CHAPTER 3.5

Everyday Competence in Older Adults

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One of the prevailing concerns as individuals enter older adulthood is the ability to maintain an independent lifestyle. Maintaining independence requires possessing the abilities to care for the self and to manage one's property. The term "everyday competence" refers to the ability to solve problems associated with everyday life. While this definition is brief and simple, daily problems are often complex and multidimensional. At the heart of everyday competence is the ability to solve problems. Problem solving involves assessing the current state, defining the desired state, and finding ways or strategies to transform the current state into the desired state. In solving a problem, the individual often needs to make decisions. One may need to decide what is the problem, what is the desired outcome, and what are the alternative solutions that might lead to the desired outcome. The process of decision making involves the evaluation of these possible solutions and the selection of one to implement in order to attain the goal (Reese and Rodeheaver, 1985). Moreover, everyday problem solving is dynamic. As one ages the nature of the problems changes as well as the appropriateness and desirability of alternative solutions. Expectations regarding everyday competence often vary for the young-old versus the old-old, as well as solution options. The tasks associated with everyday competence also vary culturally and contextually. The context, in part, defines the tasks or problems associated with everyday competence for the elderly. Expectations regarding everyday competence vary dramatically within Western cultures as well as in third-world countries.

This chapter addresses four major issues. First, we consider various theoretical approaches to the study of everyday competence. Second, the literature on antecedents of everyday competence is reviewed. Third, alternative procedures for the measurement of everyday competence are considered. Finally, issues related to the maintenance of everyday competence are discussed.

While this chapter will consider everyday competence primarily from a social science perspective, the corollaries to legal definitions of competence are useful to acknowledge. Legal definitions of competence often include two domains – care of the self and care of one's property. Guardianship is concerned with the care, safety, and wellbeing of the self. Conservatorship is concerned with management of one's property. In social science terminology, the Activities of Daily Living (ADLs; Katz *et al.*, 1963) usually comprise the activities assessed to determine competence to care for oneself. ADLs include the ability to toilet, bathe, feed, clothe, and transport oneself. The Instrumental Activities of Daily Living (IADLs; Lawton and Brody, 1969) constitute the activities assessed to decide whether a person is competent to manage property. IADLs consist of the ability to manage finances, prepare meals, manage medications, shop, use the telephone, clean the home, and use transportation. The IADLs are the types of activities more commonly incorporated in the assessment of everyday competence. Although psychological definitions are typically framed in terms of a person's competence, legal definitions often focus on impairment or incompetence. Legal and psychological definitions do

converge with respect to four common themes (Grisso, 1994; Sabatino, 1996; Willis, 1996). In defining and assessing functioning, both perspectives take into account: (1) assignment of status or disabling condition, (2) emphasis given to cognitive functioning, (3) focus on a functional or behavioral impairment, not just a disease diagnosis, and (4) competence, seen as including the congruence of both the person's abilities and the demands and supports of the environment. Utilizing preventative measures, as well as modifications or interventions, can extend maintenance of everyday competence. Decreasing environmental demands, changing the social environment, appropriate health behaviors, and increasing skill, possibly through various training programs, serve as means to prolong everyday competence.

THEORETICAL APPROACHES TO EVERYDAY COMPETENCE

In recent years a number of alternative approaches have been taken to the study of everyday competence. The approaches vary in terms of whether the focus is almost solely on the characteristics of the individual or whether contexts, as well as the individual, are considered. Even in approaches focusing extensively on individual characteristics, there is variation in the degree to which noncognitive as well as cognitive factors are considered. The approaches also vary in whether competence is considered as a global phenomenon or whether a domain-specific perspective of competence (e.g. financial management, medication adherence) is taken.

