

Cognitive Support for the Elderly at Risk

An Orientation to the Potential for Intervention

Questions and Answers

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What is the population? What are the needs?

The rapidly expanding proportion of the population of older individuals, with attendant medical, residential care, and social adjustment issues demands new and adaptive responses to both individual, family, and societal needs. The general goals are to improve the quality of life for the elderly, prevent mental deterioration, and enable society to care for and integrate a major component of its population in ways that are both effective and within the financial resources of the community.

The FIE-E program, and the mediation given to the elderly participant offers promise to improve the quality of life and affect changes in the cognitive functioning of the elderly, by addressing three levels of need: ***preventing*** of deterioration, ***decelerating*** the loss of functions and decline in mental processes, and ***restoring*** functions or processes that have been lost. There is both clinical and research evidence that this is possible, and that the program described here is a relevant response to meet these needs.

The characteristics of the elderly population for whom this program is appropriate can be described in two ways:

- (1) ***Those individuals who experience conditions related to the processes of aging:*** forgetfulness, loss of memory, limited orientation to time and space. This is not necessarily pathogenic, but can become so if allowed to degenerate over time.

(2) ***Those individuals to experience a deterioration in functioning due to a lack of stimulation or challenge:*** they are no longer engaged in intellectually demanding activities, required to cope with the natural stresses of life (for which they developed and sustained successful coping strategies, and thus no longer have a need to invest energy and engagement with the stimulating world they were previously engaged with.

What goals should we seek for the elder population?

Innovative practices are now available to achieve these outcomes. Evidence from research in neurophysiology, and brain plasticity, indicate that the structure of our brain, and not only our behaviors are highly modifiable. There is clear evidence that using a systematic approach to the modifiability of cognition (thinking and learning) will both benefit the elderly client and broaden the range of beneficial options for the caregiver and care providers.

What can be done to reach these goals?

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The Feuerstein Instrumental Enrichment for the Elderly (FIE-E) program promotes cognitive modifiability through the application of specially designed and presented tasks, using the approach of mediated learning experience (MLE)—described in Feuerstein, Feuerstein, Falik, and Rand's *book Enhancing and Creating Cognitive Modifiability: The Feuerstein Instrumental Enrichment Program* (2006). There is a clearly defined technology supporting the potential for cognitive modifiability in the elderly that not only improves their day-to-day functional potential but also promises to have more lasting and salutary effects on both emotional and intellectual dimensions of functioning. Specifically, the application FIE-E program will respond to the following goals:

- Prevention of mental deterioration
- Slowing processes of mental deterioration
- Recovering lost functions
- Overall improvement in the quality of life leading to active and aware engagement in life experience.

What is cognitive support?

There are many aspects of cognitive functioning that can be mobilized to help the elderly person maintain and overcome the normal and pathological effects of aging. The research in neural plasticity has identified ten elements that contribute to the cognitive modifiability of behavioral and neural processes. When these are reflected in interventions, they provide stimulation that is both intriguing and enticing (of attention and further engagement). Each of these are presented to the recipient of the program in a systematic, intensive, and mediated way, and are designed to promote and support the changes required by the elderly:

- ***Activation:*** requiring active participation.
- ***Specificity:*** interventions are related to specific cortical functions.
- ***Repetition:*** activities must be repeated, for assimilation; but also varied to provide for elaborated learning (transformations).
- ***Intensity:*** exposure must be extensive, over longer periods and extended duration to become established in the neural structure.
- ***Novelty:*** activities must be new and challenging; tasks that are over-familiar tasks do not stimulate the changes creating neural plasticity.
- ***Persistence:*** different forms of plasticity occur at different time and pace, thus requiring continued and repeated efforts over time to secure effects.
- ***Salience:*** the stimulation must be meaningful and relevant for the learner.
- ***Optimal Timing:*** while the individual is modifiable at all ages, certain stimulation is more optimal at certain ages and developmental levels, and thus stimulation must recognize and calibrate interventions accordingly.
- ***Spread of Effect:*** changes in functions from one intervention will affect other areas not initially targeted, leading to a transference of learning and behavioral responding.
- ***Selection Effect:*** activities must be selected to stimulate existing and needed cognitive functions, and adapted to observed changes in behavior.

We have added two more reflecting our experience working with this

population:

- **Consciousness/Awareness:** the learner must be aware of the effect of functions on behavioral outcomes, that in turn reinforces other changes in functioning.
- **Multi-Sensory Stimulation:** tasks should require perceiving and responding to stimuli from many different modalities--seeing, hearing, feeling, and doing.

How does the FIE-E program accomplish these effects?

The FIE-E program consists of 14 instruments, or series of activities, that stimulate mental development through perceptual and motor planning, searching for relevant information, solving problems of increasing complexity, using rules and strategies in situations that vary from one another but elaborate from what has been learned and practiced to higher levels of complexity and abstraction. The learner develops accuracy at gathering information, applying information to solve problems, using strategies on both similar and different problems, and applying what has been learned to a wide range of life experiences.

Some examples of the ways in which the FIE-E program does this are:

- ❖ searching and finding geometric forms in a cloud of amorphous dots (***Organization of Dots***),
- ❖ identifying relative positions in personal and geographic space (***Orientation in Space-I; Orientation in Space-II***),
- ❖ considering characteristics of objects in order to compare create relationships among them (***Comparisons***),
- ❖ analyzing part/whole relationships using geometric forms (***Analytic Perception***),
- ❖ maintaining and manipulating relationships in time and space (***Temporal Relations***), in more abstract relationships such as familiar family systems (***Family Relations***),
- ❖ classifying objects and events in groups and subgroups (***Categorization***),
- ❖ following complex directions in verbal and figural modalities (***Instructions***),
- ❖ decoding visual patterns and numerical patterns according to rules and relationships (***Representational Stencil Design and Numerical Progressions***), and
- ❖ using analogical and transitive thinking to develop complex, abstract relationships (***Syllogisms and Transitive Relations***).

