

Never Say Never to Learning – Dynamic Cognitive Intervention (DCI) for persons with Severe Mental Illness

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Abstract

The purpose of this paper is to describe evidence-based research carried out in populations related to the field of mental health, based on the theories and work done by Prof. Reuven Feuerstein. These studies originated from Hadas-Lidor's Dynamic Cognitive Intervention (DCI) approach, which is derived from Feuerstein's Structural Cognitive Modifiability theory. DCI is specifically intended for enhancement of therapeutic-based relationships with a direct emphasis on emotional-related issues and the way they affect cognitive development.

One of the populations in which functional-cognitive abilities may be compromised is the population of people coping with mental disorders, due to effects of the illness and/or medication side effects.

The outlook for people diagnosed with mental illness has improved in the past several decades due to reasons related to brain research development, third generation medications and various psychosocial and cognitive treatments. These have allowed those coping with mental illness to achieve meaningful recovery, manage residual symptoms, and lead productive lives. Yet additional efforts are needed to consolidate these improvements and help more people with mental illness to reach these goals.

Due to the negative effects of mental illness, positive communication skills and abilities may be compromised, whether for those coping with mental illness themselves, or for those providing care for them either professionally or as family members. In order to enhance learning and cognition, improve communication and instill hope and meaning for all involved, the DCI approach provides a basis for various interventions related to mental health that promote resilience, participation and recovery.

DCI incorporates use of Mediated Learning Experiences, exercises from Feuerstein's Instrumental Enrichment program, and additional tools developed, such as reading and writing tasks, utilization of personal picture albums and Meaningful Interactional Life Episodes (MILEs). The studies reviewed in this

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article include evidence for the benefits of DCI based interventions structured for those coping with mental illness, family, and professional caregivers.

Keywords

Feuerstein, Mental Health, Recovery, Caregivers, cognitive intervention

Introduction

Over the past fifty years the field of mental health care has greatly developed. In the past, mental illness was often associated with neuro-cognitive degeneration and chronic deterioration of cognitive functions and abilities, with no hope for rehabilitation and recovery. This usually was translated into a focus on disability and weaknesses, social exclusion, lessened participation and a lack of independence. For many years those suffering from mental illness did not receive cognitive therapy, due to the belief that the cognitive impairment was irreversible, together with the fact that cognitive intervention foundations were based on neuropsychology and therefore applied primarily for people coping with brain injury (Green *et al.*, 2000).

In recent years there are growing interactions between the fields of mental health and neuroscience research. Current trends in research on brain plasticity, together with the exponential growth in new technology, show the brain to be a far more plastic organ than previously thought (Doidge, 2007; Kleim & Jones, 2008). After injury, the brain is capable of considerable reorganization that forms the basis for functional recovery (Sohlberg & Mateer, 2001). The fact that specific alterations in behaviour are reflected in characteristic functional changes in the brain is currently accepted by biologists (Kandel, 1998, 2006). Thus, the ideas related to cognitive modifiability expressed by Feuerstein (Feuerstein *et al.*, 1979; Feuerstein *et al.*, 1980), pertaining to structural cognitive changes, are being found to be not just theoretical but are becoming scientifically validated (Hadas-Lidor *et al.*, 2011).

Thanks to the developments in the field of brain research as it relates to mental illness, together with advances in psycho-pharmacology, new attitudes and approaches that promote recovery, community integration and rehabilitation are developing. These include psycho-education and psycho-social approaches and programs, cognitive interventions, psychiatric rehabil-

itation approaches and settings. These have brought about a huge change in the quality of life of many people coping with severe mental health illness (Lachman & Hadas-Lidor, 2003).

Concurrent with the changes in the mental health field, in the 80s' the consumers of mental health services started the Recovery movement. The recovery movement has turned into the central approach to interventions in mental health, primarily within the community (Friedli, 2010). In Recovery, illness is viewed as a process and journey toward a satisfying and meaningful life despite the illness, instead of regarding recovery as a 'cure' (Anthony, 1993; Deegan, 1996; Liberman & Kopelowitz, 2005). Recovery places an emphasis on therapeutic relationships, demanding that providers collaborate closely with each consumer to discover their unique path to healing (Tew *et al.*, 2011). Recovery is defined as a deeply, personal, unique process of changing one's attitudes, values, feelings, goals, skills and roles. It is a way of living a satisfying, hopeful and contributing life even with limitations caused by the illness. Recovery involves the development of new meaning and purpose in one's life, as one goes beyond the catastrophic effects of mental illness (Anthony, 1993).