Three different approaches to the study of everyday competence are considered in this section. It should be acknowledged that these approaches give greater attention to cognitive factors than when considering broader constructs, such as functional competence (Fillenbaum, 1987; Lawton and Brody, 1969), which are defined in terms of physical and social as well as cognitive components. The first perspective views everyday competence in terms of a hierarchical model in which subsets of basic cognitive abilities and skills serve as the "building blocks" for more cognitively complex everyday activities. In the second approach, everyday cognitive competence is conceptualized as involving domain-specific knowledge bases. The focus in the third approach is on the fit, or congruence, between the individual's cognitive competency and the environmental demands faced by the individual. Willis (1996) presented a model for the study of everyday problem solving that was based on four assumptions: (1) antecedent characteristics of the problem solver and the sociocultural context; (2) the elderly are active problem solvers who construct a representation of the problem and its solution; (3) characteristics of the task (problem) interact with antecedent characteristics of the individual, and they influence the problem-solving process; and (4) the elderly's competence to solve a given problem reflects a match between the individual's problem-solving skills and the demands and resources of the immediate environment.

Componential and Hierarchical Models

In this section we consider several models that view cognition (including everyday problem solving) as involving multiple components (P. B. Baltes *et al.*, 1984; Labouvie-Vief, 1992; see also Park, 1992). Moreover, many models include a hierarchical perspective of cognition, extending from basic, factorially distinct abilities and skills to higher, more complex levels of cognition that are derived in part from these more basic abilities and skills. Everyday competence is represented as a higher-order complex form of cognition.

TRIARCHIC THEORY OF ADULT INTELLIGENCE. Sternberg (1985) has proposed a triarchic theory of adult intellectual development involving three components: metacomponential processes, experiential and contextual components. The first component, metacomponential processes, consists of processes such as encoding, allocation of mental resources, and monitoring of thought processes. The metacomponential components operate at different levels of experience with a task. Whether the components operate in a novel fashion or are in the process of becoming automatized determines how competent the person is at the task, with eventual automaticity signifying competency in the task. In addition, adjusting to environmental changes requires the capability to apply metacomponents at different levels of experience. The components most

relevant to everyday competence are the experiential and contextual components. Both experience and environmental/contextual conditions impact performance or problem-solving ability.

PRAGMATICS AND MECHANICS OF INTELLIGENCE. Baltes and colleagues (P. B. Baltes *et al.*, 1984) proposed a componential model with two dimensions. In their approach the mechanisms of cognition are considered in terms of psychometric abilities, rather than the information processing model employed by Sternberg in describing metacomponents. Mechanics, the first component of the model, includes basic cognitive operations and structures associated with perceiving relationships, classification, and logical reasoning. "Pragmatics of intelligence" refers to the second component of the model, which encompasses function and application of intelligence, specifically the application of intelligence dependent upon the context. The second component involves generalized systems of knowledge, specialized dimensions of knowledge, and knowledge about factors of performance. This model suggests that everyday competence is more closely associated with the pragmatics of intelligence. The environmental context is critical to the particular form or manifestation in which pragmatic intelligence is shown. Baltes posits that although mechanisms of intelligence decline with age, there is enhancement in the pragmatic component through much of adulthood. This pragmatic component is developed throughout one's life in the form of declarative and procedural knowledge.

"BUILDING BLOCKS" OF COMPETENCE. Hierarchical relationships between basic cognition and everyday competence have been conceptualized by Willis and Schaie (Willis, 1987; Willis and Schaie, 1986, 1993). Basic cognition has been represented by domains of psychometric intelligence, such as the second-order constructs of fluid and crystallized intelligence and the primary mental abilities associated with each higher-order construct. Willis and Schaie suggest that everyday competences, as represented in activities of daily living, are phenotypic expressions of intelligence that are context- or age-specific. The particular activities and behaviors that serve as phenotypic expressions of intelligence vary with the age of the individual, that person's social roles, and the environmental context. Due to the complexity of problem solving in everyday activities, multiple basic cognitive abilities are involved in the process of solving a problem. The specific combination of basic cognitive processes varies for specific task demands and situational constraints. Allaire and Marsiske (1999) have also found that several basic cognitive abilities are involved in everyday cognitive performance. Their research supports the claim that everyday cognition is composed of a set of underlying, basic cognitive abilities, all of which may be drawn upon to solve novel or familiar tasks of daily living.

