the survey that many therapists did receive training in the area of home modification and barrier-free design as part of entry-level occupational therapy curricula. However, of those who responded “yes” to training being offered in the area of home modification and barrier free design as part of their curricula, only 37% felt satisfied or very satisfied as to how well they felt prepared for practice in this area. A majority of the respondents answered neutrally (44%) and 19% felt dissatisfied or very dissatisfied as to how well they felt prepared for practice in the area of home modification and barrier-free design. We felt this to be an indication that training in the area of home modification and barrier-free design is being covered by the majority of curricula. However, with occupational therapy covering a large spectrum of settings and populations, curriculums may have offered those therapists only an introduction to this area of practice as students. It was discovered from the survey results that therapists when asked to rate how satisfied they are with their current knowledge of home modification and barrier-free design, an almost equal amount answered satisfied/very satisfied as those who answered dissatisfied/very dissatisfied and nearly half of the respondents answered neutrally to this question. This resulted in an almost bell-shaped curve response. We believe that this may in fact support what was stated previous that many therapists are receiving a basic knowledge of home modification and barrier-free design in their educational curricula, but 75% feel they need more information. This would then indicate the need for continued education for therapists. However, when therapists were asked what training they have they received in the area of home modification and barrier-free design, most responded they had received training through self teaching (60%), and fewer than half

responded having received training through a college course (41%). This is counter to the response that (64%) of respondents answered yes to training being offered in the area of home modification and barrier-free design as part of their entry-level curricula, with only 36% answering that education was not offered in that area of practice. Another notable finding is that less than 21% responded that they had received training from a seminar or workshop and that the majority (42%) of those who responded answered that they had been self taught.

Twenty-nine percent of therapists responded that they have administered home assessments that encompass home modification and barrier-free design solutions within the past year and 71% that responded that they had not. At first glance that one might think that with such a low percentage of occupational therapists administering home assessments there may not be much interest in the practice. However, considering this survey was comprised of randomly selected occupational therapists from throughout the US who are practicing in many different and unique settings it is quite revealing that approximately 29% are performing home assessments that encompass home modification and barrier-free design solutions. With almost a third of all occupational therapists involved in the practice of home modification and barrier-free design, it is concerning to see the lack of a standardized protocol for evaluation and recommendation in this area of practice. Therapists' recommendations may be questioned in a court of law, recommendations derived from which ever assessment tool was used during evaluation. Over half of those who responded to how satisfied they were with their assessment tool from the survey reported that they had used an assessment tool of their own making, and over half of those respondents were either satisfied or very satisfied with their assessment. Interestingly, of those who responded to whether or not their home assessment tool provides adequate data that communicates effectively across disciplines (i.e. doctors, architects, builders, clients) to provide justification for implementation and for funding of home modifications, approximately 62% stated either "no" or that they did not know, leaving an important process unattended. In order to make sound recommendations an occupational therapist must have an assessment tool that will allow the

therapist communicate effectively across disciplines. There need to be more educational opportunities for therapists working in the area of home modification and barrier-free design. With more education there will be a better understanding of assessment and recommendation implementation. Of those respondents who responded “yes” to administered home assessments that encompass home modification and barrier-free design solutions within the past year over 97% responded “no” to having been involved with any outcome studies or follow up studies assuring proper implementation and follow through with recommendations for home modification and barrier free design with less than 1% responded “yes”. In a time where the trend is shifting towards evidence-based practice, more research and development is needed to create a valid and reliable home modification assessment tool that offers good clinical utility and offers justifiable recommendations that are easily translated among coordinating disciplines.

CHAPTER V

DISCUSSION AND SUMMARY

Limitations of the Study

More research is needed to improve our understanding on the current occupational therapist practice in the field of home modification and barrier-free design. There are limits to representativeness of our study. This study's sample size consisted of 121 occupational therapists located in the United States. Future study response rate may benefit from reformulated and structured questions. There are no previous surveys examining the field of home modification and barrier-free design using data from occupational therapists throughout the United States. Therefore, the survey questions made for this study are based on theoretical discussions about what may be pertinent in the area of home modification and barrier free-design.

Conclusions and Recommendations

The role of occupational therapy in the emerging practice of home modification and barrier-free design is regarded as important by occupational therapists in the United States. The absence of a standard protocol, psychometrically sound assessments, and outcome studies demonstrating the effectiveness of occupational therapy recommendations is disconcerting in a time of evidence-based practice. Many occupational therapists are involved with home accessibility considerations with their clients, however, less than a third responding to the survey report being very satisfied or satisfied with their current knowledge of home modification and barrier-free design. It is important to realize what trends are occurring in other countries so that we may better our own practices. In the area of home modification and barrier-free design the assessment tools with researched

psychometric value were developed in countries other than the United States. It should also be noted that there is different legislation governing home modification and barrier-free design in countries around the world. More workshops should be made available for continuing education. Also, more outcome studies need to be performed to ensure quality outcomes and to ensure the reliability and validity of current assessment tools. This is not only important for the relevancy occupational therapy in the field of home modification and barrier-free design but for following our code of ethics and our standard of practice.