The FIE-E program is a series of paper and pencil activities that is presented to

the elderly participant in small groups, or on an individualized basis. It can be done for short periods of time, as little as 10 minutes or up to 45 to 60 minutes, on a daily basis or scheduled 3 or 4 times per week. It can be done in the elderly's natural environment, without any need for special equipment or modifications, other than the program materials. It is highly interactive, creating an active relationship between the program provider (whom we call the "mediator") and the participant. The mediational relationship creates a need for active involvement of the elderly participant with the tasks of the program, and extends beyond the program into the full range of daily life interactions.

There is a more complete description available, with examples and brief explanations of how the tasks/activities of the program meet and facilitate the learning objectives of the program—with particular reference to the needs of the elderly population.

Beneficial Effects for the Client/for the Caregiver:

For the client: For both populations described above, the FIE-E program is proposed as a vehicle to offer substitutive thinking and problem-solving experiences that compensate for the effects of the above described conditions, and further enhance intellectual, cognitive, and social development, overcoming the mental deterioration that often accompanies aging. Individuals with both types of needs can be expected to benefit from the program due to their levels of self-awareness, social responsiveness, and awareness/desire to be connected with the world around them.

For the caregiver: A critical aspect of implementing the FIE-E program is the training and support of caregivers—both those with a professional orientation (occupational therapists, speech therapists, activity therapists, nurses, etc.) and those who are highly skilled but come from a paraprofessional background. In this regard, this training and support can be viewed as innovative and multi-disciplinary, both in content and implementation of training. This is possible because: (1) they have a great deal of time to be with their clients and can infuse cognitive elements in their daily caretaking duties, (2) the cognitive elements infused with increase interest and engagement for both the caregiver and the client (reducing boredom, giving them a common language), and (3) the level of "professionalism" of the caretaker will be enhanced, leading job retention, improvements in quality and scope of care, and the like--again bringing benefits to both themselves and their clients.

The training of caregivers, from the perspective of FIE-E, will include:

- ❖ ***Awareness:*** the need and belief that caretaking is a positive life and mentally enhancing experience. The caregiver learns that the adult client can learn and be modified to improve the quality of life.

- ❖ **Task Analysis:** assessment of the needs of the client, the setting in which the care giving occurs, and selection of relevant activity, both within the FIE-E experience and in activities of daily life.
- ❖ **Consultation and Coaching:** observation of the caregiver's responding to their clients, and offering suggestions or demonstrating new or different ways of responding. This can include identification of problems or difficulties encountered in the setting, with ways of solving them.

Where is care given, and what are the issues of implementation?

The FIE-E program can be applied in a number of different settings, each of which will have their own strategic and care provision options (that must be reflected in the program implementation and caregiver training models). The differing venues for application are:

- ❖ adult day care settings
- ❖ in-home, individualized care
- ❖ independent living environments
- ❖ skilled nursing facilities
- ❖ hospitals and rehabilitation settings
- ❖ community centers

For most settings, the implementation of the FIE-E does not require substantial increases in financial resources. This is because the interventions are designed, in large part, to support and enhance ongoing activities. As a brief summary of the ways in which the program is integrated into care provision settings, are the following:

Caregivers can receive training in the implementation of the FIE-E program (comprising between 20 to 40 hours of exposure). They learn how to bring the cognitive modifiability engendered by the FIE-E program to the learners, and bring MLE into their daily life interactions with their clients—bridging from program to practice.

A second aspect of training is learning how to present and mediate the instruments of the FIE-E program to the clients. In this, the caregivers learn the instruments—the tasks of the tools, and how to mediate them to the elderly learners.

The training can be in either (1) a concentrated, intensive seminar occurring over a short period of time (one to two weeks), or (2) spread over a longer time period, and integrated into other training or support activities occurring in the care setting.

The training is offered as a group experience, to enhance the sharing of knowledge and bringing the learning into the most efficient application for the integration of cognitive aspects into the caregiving context. It can be a specially constructed training experience (focusing on the cognitive aspects) or designed to fit into the ongoing, training and in-service support required by the setting (thereby becoming *adjunctive* to existing training).

The caregivers can be either or both those who provide daily care to clients (with ADL's) or those who have specific activity-based care responsibilities—such as activity therapists, “educational” providers, and others (see above).

The focus of training can be differentiated in differing ways:

- (1) Integrating cognitive aspects into activities of daily living (ADL's), with the potential of improving the experiences for the clients by increasing their understanding and focused participation in them, and
- (2) As a “life style” program, going beyond simple ADL's, adding meaningfulness, engaging in activities that enhance cognitive and intellectual processes by using what is experienced in the instruments, and going beyond them to engage in activities made meaningful through exposure to the FIE-E program.
- (3) The care providing setting can arrange to have the training received by the caregivers accepted as meeting governmental or existing required professional accreditation standards for in-service, ongoing training.
- (4) Once trained, the caregivers then provide direct and activity based cognitive learning experiences to the elderly clients—based on schedules appropriate to the needs and organization of the venue and the personnel and goal objectives already described above.