POSTFORMAL REASONING. Labouvie-Vief (1992) and colleagues (Labouvie-Vief and Hakim-Larson, 1989) have proposed the development in middle and later adulthood of a more pragmatic, concrete, and subjective approach to reality that focuses on inner, personal experiences. These age-related changes refer to the shift from bottom-up to top-down reasoning, meaning that older adults tend to focus on the end result or goal when solving a problem. Hence, they pay less attention to many details and are less likely to check their steps in solving a problem since the emphasis is on the end result. Older adults are believed to selectively use postformal-operational reasoning in everyday problems that are emotionally salient and pertinent to their lives. They rely heavily on prior experiences in solving problems and sometimes have difficulty judging whether prior experiences are relevant to the current tasks. In more recent work, Labouvie-Vief and colleagues (Diehl *et al.*, 1996; Labouvie-Vief, 2000) report that older adults use greater impulse control when applying coping and defense strategies. Labouvie-Vief (2000) found that coping was positively related to crystallized intelligence and reflective cognition, while defense coping was negatively related to these factors.

Domain-specific Models of Competence

This approach maintains that competence involves the development and organization of an increasingly complex and well-integrated body of knowledge that is domain-specific (Salthouse, 1990). The focus is on the manner in which a problem is represented by the problem solver and the increasingly complex manner in which domain-specific knowledge becomes integrated and organized. In

this approach competence is specific to a particular domain or type of task, rather than being a global characteristic of the individual that is reflected in multiple content domains.

An example of domain-specific approach is provided by the work of Hershey and colleagues (1990) on financial decision-making. Through investigation of the different approaches novices and experts employ in solving financial problems, Hershey *et al.* found that experts utilize different information and work faster and more efficiently and accurately, compared to novices. In addition, experts tend to use problem-solving scripts to reach a solution. Through continued exposure and experience with a task, experts evolve sets of rules/scripts/algorithms that guide the identification of important facts and ways to organize these facts to reach a solution. The scripts serve as a template for the experts to use to solve problems encountered in a content domain, ranging from simple to extremely complex problems.

In another approach to study domain-specific knowledge, Sternberg and colleagues (Sternberg, 2002; Sternberg and Grigorenko, 2000) have studied what they call "tacit knowledge," the knowledge gained through the day-to-day experiences of life. They have examined the tacit knowledge acquired by those in a specific profession such as a salesman, engineer, or pharmacist. Tacit knowledge includes not only the factual information regarding chemistry and medications that a pharmacist may acquire, but also an understanding of how a pharmacist should interact and communicate with customers and how they progress professionally throughout their careers. Tacit knowledge is accumulated when individuals learn from their experiences and subsequently are able to achieve goals they consider personally relevant (Sternberg, 2002); Hershey's participants who had a wealth of knowledge regarding finances would be considered "experts" in tacit knowledge. Tacit knowledge would be relevant to everyday competence in the instances when individuals are able to draw upon prior experience, knowledge, and skills to solve encountered problems.

In study of domain-specific problem solving, a distinction is made between well-structured problems and ill-structured problems; ill-structured problems are often the novel experiences where effective problem solving is most pertinent since there is often more than one possible solution. Allaire and Marsiske (2002) investigated well- and ill-structured approaches to measuring everyday cognition. They found that both well- and ill-defined measures of everyday cognition are predictive of real-world outcomes, hence suggesting that utilizing both approaches would be most advantageous in assessing everyday cognition. The domain-specific approach is nondevelopmental; competence arises out of automatization, prior experience, and the development of expertise in specific activities. According to Salthouse (1990), a lack of competence implies a mismatch of demands and skill.

Person–Environment Fit Models

The third approach to everyday competence emphasizes the degree of congruence between the abilities of the individual and the demands and resources available in the environment (Lawton, 1987; Willis, 1996). Competent behaviors occur when there is a match between individual capabilities and environmental demands and resources. For example, an older adult with some cognitive limitations may appear competent with respect to everyday activities when functioning in a supportive environment with many resources. In this perspective, a loss of competence can result from a decrease in individual ability, change in the environmental demands and/or resources, or a combination of the two. Models of person–environment fit emphasize that competence does not solely reside in the individual or the environment, but rather in the fit between the individual and the environment.