Summary

The implementation of this study has answered some of the questions while also paving the way for additional research to bring more clarification of current occupational therapy practice in the field of home modification and barrier-free design. The most important findings of this study indicate that the need for reliable and valid assessment tools is imperative, and that there should be greater access to continued education on home modification and barrier-free design.

APPENDIX A

Survey Instrument

Survey Of Current Occupational Therapist Practice In The Emerging Field Of Home Modification And Barrier Free Design

Directions:

PLEASE READ BEFORE STARTING

Please respond to each question by either circling the appropriate number or response or by filling in the blank to the best of your knowledge. Your candid response to the items will enhance the validity of this research. To maintain your anonymity do not put your name on this questionnaire. Once you have completed the questionnaire please return it by placing the completed forms inside the self addressed, postage free envelope provided. If you choose not to participate, please return the questionnaire in envelope provided. Returning the completed survey indicates your consent for use of the answers you supply.

1. What credentials have you achieved? (Circle all that apply)
a. Licensed OTR/OT b. Bachelors Degree c. Masters Degree d. Licensed Building Contractor (In your state)

2. How many years have you been in practice as an OT/OTR? (Circle all that apply)
a. 1-5 b. 6-15 c. 16-30 d. 31 and over

3. In what area of OT are you currently working? (Circle all that apply)
a. Geriatrics b. Pediatrics c. Mental-Health d. Adolescents e. Adults f. Other

4. In what setting are you currently working? (Circle all that apply)
a. Acute Care b. Inpatient c. Outpatient d. Skilled Nursing Facility e. Home health f. Private Practice g. Workplace (i.e. work hardening) h. Other

5. Are you ever involved with home accessibility considerations with your clients? (Circle one) a. No b. Yes

6. What training have you received in the area of home modification and barrier free design? (Circle all that apply)
a. Self taught b. Apprenticeship/Technical School c. Seminar/Workshop d. College Course

7. Was training offered in the area of home modification and barrier free design as part of your entry level occupational therapy curricula? (Circle one) a. No b. Yes
8. If training was offered in the area of home modification and barrier free design as part of your occupational therapy curricula, how well do you feel it prepared you for practice? (Circle one)
5 =Very Satisfied; 4 =Satisfied; 3 =Neutral; 2 =Dissatisfied; 1 =Very Dissatisfied
9. How satisfied are you with your current knowledge of home modification and barrier free design? (Circle one)
5 =Very Satisfied; 4 =Satisfied; 3 =Neutral; 2 =Dissatisfied; 1 =Very Dissatisfied
10. Have you administered home assessments that encompass home modification and barrier free design solutions within the past year? (Circle one) a. No b. Yes

If you answered **no** for question **10** please **skip** the following questions (**11-16**) and answer the last question, number **16** of the survey. If you circled **yes** for question **10** please continue to answer (**11-16**):

11. How many home assessments do you perform per year? (Fill in the blank)
a. 1-5 b. 6-15 c. 16-30 d. 31 and over
12. What home assessment tool or tools have you used within the past year? (Fill in the blank)

13. How satisfied are you with your current assessment tool? (Circle one)
5 =Very Satisfied; 4 =Satisfied; 3 =Neutral; 2 =Dissatisfied; 1 =Very Dissatisfied
14. Does your home assessment tool provide adequate data that communicates effectively across disciplines (i.e. Drs, Architects, Builders, Clients) to provide justification for implementation and for funding of home modifications? (Circle one) a. No b. Yes c. Unknown
15. Have you been involved with any outcome studies or follow up studies assuring proper implementation and follow through with recommendations for home modification and barrier free design? (Circle one) a. No b. Yes

All occupational therapists completing this survey please complete the following question:

16. What do you feel is the role of Occupational Therapy in the emerging practice of home modification and barrier free design?