Feuerstein and the Recovery movement share common beliefs and concepts, such as the belief in a persons' ability to change, focusing on strengths and not weaknesses, hope, the importance of experiencing competency. Hadas-Lidor, in the development of DCI combines these entities, both in theory and practice.

There is a growing body of knowledge that provides evidence that cognition is a good predictor of functional rehabilitation outcomes in schizophrenia (Green *et al.*, 2000). Cognitive interventions, whether in group or individual format, have become one of the central methods of intervention in this population (Silverstein *et al.*, 2001). The literature provides evidence to the fact that cognitive interventions are beneficial for the population of the people with severe mental illness (Bellack *et al.*, 2004; Hadas-Lidor *et al.*, 2001; Kandel, 1998; Kern *et al.*, 2001; Silverstein *et al.*, 2001; Spaulding, 1994).

One of the developments in the field of cognitive interventions in mental health is based on the theories developed by Feuerstein (Feuerstein, Rand, Hoffman, & Miller 1980; 2006).

Feuerstein (1980) formulated his theory of Structural Cognitive Modifiability (SCM), which presented the human being as an open system that can be modified regardless of age and disability status. In general, Feuerstein's

approach is concerned first with the cognitive prerequisites of human learning and problem-solving abilities; second, with examining why these abilities fail to develop during early childhood in the absence of human mediation; third, with focusing on systematic learning mediated by a caring adult; and fourth, with how much later than generally thought possible, identified cognitive deficits can be remediated by a formal instructional program. This formal program is based on a deductive style of training and teaching. Hadas-Lidor and her colleagues' contributions' to the field of dynamic cognition is in her approach being therapeutically based while including Recovery and rehabilitative approaches, together with putting a direct emphasis on emotional-related issues and the way they affect cognitive development and function. Her developing theory, over the past 20 years, Dynamic Cognitive Intervention (DCI) evolved from her being an occupational therapist in the field of mental health. Activity, participation and task analysis make up the core of the Occupational therapy profession. Cognition is one of the abilities both targeted as an outcome as well as a pathway to achieve participation in everyday life activities and community integration. Following her exposure to Feuerstein's theories she applied this knowledge to structuring the Dynamic Cognitive Intervention (Hadas-Lidor, Kozulin, & Weiss, 2011), primarily for use in mental health but gradually expanding and applied with a broad range of clients coping with various disabilities such as, learning disorders, ADHD, acquired and traumatic brain injuries, dementia and old age, etc.

DCI emphasizes the human emotional experience in combination with communication, cognition and activity in various life situations. Its purpose is to enrich the learner and expand his range of coping and behavioural strategies. This expansion happens with the use of Feuerstein mediation principles that underwent renewed interpretation, to include and highlight the addressing of emotional aspects within everyday life interactions. For example, Mediation of meaning is interpreted not just as in the meaning and understanding of things socially and culturally, rather, what is personally experienced as being meaningful, accentuating on what has meaning for me, providing an emotional substance experienced by both learner and mediator. Mediation of Competence, is not just focusing on a feeling of ability, rather, it also includes strategies to build up feelings of ability, such as, provision of feedback, focusing on learning from successes, active listening and more. Transference is not just linking a specific activity with others to promote the acquisition of principles or concepts. It is a tool used to actively en-

hance and bring into awareness meta- cognition by teaching the cognitive principles and mediation components themselves in order to promote both occupational and social skills.

In addition to Instrumental Enrichment, various intervention techniques are activated, such as using family picture albums, reading and writing assignments, one of which is the Meaningful Interactional Life Episode (MILE). MILEs are used in order to enhance learning and encourage the transfer of knowledge and communication skills acquired during DCI individual or group interventions, to participants' natural environment. MILEs are real-life documented verbal interactions experienced and submitted by those receiving DCI. The DCI expert analyses these MILEs and provides feedback to DCI recipient regarding central components crucial to the development of learning and/or improved communications that are present or lacking within the MILE (Weiss, 2013).