ANTECEDENTS OF EVERYDAY COMPETENCE

Everyday competence is a multidimensional concept. Although all of the perspectives addressed above focus specifically on the cognitive aspects of everyday competence, social support, health, personality, belief systems, and environmental demands may also impact everyday competence. Each individual comes to a problem with his/her own unique developmental history, which influences how the adult defines the problem and selects and utilizes strategies for resolving the problem. Many of these antecedent variables are intertwined. Medication compliance, for example, involves not only cognitive processes such as

memory and reasoning but also the sensory ability to read the label, manual dexterity to open the bottle and measure the dosage, and social support.

Cognitive Abilities

Cattell (1987) differentiated between two broad domains of mental abilities: crystallized and fluid abilities. Crystallized abilities tend to remain relatively stable throughout old age, and are said to reflect acculturation influences, such as level of education. In contrast, fluid abilities involve abstract reasoning and speeded responding, and exhibit patterns of decline beginning, on average, in the mid-60s. Hence, depending on whether the tasks are more closely related to underlying fluid or crystallized abilities, older adults' performance on everyday tasks would be expected to show different patterns of developmental change. In an investigation on concurrent relationships between mental abilities and everyday tasks, Willis and colleagues (Willis and Marsiske, 1991; Willis and Schaie, 1986) found that over half of the variance in older adults' performance on everyday tasks could be accounted for by mental ability performance. Additionally, both fluid and crystallized abilities accounted for everyday task performance, with a somewhat greater portion of the variance accounted for by fluid abilities. Through a series of structural equation analyses, Willis *et al.* (1992) found that fluid ability at the first assessment occasion predicted everyday task performance seven years later. In contrast, everyday task performance at the first occasion predicted basic abilities at the second occasion less well (Willis *et al.*, 1992). Overall, the findings supported their hypothesis that level of functioning on basic mental abilities is a significant antecedent of performance on everyday tasks involving printed materials. Allaire and Marsiske (1999) also found that everyday cognition represents "compiled cognition" in that cognitive abilities develop into cognitive competencies that manifest in adult life as everyday cognition. Each everyday task encountered involves multiple basic abilities, thus everyday tasks are cognitively complex because they involve more than one ability. Hence, individuals who experience decline in one or more cognitive abilities may experience increasing difficulty performing the tasks essential in daily life.

While Willis, Marsiske, and Allaire have examined the association between specific abilities and objective everyday task performance, Wolinsky and colleagues (Fitzgerald *et al.*, 1993; Wolinsky *et al.*, 1992) have investigated the relationship between global measures of cognitive functioning, the performance of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs), and self-reports of everyday competence. Wolinsky and colleagues proposed three unidimensional scales termed "basic ADL," "household ADL," and "advanced or cognitive ADL." The basic ADL activities include personal activities such as bathing, dressing, walking, and toileting. The household ADL consists of household chores, meal preparation, and shopping. Managing money, using the telephone, and eating comprise the advanced or cognitive ADL. The advanced ADL was directly associated with global measures of cognitive functioning. Wolinsky's work lends further confirmation to the link between cognitive ability and everyday competence in specifically showing that IADLs in general require more cognitive capabilities than ADLs.

Park and colleagues have examined the association of various aspects of memory to a complex and important everyday task, adherence to a medication regimen (Park, 1992). Based on prior research in the field, Park suggested that both comprehension and retrospective aspects of memory should be problematic for adherence to a medication regimen in older adults. Morrell *et al.* (1989) found significantly more older adults (21 percent) to make errors on comprehension of prescription drug labels than young adults (14 percent). Morrell *et al.* (1989) also found that older adults had considerable difficulty with long-term recall of medication information when it was presented in an experimental setting. When given organizational devices that supported the cognitive demands of the task, the adherence behaviors of older adults improved significantly (Park *et al.*, 1992).

Health

The individual's health impacts not only physical ability to carry out everyday tasks but also the cognitive aspects. Sensory impairment is a major aspect of health that affects everyday problem solving. Branch, Horowitz, and Carr (1989) investigated the

relationship between ability to perform tasks of daily living and visual impairment. Self-reported interviews were compared between those consistently reporting good vision and those reporting a decline in vision over a 5-year period. Results indicated that those reporting a decline in vision were more likely to need assistance with shopping and paying bills, were 1.5 times less likely to leave their residence, and only half as likely to travel by car. Fincham (1988) found that elderly persons with multiple disease pathologies who were taking multiple drugs with complicated regimens were less compliant in taking their medications. Health also has implications for everyday competence when reviewed in terms of social support.