Appendix B

Assessment Tools Reviewed

Assessment Tool	Author/Source
CMHC	Maintaining Seniors Independence, 1989
Housing Survey	ARO Evaluation, 1988
Housing Enabler	Iwarrsson & Isacsson, 1999
Housing Assessment	UCP
UFAS Checklist	U.S. Access Board, 1990
Client Assessment Form	John Salman
Home Assessment Checklist	Center for Universal Design
Easy Access Housing For Easier Living	Easter Seals and Century 21
CASPAR	EHLS
The Accessibility Checklist	Goltsman, 1992
COPM	Law, 1994
Environmental Competence Questionnaire	CMHC, 1982
Environmental Grid Description Assess	Dunning, 1972
Environment Preference Questionnaire	Kaplan, 1977
POE	Cooper, Ahrentzen, & Hasselkus, 1991
Home Modification Workbook	Adaptive Environments Center, 1988
Modification Checklist	CMHC, 1988
Person-Environment Fit	Kahana, 1974
Person-Environment Fit Scale	Coulton, 1979
SAFER	COTA, 1991
Source Book	Kelly & Snell, 1989
EASE3	Lifese, 1998
Enviro-FIM	Steinfeld & Danford, 1997
Home Mod Workbook	Adaptive Environments Ctr, 1988

HOME Inventory	Caldwell & Bradley, 1984
Physical Architectural Features Checklist	Moos & Lemke, 1996
Westmead Home Safety Assess (WeHSA)	Clemson, 1997

Appendix C

Web Resources

<http://www.access-board.gov/adaag/html/adaag.htm>

<http://www.jrf.org.uk/housingandcare/lifetimehomes/>

<http://www.aota.org/index.asp>

http://www.odpm.gov.uk/stellent/groups/odpm_buildreg/documents/page/odpm_breg_025494.hcsp

<http://www.aotf.org/cgi-bin/sbcgi.cgi/database/assess?dbid=asses&lng=0&dplc=0&strt=1&bspi=/database/assess&eud=&stxt=&sidx=1&styp=6&nhit=100&sdisp=s>

<http://www.cms.hhs.gov/>

<http://www.disability.gov.uk/>

<http://www.enableage.arb.lu.se/index.html>

http://www.usdoj.gov/crt/housing/housing_coverage.htm

<http://www.jrf.org.uk/links/>

<http://www.hud.gov/offices/fheo/disabilities/sect504.cfm>

<http://www.hunter-jones.freeseve.co.uk/bregs.htm>

<http://www.dhnh.state.md.us/mma/waiverprograms/>

https://www.caot.ca/ebusiness/source/orders/index.cfm?ETask=1&Task=1&SEARCH_TYPE=FINN&FindIn=0&FindSpec=COPM

http://www.lifetimehomes.org.uk/home_front.php

<http://www.housing.wales.gov.uk/index.asp?task=content&a=w22&b=&lc=E>

<http://www.ex.ac.uk/Affiliate/stloyes/ugrades/otasses.htm>

http://www.arthritis.org/resources/Home_Life/design.asp

<http://www.homemods.org/>

<http://www.usc.edu/dept/gero/nrcshhm/index.htm>

<http://www.universaldesignonline.com/pages/764806/index.htm>

<http://www.aarp.org/life/homedesign/>

<http://www.katsnet.org/fact7.html>

<http://www.enabler.nu/projekt.html>

<http://www.caot.ca/copm/>

http://www.uthscsa.edu/sah/assistive_tech/webliography.htm

<http://www.iccsafe.org/>

<http://www.abledata.com/>

Appendix D

Survey Data Collection Set

<u>Survey Question & Answers</u>	<u>Frequency</u>
1. What credentials have you achieved?	
a. Licensed OTR/OT	___121___
b. Bachelors Degree	___66___
c. Masters Degree	___55___
d. Licensed Building Contractor (In your state)	___1___
2. How many years have you been in practice as an OT/OTR?	
a. 1-5	___39___
b. 6-15	___23___
c. 16-30	___47___
c. 31 and over	___11___
3. In what area of OT are you currently working?	
a. Geriatrics	___44___
b. Pediatrics	___55___
c. Mental-Health	___9___
d. Adolescents	___14___
e. Adults	___42___
f. Other	___24___
4. In what setting are you currently working?	
a. Acute Care	___17___
b. Inpatient	___22___
c. Outpatient	___30___
d. Skilled Nursing Facility	___19___
e. Home health	___24___
f. Private Practice	___22___
g. Workplace (i.e. work hardening)	___7___
h. Other	___52___
5. Are you ever involved with home accessibility considerations with your clients?	
a. No	___42___
b. Yes	___77___
6. What training have you received in the area of home modification and barrier free design?	
a. Self taught	___72___
b. Apprenticeship/Technical School	___1___
c. Seminar/Workshop	___36___
d. College Course	___62___
7. Was training offered in the area of home modification and barrier free design as part of your entry-level occupational therapy curricula?	
a. No	___43___
b. Yes	___75___
8. If training was offered in the area of home modification and barrier free design as part of your occupational therapy curricula, how well do you feel it prepared you for practice?	