DCI principles

1. The intervention is structured in accordance with the consumers' choices and needs and not in relation to the diagnosis or the aetiology of the illness.
2. Throughout the intervention there is a continuous process of discourse between mediator and person receiving DCI regarding goals, purpose, progression rate and the intervention methodology.
3. The DCI involves relating to various life aspects and roles- as long as the Mediator uses Mediation within the verbal interaction taking place throughout the intervention.
4. Meta-cognition is used, as DCI principles and intervention strategies are shared and explained to person receiving the intervention, following the belief, which professional tools of trade have to be shared as much as possible with the person receiving the intervention (Knowledge Translation).
5. The entire intervention process is based on mediation, therefore, mediation is taught as a unique and separate methodology, to be applied in every interaction. This entails specialized courses for the teaching of Mediation.

6. All those involved with the person receiving the intervention are familiarized with Mediation strategies.
7. There is no definitive line drawn between assessment, intervention and follow-up. They are intertwined throughout the entire process.
8. Highlighting, cognitive enquiry and analysis of experiences of success, rather than focusing on difficulties and failures. This enables learning from success and turns success into a model for replication.
9. Clearly defining between emotions, cognition and actions is used to help understand the central role cognition plays within interactions, as well as to enable improved cognitive self-control and improved understanding of others participating in interaction.
10. Coexistence of Competence and Dysfunction- Focus on incorporation of different characteristics that permanently reside side by side in each and every one of us, in particular important for persons coping with mental health illness.

DCI additionally expands Feuerstein's approach in relevance to the environmental component. For years, Feuerstein related to the environment as being dynamic and opposed segregation of persons with special needs. DCI goes beyond this by focusing on the human component in the environment- parents, family, caregivers and professionals involved in caring for those with special needs , under the assumption that it is not enough to improve the persons self-ability to learn, but together with a change in the belief system of the carer, in his/her ability to have faith in the person under care on a basis of equality together with acquiring the ability to improve communications by use of mediation techniques based on Mediated Learning Experience parameters- towards promoting Recovery-change, rehabilitation and integration. There is a growing body of studies based on DCI principles. Those that focus on populations of persons coping with mental illness; studies that focus on family caregivers: and studies that focus on professionals. A number of these studies are described below.

Research based on DCI in the mental health illness consumer population

Hadas-Lidor, Katz, Tyano, and Weizman (2001) conducted the first study based on SCM together with the above mentioned DCI principles in which they investigated the effectiveness of cognitive dynamic treatment through the use of IE with adults with mental illness. The participants included 60 consumers who had been diagnosed with schizophrenia and required treatment at a rehabilitation day centre. The consumers were randomly assigned into two groups; one was given IE as the intervention, and the control group received traditional intervention, which included participation in newspaper groups, arts and crafts. In the study group only certain exercises were used, specifically those that relate to rehabilitation and recovery, such as, employment integration, making choices, social skill development, etc. The length and scheduling of the intervention were equal for both groups. The study had a pre–post quasi-experimental design and lasted for 6 months. The following variables were measured before and after intervention: cognitive performance, self-concept, and daily functioning. The results after intervention showed significant differences between the study group and the control group in the areas of cognitive performance and daily functioning, in both home and work environments. No significant differences were found regarding self-concept. The findings' of this study, which was the first to examine the effectiveness of IE on adults with schizophrenia, had important implications. It suggests not only that the IE program is effective but also that consumers with schizophrenia can improve their cognitive skills and everyday functioning.

A follow-up study to this study was performed by Speier-Keisar, Hadas-Lidor, &Lachman (2007). Individuals with psychiatric disorders are often excluded and discriminated against in society (Ralph, 2000). This study examined the efficacy of Dynamic-Cognitive Intervention and its influence on cognitive and social functioning of people coping with schizophrenia who reside in the community.

The study was conducted in a community rehabilitation centre. The sample included 28 subjects with schizophrenia, whose age ranged from 23-37 year, who were divided into two matched groups. All of the participants were assessed before and after the intervention. The experimental group received 18 weekly dynamic-cognitive interventions of one hour. The control group

participated in the centre's regular activities which included provision of support, psychotherapy, illness treatment management, and workshops or employment units. A significant improvement was noted for the study group subjects on social $F(3, 24) = 18.52, P < .001$; cognitive $F(3, 24) = 8.17, p < .001$ and occupational measures (significant improvement progression of occupational status in study group as compared to controls) as compared to the control group subjects after six months. The results of this study support short-term dynamic-cognitive intervention for individuals with schizophrenia in the community.