Social Support

As people age, everyday competence involves the ability to adapt to changing situations in one's health and the environment. Antonucci and Jackson (1987) have proposed the Support/Efficacy Model of social relations to explain the processes and mechanisms through which social relations might have an observed positive effect on health and wellbeing. This model predicts that supportive others help older people set and meet goals that maximize adaptation to the challenges of ageing or illnesses. For older adults, this model has been applied most directly to the health/disease continuum.

Researchers have demonstrated the effect of supportive others on maintaining effective lifestyles and health behaviors at the predisease level (Rakowski *et al.*, 1988; Umberson, 1987). At the point of a specific health crisis, supportive others can help with treatment choices, or simply reassurance. Finally, supportive others can provide psychological support in the rehabilitation period; this is an especially critical time when social relations with others are essential in providing motivation to recover. Aside from strictly health-related social support, Antonucci and Akiyama (1997) state that social support for older adults includes confiding, reassurance, respect, talking about problems, and talking about health. In a study of older African Americans, Whitfield and Wiggins (2003) found that social support is a predictor of everyday problem solving. Whitfield and Wiggins noted that both giving and receiving social support are important contributors to everyday competence, and that those who gave social support had higher levels of everyday problem solving. Their research also contributed support to the view that physical limitations partially mediate the relationship between social support and everyday problem solving.

Personality

Personality traits display remarkable stability throughout the adult lifecourse (McCrae and Costa, 1990). Hence, personality or cognitive-style variables can provide important information on individual differences associated with how problems are represented, coped with, or resolved. Cox (1967) investigated the association between personality characteristics, cognitive style, and willingness to try innovative products. Those tolerant of ambiguity engaged in more extensive information searches, particularly when ambiguous or discrepant information about products was involved (Schaninger and Schiglimpaglia, 1981). Those intolerant of ambiguity or high in trait anxiety were less likely to be attracted to or to buy products that were novel, complex, or innovative. When examining the cognitive styles of simplifiers versus clarifiers in relation to problem solving in the consumer context, Cox (1967) found that simplifiers tended to react to uncertain or inconsistent product information by avoiding the incongruent information. By contrast, clarifiers actively sought new and additional information in order to reduce the ambiguity or inconsistencies.

Leventhal and colleagues (1993) noted the salience of personality characteristics, such as tolerance for ambiguity, in medical decision-making. When compared to middle-aged adults, older patients made quicker decisions when they were ill and also sought medical care sooner when they judged the condition to be serious. Quicker decision-making was interpreted as being due to less tolerance of ambiguity and the need to reduce uncertainty on the part of the older adults. Meyer and colleagues (1995) also found that, in making decisions about treatment for breast cancer, older women made quicker decisions and were more likely to seek less information about treatment than younger women. Evidence from this research suggests that personality

characteristics may impact not only the desired outcome, but also the strategy chosen to achieve that outcome.

Belief Systems about Knowledge

Kuhn (1992) has suggested that individuals' beliefs about knowledge and ways of knowing influence their approaches to problem solving. Three types of belief systems were identified based on the certainty of knowledge and the process by which knowledge is acquired. The absolutists believe that knowledge is certain and cumulative; even complex questions can be answered with complete certainty. Multiplists or relativists hold that no knowledge is absolutely certain, and that all opinions are of equal validity. The third type, evaluative, viewed knowing as a process rather than a certainty, and the focus was on use of thinking, evaluation, and argument in order to examine the relative merits of various types of information. The work of Kuhn and others (Kramer and Woodruff, 1986) suggest that individuals' beliefs about the certainty of knowledge and ways of knowing may be more salient in their approach to the problem than the characteristics of the problem as defined by the investigator.

Berg and colleagues (1998) have examined the impact of individual characteristics on everyday problem solving. They found that how the individuals defined the problem was reflected through interpersonal characteristics or competence components or both. Strategies used reflected altering cognitions, actions, or regulating and including others. Age differences were also observed in how the problem was defined. These results demonstrate the importance of individuals' definition of the problem for addressing the effects of age and context on strategy use. Hence individual differences emerge in defining the problem, strategy used to solve the problem, and context of the problem, all of which impact everyday problem solving.