- | | |
|--|----|
| 5 =Very Satisfied | 4 |
| 4 =Satisfied | 26 |
| 3 =Neutral | 35 |
| 2 =Dissatisfied | 12 |
| 1 =Very Dissatisfied | 3 |
| | |
| 9. How satisfied are you with your current knowledge of home modification and barrier free design? | |
| 5 =Very Satisfied | 4 |
| 4 =Satisfied | 31 |
| 3 =Neutral | 56 |
| 2 =Dissatisfied | 22 |
| 1 =Very Dissatisfied | 4 |
| | |
| 10. Have you administered home assessments that encompass home modification and barrier free design solutions within the past year? | |
| a. No | 84 |
| b. Yes | 35 |
| | |
| 11. How many home assessments do you perform per year? | |
| a. 1-5 | 17 |
| b. 6-15 | 11 |
| c. 16-30 | 2 |
| d. 31 and over | 5 |
| | |
| 11. What home assessment tool or tools have you used within the past year? | |
| <hr/> | |
| a. SAFER | 2 |
| <hr/> | |
| b. COPM | 1 |
| <hr/> | |
| c. other assessment tool | 33 |
| <hr/> | |
| | |
| 13. How satisfied are you with your current assessment tool? | |
| 5 =Very Satisfied | 4 |
| 4 =Satisfied | 14 |
| 3 =Neutral | 12 |
| 2 =Dissatisfied | 3 |
| 1 =Very Dissatisfied | 0 |
| | |
| 14. Does your home assessment tool provide adequate data that communicates effectively across disciplines (i.e. Drs, Architects, Builders, Clients) to provide justification for implementation and for funding of home modifications? | |
| a. No | 10 |
| b. Yes | 13 |
| c. Unknown | 11 |
| | |
| 15. Have you been involved with any outcome studies or follow up studies assuring proper implementation and follow through with recommendations for home modification and barrier free design? | |
| a. No | 34 |
| b. Yes | 1 |
| | |
| 16. What do you feel is the role of Occupational Therapy in the emerging practice of home modification and barrier free design? | |

APPENDIX E

Cover Letter

WESTERN MICHIGAN UNIVERSITY
H. S. I. R. B.
Approved for use for one year from this date:
MAY 30 2003

May 2003

Dear Occupational Therapist,

My name is Christian Petrovich. I am a masters of occupational therapy student at Western Michigan University in Kalamazoo, Michigan. I am conducting a study entitled, "*Survey Of Current Occupational Therapist Practice In The Emerging Field Of Home Modification And Barrier Free Design,*" with Dr. Debra Lindstrom Hazel from Western Michigan University's Department of Occupational Therapy for my masters thesis. The purpose of this study is to ascertain what current trends are taking place in the field of home modification and barrier free design and to examine how occupational therapists view their role in the practice of home modification and barrier free design. These trends may lead to further study and research which may in turn help to refine the role of occupational therapists in the emerging practice of home modification and barrier free design to better meet our clients needs.

I am writing this letter to invite you to participate in this project. A survey is enclosed. Returning the completed survey indicates your consent for use of the answers you supply. All participants will be United States occupational therapists or registered occupational therapists. Participants will include five hundred occupational therapists that will be selected randomly from the AOTA membership listing and who will receive a survey by mail. This survey was mailed out on July 1, 2003 and will need to have been filled out completely and returned by no later than July 29th, 2003 to be included in the study. The survey is comprised of 16 items including some personal demographic items and will take approximately 10 minutes to complete. Completing this survey is voluntary and the survey is anonymous. Do not put your name anywhere on the survey. The potential risks in taking this survey include the small amount of time needed to complete this survey and any discomfort that you may feel if you are completing home modification/barrier free designs without extensive training. The survey has been designed to allow its participants to share any relevant information you are willing to share in a non-threatening manner. Please respond to each question by circling the appropriate number or response. Your candid response to the items will enhance the validity of this research. Once you have completed the survey please return it by placing the completed forms inside the self addressed, postage free envelope provided. If you choose not to participate, please return the survey in envelope provided or discard. If you have any questions, you may contact Dr Debra Hazel at 269-387-7239 or Christian Petrovich at 269-568-5683. You may also contact the Chair, Human Subjects Institutional Review Board 269-387-8293 or the Vice President for Research 269-387-8298 if questions or problems arise during the course of the study.

I appreciate your consideration for participating in this project. Your participation is valuable and will be used to examine how occupational therapists view their role in relation to home modification and barrier free design and to ascertain what current trends are taking place in the area of home modification and barrier free design. If you would like to receive a copy of my abstract upon completion of this study email me at petrov20032003@yahoo.com.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board as indicated by the stamped date and signature of the board chair in the upper right corner. You should not participate in this project if the corner does not have a stamped date and signature or if the stamped date is older than one year.

Respectfully Yours,

Christian M. Petrovich OTR

Dr Debra Lindstrom Hazel OTR

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