In a third study, a comparison of performance of the static version (including an additional exposure) and the dynamic version of the Rey Osterrieth Complex Figure test (ROCF) was carried out. The ROCF is used to assess cognitive functions such as visual-spatial organization, sequencing and memory. Cognitive dynamic assessments of people recovering from mental illness can provide a deeper understanding of learning propensity, and therefore contribute to improving recovery and rehabilitation, whilst developing a feeling of competence and motivation to change. The additional exposure to the figure on the static version of the test was chosen since some of the criticism of dynamic testing methodology, claims that the exposure in itself is the source for improved performance of the copying and memory of the figure during the second part of the dynamic version of the test. The study also examined feelings of competence as experienced by participants' in both groups. The study population was a group of consumers using social club community mental health services (Nachmany-Asher, & Shefa, Hadas-Lidor, 2013). The study included 60 subjects between the ages 23-69. The participants were divided into two groups: in the first group, the static form of the test was administered (including an additional stage of exposure), so it consisted of five stages (1- copying, 2- drawing from memory, 3-exposure to the complex figure without mediation for three minutes, 4- copying and 5- drawing from memory); In the second group, the dynamic form of the test was administered, in accordance with the instructions described in the Learning Propensity Assessment Device (LPAD) manual. In this group, all the subjects received second level mediation that included verbal analysis of the components of the complex figure. In addition, subjects of both groups were asked an open-ended question about their feeling of competence at the end of the test. Amongst subjects who underwent the dynamic form of the test significantly higher results were found in comparison to those who underwent the

static form on second copying, second drawing from memory, the rate of change and the grading of competence at the end of the test. The researchers conclude that the dynamic form of the ROCF provides a more in-depth understanding of learning propensity and subject's competence. Increasing use of the dynamic form could guide occupational therapists and other professionals in constructing a better tailored intervention plan for consumers, increase their feeling of competence, encourage them to continue in their efforts and activities and therefore promote their rehabilitation.

Research based on DCI with the population of family caregivers

Family caregivers have been defined as the most important human resource for home-based long-term care (World Health Organization, 2000). Keshet, is an instructional and educational course given in academic settings for those caring for their family's mentally ill members, since 2001. The Keshet course aims at enhancing positivistic family cognitive communication skills in everyday life interactions. It is based on Feuerstein's theory of Structural Cognitive Modifiability (Feuerstein, Rand, & Feuerstein, 2006) and the Dynamic Cognitive Intervention principles of Hadas-Lidor and Weiss (Hadas-Lidor, Weiss, & Kozulin, 2011). Meaningful Interactional Life Episodes (MILEs) are used in order to enhance learning and encourage the transfer of knowledge and communication skills acquired within the course framework, to participants' natural environment. These are real-life documented verbal interactions experienced and submitted by participants. Keshet moderators analysed these MILEs and provided feedback to participants regarding these MILEs as they relate to course content.

The goal of the course is to train parents and caregivers awareness in the use of cognition; to better understand the behaviour of their mentally ill child and to react to him/ her in a controlled and structured manner, in order to influence his/ her responses via their interactions with him. Furthermore, the participants are encouraged to use mediation in their interactions with medical and rehabilitation services personnel.

In an initial study following the first 3 Keshet groups, a pilot study was carried out with a group of 11 participants. They completed an attitude questionnaire relating to beliefs, self-knowledge and actions in relation to their children, before and after the course. Participants reported a higher level of

knowledge, beliefs and changes in their actions that they interpreted as positive, following the Kismet course (Hadas-Lidor, Hasdai, & Jarus, 2006). These results were replicated in additional groups of Keshet (Weiss, 2013).

An initial study that evaluated Keshet was performed by Shor (2009). Eighty eight Keshet participants participated in this evaluation. The objective of the evaluation was to evaluate the contribution of the course and the changes they experienced during and after the course, as a result of their learning the DCI approach. The methodology was based on multiple single subject designs, and the implementation of quantitative and qualitative methods. The findings indicate that the Keshet program changed the participants' perception of their life incidents with which they are coping and of the resources available to them in coping with these incidents.

A study conducted by Redlich, Hadas-Lidor, Weiss, and Amirav (2009) examined whether the Keshet program effectively increases family members' hope for themselves versus hope for their ill relative. The experimental group was composed of 49 family members who participated in the Keshet program for 6 months, in contrast to the control group, which comprised 22 family members, who underwent no structural intervention. Hope was measured at baseline and after 6 months using the Hope Scale, developed by Snyder (1998). No difference in self-perception was detected in Hope Scale scores between groups; however, the Keshet program significantly increased the hope of families concerning the ill person while decreasing the gap between the hope of family members regarding themselves and the affected person. Thus, the program may increase the families' feeling of hope during the journey toward recovery of family members with mental illness.