MEASUREMENT OF EVERYDAY COMPETENCE

Everyday competence is defined in terms of ability to maintain an autonomous lifestyle. Measures of competence then focus on activities involved in living independently. In the field of gerontology and geriatrics, requirements for maintaining independent living have generally focused on the ability to complete certain common activities of daily living. Katz and colleagues (1963) devised one set of criteria termed the Activities of Daily Living (ADLs). ADLs include tasks that are primarily concerned with self-care, such as feeding, bathing, toileting, and basic mobility. Lawton and Brody (1969) also have a set of criteria associated with more complex tasks of independent living. These tasks are known as the Instrumental Activities of Daily Living (IADLs). Seven domains comprise the IADLs including managing medications, shopping for necessities, managing one's finances, using transportation, using the telephone, maintaining one's household (housekeeping), and meal preparation and nutrition (Fillenbaum, 1985; Lawton and Brody, 1969). The ADLs and IADLs are generally included when appraising everyday competence. ADL and IADL serve as phenotypic expressions of everyday intelligence that vary with age, social roles, and environmental context (Schaie and Willis, 1999). Three approaches to assessment of everyday competence have been studied: objective measures, subjective measures, and behavioral observation. There are benefits and limitations to each type of assessment, hence using more than one type of measure when assessing everyday competence is optimal.

Subjective Assessments of Everyday Competence

The traditional and most common assessment approach involves subjective ratings of everyday competence. This type of measure reflects the individual's perception of his/her own skills and abilities. One commonly used measure is the Instrumental Activities of Daily Living (IADL; Lawton and Brody, 1969), in which individuals report the degree of help needed with these activities. Usually self-report measures also contain descriptions of tasks primarily concerned with self-care, such as feeding, bathing, toileting, and basic mobility, for which individuals must also report the degree of help needed. Often subjective measures require the individual to report how well he/she performs tasks relative to others in their same age group or cohort. Although self-reports may not be completely

accurate, use of a subjective measure may dissipate anxiety, fatigue, unfamiliarity, and other biases imposed by objective measures.

In an attempt to capture multiple levels of self-reported competence, and hence a more complete representation of everyday competence, in the Berlin Aging Study M. M. Baltes and colleagues (1999) differentiated between a basic level of competence and an expanded level of competence. A basic level of competence included the ability to perform activities necessary to maintain health and independence, such as bathing, eating, dressing, and shopping. An expanded level of competence was composed of activities based on individual preferences, skills, motivations, and interests. Results indicated that there was a direct relationship between basic and expanded levels of competence.

Objective Assessments of Everyday Competence

In objective assessment of everyday competence the elder is presented with a description or stimulus material (e.g. prescription label) related to an everyday task and then asked to solve one or more problems related to the task. The measures vary in types of everyday tasks included and how the accuracy of elders' responses are evaluated or scored.

Willis and her colleagues (Marsiske and Willis, 1995; Willis and Marsiske, 1991; Willis and Schaie, 1993) developed an instrument designed to assess skills associated with the IADL domains. Some of the categories are similar to those evaluated in the Basic Skills Test. The Everyday Problems Test (EPT) consists of seven scales including food preparation, medication use, telephone use, shopping and consumerism, financial management, housekeeping, and transportation. Reliability estimates for the EPT have been in the moderate to high range (Marsiske and Willis, 1995). Although the Basic Skills Test and the EPT reflect an individual's competency level in certain domains, as opposed to the single index score produced by the Minimental State Examination (MMSE) and the Dementia Severity Rating Scale (DRS), the content of these measures constrains the definition of competence to the domains assessed. In addition, even though the tasks assessed are relevant to daily life, the method in which participants must respond to the tasks differs from daily life, responding as a paper-and-pencil task as opposed to actively doing the task.

Cornelius and Caspi (1987) took a different approach to assessing everyday competence. Using Goldfried and D'Zurilla's (1969) behavior-analytic model for assessing competence, Cornelius and Caspi devised the Everyday Problem Solving Inventory (EPSI; 1987). This measure consisted of six content domains described as problems that an adult might experience: (a) as an economic consumer, (b) in dealing with complex or technical information, (c) in managing a home, (d) in resolving interpersonal conflicts with one's family members, (e) in resolving conflicts with friends, and (f) in conflict resolution with co-workers. Two characteristics of the various situations were of particular importance, the age relevance of the situations and the person who caused the problem. This inventory considers four possible responses based on the literature on coping with real-life stressors (Lazarus and Folkman, 1984). The four possible response modes were: (1) problem-focused action, (2) cognitive problem analysis, (3) passive-dependent behavior, and (4) avoidant thinking and denial. Judges evaluated the adequacy of each response mode for a given problem.

In a third approach to objective assessment, Denney and her colleagues (Denney and Palmer, 1981; Denney *et al.*, 1982) have also done research on practical problem solving. Denney's work is primarily based upon open-ended responses to hypothetical problems (Denney and Pearce, 1989).

Although many objective instruments measuring everyday competence exist, not much research on convergence among these instruments has been explored. Marsiske and Willis (1995) investigated the relationships among the Practical Problems Test (Denney and Pearce, 1989), the Everyday Problem Solving Inventory: Situational decision making (Cornelius and Caspi, 1987), and the Everyday Problems Test (Willis and Marsiske, 1991). Results indicated that, although there was little relation between the instruments, content domains within each of the instruments could be identified. Marsiske and Willis (1995) noted that these findings may be because the three instruments assess different tasks, and possibly even distinct aspects of everyday cognition. In addition, the various measures employed may have required the use of

different combinations of cognitive abilities. Results from this study simply reiterate that everyday competence is a multidimensional construct involving many cognitive abilities.

Behavioral Observation of Everyday Competence

A third type of measure of everyday competence is behavioral observation. When behavioral observation methods are used, an individual is observed when completing a subset of tasks, usually IADLs such as counting change, telling the time, and looking up a number in the phone book. One behavioral observation measure is the Observational Tasks of Daily Living (OTDL; Diehl *et al.*, 1995). This measure evaluates food preparation, medication intake, and telephone use. Individuals are required to read material and then perform the appropriate actions to complete a task. A second type of behavioral observation measure is The Direct Assessment of Functional Status (DAFS; Loewenstein *et al.*, 1989) that measures time orientation, communication, finances, shopping, eating, and dressing. The DAFS was developed for use with cognitively challenged elders, while the OTDL was developed for use with nondemented, community-dwelling elders. An obvious limitation of behavioral observation is that ratings are based on observers, which presents the possibility of bias. Additionally, although actively performing the task is a more realistic assessment than a paper-and-pencil one, there is still the possibility that the individual must perform the task out of context.

Researchers have reported only modest correlations between self-reports and objective or behavioral measures of functional competence (Fillenbaum, 1978; Willis, 1996). The association between objective and behavioral measures is much higher than between objective/behavioral measures and self-report measures. The antecedents found to be related to objective versus subjective assessments often differ. For example, cognitive ability has been found to show a higher association with objective and behavioral assessments. In contrast, health status, report of disease and disability, use of health services, and social support have been found to exhibit a stronger relation to subjective assessments than to some objective/behavioral measures. Health-related values show a significant but more modest association with objective/behavioral measures.

Due in part to the influence of different antecedent variables for objective versus subjective measurements, the two types of assessment would not be expected to have a high association.

MAINTAINING EVERYDAY COMPETENCE

It is obvious that everyday competence is a dynamic process involving characteristics of the individual and of the environment that change quantitatively and qualitatively throughout adulthood. Thus, theoretical models and measures of everyday functioning need to include not only the level of functioning of the individual, but also quantitative and qualitative changes and rate of change in functioning. Since maintaining an independent lifestyle is so important to older adults, strategies or methods to facilitate maintenance of everyday competence is of concern to both the individual and society. Competence in everyday problem solving occurs when the abilities of the problem solver are congruent with the demands of the environment. Throughout adult development, the shifts in individual ability and situational demands require older adults constantly to familiarize and adapt to novel circumstances. One of the most noticeable declines that older adults face as tasks take on increasing complexity is in their reaction time. Additionally, fluid and visualization abilities tend to experience decline with increasing age. Maintenance of everyday competence can be facilitated in at least three ways: through social or institutional support, environmental modifications, and behavioral interventions.