Keshet was also the platform for the examination of cultural differences in the ultra-Orthodox Jewish community. (Weiss, Hadas-Lidor, Shor, 2013) The influence of the familial context of people with mental illness has come to be recognized as being significant to the course of mental illness; however, the role of culture in the manifestations of the dynamics within families of persons with mental illness has been an unexplored subject. A study (Weiss, Hadas-Lidor & Shor, 2013) was performed of 24 ultra-orthodox Jewish mothers of persons with mental illness, who live in a relatively closed religious community in Israel. As part of their participation, the members of two groups of the Kismet educational program designated for family caregivers of persons with mental illness were asked to write meaningful interactional life episodes (MILEs), which focused on stressful events in their lives. Qualitative analysis

of 50 MILEs illuminated the significant role that religious and cultural norms had in the perceptions of what the participants considered stressors and the dynamic in the families in regard to these stressors. Four themes were identified: (a) conflicts between religious rituals and the disability; (b) stressors that stem from the need to maintain the secrecy of familial events in a collectivist society; (c) stressors that stem from time-related events, such as holidays; and (d) mothers as a major bearer of the burden of caregiving. The authors emphasized the importance of relating to cultural factors in family educational programs and interventions, because this may contribute to the potential use and success of mental health services within a population that essentially underutilizes these services. Accruing this knowledge is essential if therapists want to adapt the methods of interventions in educational programs, such as Keshet, to the needs of parents living in a closed religious collectivist society. The MILEs could also be applied as a means of developing culturally oriented techniques with other cultural populations and members of racial/ethnic minority groups that underutilize mental health services because of cultural barriers. In the work of Feuerstein, there is an emphasis on the adaptations needed for minority populations, such as immigrants from countries such as Ethiopia and North Africa, stating that we should not regard them as people who lack intelligence, rather as people who are culturally different (Feuerstein, & Richel, 1963).

A comprehensive effectiveness study of Keshet was conducted by Weiss (2014).

Study objectives were (a) to develop an instrument for structured analysis of the MILEs (b) to examine the effectiveness of the Keshet course for family caregiver wellbeing and (c) to develop a "Knowledge Translation" based model of cognitive educational intervention for family members of persons coping with mental disorders based on an occupational therapy domain perspective relating to communication and recovery.

Methodology: The first section of this study includes the development of a tool for the analysis of MILES, the Meaningful Interactional Life Episodes Evaluation Tool (MILEET). Keshet moderators were the designated population for the tool development study. Their written responses to MILEs were compared and analysed pre/post use of this newly developed tool.

As Keshet is a complex health intervention, the intervention effectiveness section of this study utilized a mixed methodology approach. Quantitative questionnaires relating to family attitudes, problem solving, communication

skills, goal attainment, burden and quality of life, were used for this study. The design is quasi-experimental, using the same group of people at different stages. Thirty-eight participants filled out study evaluation questionnaires at three different times: at least three months prior to course attendance, at initiation and at completion of the course. This created a control condition (waiting list) and a study condition (pre-post course attendance). Finally, focus groups of graduating Keshet participants were held in order to provide a qualitative perspective.

Findings

The MILEET development resulted in the structuring of a reliable tool for MILE analysis, yet the use of the MILEET did not evoke a significant improvement in MILE analysis for experienced Keshet moderators. Regarding the effectiveness outcome study, following Keshet participation, and as compared with the study control condition, quantitative findings pointed to significant changes in participants' attitudes regarding knowledge of how to cope with a mentally ill family member. Participants also reported a significant improvement with regard to objective and subjective burden. Participants and moderators identified a significant positive change in the ability of participants to cope with the MILES. Qualitative data analysis revealed three central themes (1) Keshet is an attempt to go beyond the despair and frustration to improved relationships with self, child and the health system; (2) Keshet is a means to improve communication empowerment and feelings of competency and (3) The group leader's meaningful role and effect on learning and promoting recovery and change.

Conclusions

Keshet aids family caregivers in mental health in the development of skills and attitudes that improve cognitive communication skills and in turn, improves resilience in the caregiving role. This is accomplished with the use of the MILES that provide meaningful links between theoretical components taught and the participant's actual experiences. Caregiver resilience is identified as being a meaningful outcome which to date has not received sufficient attention. The MILEET, developed within the framework of this study, is a re-

liable tool, apparently primarily useful for novice moderators. For the population of family caregivers in mental health, Keshet is an intervention model that promotes Knowledge Translation that may positively affect public health and promotion.