The Support/Efficacy model of social relations proposed by Antonucci and Jackson (1987) describes how supportive social relationships can have a positive effect on health and wellbeing. Since changes in physical health or health status often accompany the ageing process, the assistance of supportive others can help older adults cope and adjust to the challenges of ageing, especially functional/behavioral impairments. Thus, the support of others can not only aid older adults at the time of health crisis and recovery, but can also help older adults adopt/maintain appropriate preventative health measures, such as proper nutrition, seatbelt use, and medication compliance, contributing

to the person–environment fit. Social support is most commonly provided by family and friends. However, there is also formal, institutional support from community, state, and federal agencies. Programs such as Share a Ride, Meals on Wheels, and Fuel Subsidies are examples of formal institutional support.

Modifying the environment, and thus decreasing environmental demands, is a second method that can prolong independent living for older adults. There are many environmental modifications that can be instituted to increase an individual's capability to live independently. An individual's home environment could be physically modified to make it easier to bathe and cook by adding devices to assist the older adult with these tasks. In addition, older adults could receive assistance with shopping by utilizing a grocery delivery service. Social services, such as meals on wheels, transportation, and medical care professionals, could also be employed to facilitate independent living. Family members and/or friends could also help contribute to the older adult's independence by assisting with ADLs and/or IADLs.

Another way to promote everyday competence in older adults is through interventions. Interventions differ from modifications in that interventions focus on increasing the individual's skill level, rather than decreasing the environmental demands. Most research on increasing individual skill has focused on cognitive training programs. Cognitive training programs can serve as a preventative measure for those individuals who have not yet experienced decline, or as an intervention for those who have begun to show slight decline. The purpose of cognitive training programs is to help prevent further decline and possibly remedy any decline already experienced. The targeted abilities for most training programs include fluid abilities such as inductive reasoning, processing speed, spatial orientation, and verbal memory. To date, cognitive training programs have focused on a single ability. Much research has demonstrated that the cognitive training programs were able to improve individual skill level on the single ability trained. However, since everyday competence is a multidimensional construct involving multiple abilities, future behavioral interventions may need to develop programs training individuals on multiple abilities. Training on these abilities can affect the cognitive abilities associated with daily functioning.

The overarching purpose of training programs is to improve skill on cognitive ability in addition to improving quality of life for older adults in terms of health and mobility. One of the most recent training programs, A Cognitive Intervention Trial to Promote Independence in Older Adults (ACTIVE; Jobe *et al.*, 2001), attempts to produce primary and secondary outcomes through training older adults on the abilities of memory, reasoning, and speed of processing. Hence, the researchers are attempting to enhance everyday functioning and secondarily to influence health-related quality of life, mobility, and health service utilization, by training individuals on cognitive abilities.

Prior research on everyday problem solving has focused primarily on elders in young-old and old-old age. Thus, the tasks of everyday problem solving most intensively studied have been those encountered by those 60 to 75 years of age. However, most adults live independently into their 80s and increasingly into their 90s. Thus, the study of everyday functioning must increasingly consider changes in everyday functioning occurring in the oldest-old. Cross-sectional and the more limited longitudinal research available suggests that decline in everyday functioning occurs somewhat later than for the fluid basic abilities. Poon *et al.* (1992) found negative age effects on all cognitive measures, with the exception of a practical problem-solving measure by Denney and colleagues (Denney *et al.*, 1982). However, after age 75 or 80, the rate of decline in everyday tasks increases markedly. Thus, the oldest-old are most vulnerable to notable decline in the tasks required to live independently (Marsiske and Willis, 1995).

Maintaining the ability to solve problems encountered in daily life effectively is essential for older adults to retain their ability to live independently. Although cognitive factors are extremely important to everyday problem solving, other factors such as health, personality, social support, belief systems, and environmental context must be considered as well. Due to the variety of tasks encountered in daily life, all of the abilities are important to everyday competence. Individuals must attempt to prevent any cognitive abilities from experiencing decline if maintaining competence to live independently is desired. All of the individual factors

involved in everyday problem solving can impact one's ability to maintain an independent lifestyle. Hence, all of these individual factors must also be considered when employing preventative measures, environmental modifications, and/or interventions.

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