Policy implications and recommendations

Inclusion of Keshet as an evidence based intervention for family caregivers in mental health within designated family centres operating in Israel under the Rehabilitation of the Mentally Disabled in the Community Law (2000) is recommended. Further research on the use of MILEs as a tool for the development of communication patterns based on cognition and mediation and a longitudinal study focused on the resilience of caregivers as it relates to participation in Keshet are warranted.

Research based on DCI with professionals

For the past ten years, specialized programs in the study of DCI intended for professionals are given in academic institutes in Israel. In preparation for the development of these studies, a group of therapists participated in a workshop aimed at developing teaching and mediation skills. The training in the workshop itself, was based on application of the dynamic cognitive approach. The study evaluated attitudes held by the participants toward teaching roles before and after the workshop. On the basis of both qualitative and quantitative analyses, it appears that the workshop facilitated changes in participants' attitudes toward teaching, on emotional, cognitive, and practical levels.

The questionnaire is composed of two sections, one quantitative and the other an open ended qualitative question.

The questions on the questionnaire were organized randomly and divided into three groups, three questions per topic: knowledge and emotions related to teaching, and questions relating to feelings of competence regarding teaching.

Eighteen participants filled out attitude questionnaires at initiation and termination of the program.

A *t* test analysis of the participants' responses to the questionnaire revealed significant differences in attitudes regarding knowledge, emotions, and teaching competence. The combined score for all three subscales showed an average score at termination as being significantly higher than at initiation. These findings point to significant changes in beliefs, emotions, and behaviours in relation to participants' roles as dynamic cognitive therapists and to their belief in their clients' ability to change and develop as a result of the therapeutic intervention and interaction. In the qualitative section of the study, participants identified strengths and weaknesses in their teaching skills, and conveyed how the workshop had improved their skills as teachers and instructors (Hadas-Lidor, Naveh, & Weiss, 2006)

An additional study assessed the actual effects of the academic study programs in DCI for professionals. Program participants come from diverse health-related professions and the program enabled the development of common grounds for communication and intervention principles which were enhanced while maintaining unique professional identity is maintained. Efficacy of the program was assessed by giving attitude questionnaires to participants before and after conclusion of the program. These point to significant changes in beliefs, emotions, and behaviours in relation to participants' roles as dynamic cognitive therapists and to their belief in their clients' ability to change and develop as a result of the therapeutic intervention and interaction (Hadas-Lidor, & Weiss, 2007).

Conclusions

Prof. Reuven Feuerstein's work and the theories he developed have reached and are being applied far and beyond the populations he started out working with. One of these populations, as described in this paper are those coping with mental health illness. DCI is based on the SCM and MLE theories, together with elements from the recovery vision, an emphasis on emotions and cognition and meta-cognition as implemented in the profession of occupational therapy. We believe that the DCI principles which integrate these components can advance people on their Recovery journey.

This paper reviewed studies based on DCI in populations related to the field of mental health. Three studies were conducted within the population of persons coping with mental health illness, five studies involved families of

persons coping with mental illness and two studies were carried out with professionals who provide mental health services.

These studies point to the effectiveness of Dynamic Cognitive Intervention, its' importance for consumers, caregivers and professionals in the field of mental health, and the broad spectrum with whom this intervention may be applied. DCI does not focus on illness and illness management. It is rather based on a universal outlook on cognitive modifiability and the use of mediation for **positive** communication applications. Regarding the Keshet intervention for family caregiver's that is based on DCI, it is clear that the mental health family caregiver's needs should be addressed since home-based care is an integral component of all health and social systems. Keshet is held within settings that are identified within a health and not an illness perspective (academic setting vs. hospital/clinic). Within this context it is important to initiate such interventions and encourage family caregivers to participate in these interventions from the early stages of their coping with family mental illness. The population of caregivers should be encouraged and reinforced in their need for support, caring for themselves, and acquiring practical strategies for improved caring and coping. Public health care providers and program instigators should be made aware of the importance of these crucial needs.

Additional studies on the use of DCI as a basis for identifying communication patterns and the establishing of effective cognitive communication in various populations of persons with special needs are warranted.

When Prof' Reuven Feuerstein was asked whether cognitive interventions would make people happier, he answered "*Happiness is in Gods' hands. My role is to expand people's possibilities and ability to make choices*".

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