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By

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ABSTRACT

AN ANALYSIS OF THERAPEUTIC PROCESS OF DOSA THERAPY

By

Noriko Kubota

This dissertation aimed to examine the effectiveness and the therapeutic process of Dosa therapy, a body-oriented psychotherapy which was developed in Japan, as an intervention tool for social work practice in order to facilitate individuals psycho-social well-being. Dosa means motor action in Japanese. Dosa therapy uses voluntary movement to bring about changes in a person's behavior and psychological functioning. Clinical studies have reported supportive results to work with individuals with schizophrenia, obsessive-compulsive disorder, anxiety disorder, hyperventilation, psychosomatic disorder, and depression. These clinical studies were small-scale studies and almost exclusively employed a case study method.

This dissertation study was undertaken in an effort to further research about Dosa therapy. Specifically, Dosa therapy was used with American individuals with anxiety problems to examine the effectiveness with individuals other than Japanese. Systematic observations were conducted by using single subject methodology to examine the effect of Dosa therapy on the participants' behavior, anxiety level, experiencing, self-efficacy, and locus of control. In addition, the underlying mechanism by which Dosa therapy operates was explored by using a task analysis approach.

Five female graduate students who had an anxiety problem participated in this clinical study. The intervention with the relaxation Dosa exercise for the upper body (kukan-hineri) was implemented for seven or eight sessions after the three or four baseline sessions.

It was found that, as a group, albeit small, the participants' experiencing level became significantly deeper, that the participants' anxiety decreased significantly and their behavior changed in an expected direction, that the participants became significantly self-efficacious and their locus of control became more internal. When examined individually, all participants showed changes in their experiencing level of functioning, however, the effect on their behavior, anxiety level, self-efficacy and locus of control were clear with four participants. Since the Dosa exercise was the only element which was added in the intervention phase, these results indicate that Dosa therapy appeared to have an effect on the changes in the participants' experiencing, behavior, cognitive, and affective functioning. Analysis with a task analysis approach revealed the process that a Dosa task was resolved and based on this performance process, the internal operations which produced overt performance were inferred. Based on this analysis, it was surmised that through Dosa exercise, the participants obtained a functional Dosa operational system, where they felt that they could move their body voluntarily and internalized a functional, realistic body image. This change in perception of themselves as well as the relaxed state of mind might have led them to perceive the situation and the events differently and generated the changes in behavior and psychological functioning. Further research is needed to replicate these results.

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My dissertation journey has come to an end. It has been a long, sometimes overwhelming process. I sometimes found myself completely lost in an unpredictable process and was paralyzed by thinking weather or not this work really was deserving of a degree. I started to put ideas together for this final project of my studies in the doctoral program during the winter of 1999, had my proposal meeting last June and finalized the proposal in the summer. After receiving approval from the University Committee on Research Involving Human Subjects in early September, recruitment for the participants in the study was started. I worked with the individuals who participated in this study during the fall semester. In the winter of 2000, I started to process and analyze the data. By the time I started to write it up, the snow was gone and the flowers were in bloom. My anxiety level was high at the time of defense of my dissertation, but I survived it. I worked hard and carefully in each step I went through.

Throughout this whole process, the members of my dissertation committee, four unique, brilliant scholars, were behind me, guided and supported me. I deeply appreciate the guidance from Dr. Rena Harold as the chairperson of my dissertation committee. She was open to accept my idea of conducting a clinical study on an intervention technique which was developed in Japan that she had never heard of before. She has been flexible and precise when providing feedback. I was always amazed by the insightful and intelligent comments she gave me on my drafts. She was so caring and provided me a safe environment and at the same time she believed in me and prompted me when I became paralyzed in the middle of the process, which helped me make up my mind and

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Finally, but not the least, I appreciate my family and friends who gave me unlimited support and encouragement during this long, stressful process. My parents probably have no idea what I have been through, however, they always trusted me and supported my decision. I want to thank Dr. and Mrs. Tom and Jane Johnson. They took me under their wing when I came to the United States and provided me a wonderful, family-like environment. The beautiful nature around their home and their animals helped me maintain my sanity.

Now I have come to the end of my study. I am ready to go out in the real world, to have new experiences and to develop both personally and professionally.

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CHAPTER 1

INTRODUCTION

Social work has adopted the person-in-environment theory as one of its core theoretical frameworks. This theory has as its goal understanding individuals within their environment and the social systems that influence their behavior and are, at the same time, reciprocally influenced by them (Pinkus, Haring, Lieberman, Mishne, & Pollock, 1977; Richmond, 1922). In practice, social workers aim to enhance and maintain the psychosocial functioning of the client system. In doing so, social work endorses the dignity of the individual and self-determination as core values of social work practice (Compton & Galaway, 1994).

As intervention techniques to achieve the aforementioned goal, social workers utilize various approaches that address interpersonal interactions, intrapsychic dynamics, and life-support and management issues (Brandell, 1997; NASW, 1989). Psychotherapy is one form of intervention frequently used in micro-level social work practice (Wakefield, 1988). Shaffer (1947) stated that psychotherapy is a learning process through which an individual acquires an ability to speak to him/herself to control his/her behavior. Frank (1974) argued that the primary function of psychotherapy is to restore the client's sense of mastery. The common theme of their statements can be restated that the goal of psychotherapy is to maximize an individual's welfare by enhancing and maintaining his/her agency and autonomy in the context of the social environment (Garfield & Bergin, 1986). In this respect, I believe that psychotherapy is compatible with social work goals and values and is a useful and legitimate intervention tool for social work practice.

The evaluation of the effectiveness of practice is a major way that clinicians enhance their knowledge and hone their skills (Hartman, 1994). Practice evaluation is also important for every professional to build a sound, accountable practice foundation (Bloom, Fisher, & Orme, 1995; Barlow, Hayes, & Nelson, 1984; Videka-Sherman & Reid, 1988). Based on this understanding, this dissertation study aimed to investigate the effectiveness of Dosa therapy, a form of body-oriented psychotherapy, as a tool of social work practice. I hope this study shortens the distance between clinical work and research and provides a way to incorporate an evaluative means into practice of Dosa therapy.

Experience: Common therapeutic factor

Researchers/clinicians of different psychotherapeutic orientations have emphasized the client's experience in the therapeutic interaction as a common factor for psychotherapeutic change (Arkowitz & Hannah, 1989; Gendlin, 1979; Goldfried, 1980). Gendlin (1979) defines experiencing as an inner referent and argues that access to the inner referent facilitates the psychotherapeutic process. In other words, successful therapy brings a person closer to his/her ongoing, bodily, felt flow of experiencing, makes him/her more aware of his/her experiencing, and makes them act and think based on this direct datum (inner referent) (Klein, Mathieu, Gendlin, & Kiesler, 1969). Goldfried (1979, 1980) pointed out that therapists need to know something about an experiential referent to understand the meaning of the client's word or narrative and argued that providing new, corrective experiences is a common strategy among psychoanalytic, behavioral, and humanistic psychotherapies.

Researchers of client-centered therapy originally focused on clients' experiences in the therapy sessions (Gendline, 1962; Rogers, 1959). Rogers (1959) addressed experience and defined it as everything that is going on in a person at any given moment which is potentially available to awareness. Experience, as a verb, can be defined to receive in the organism the impact of the sensory or physiological events that are happening at the moment. In other words, it is a process of symbolization with some degree of accuracy, of those sensory or visceral events at the conscious level. Thus, the internal, phenomenological quality is the primary feature of this concept. Rogers was interested in clients' experiences in order to clarify the phenomenon of incongruence which he defined to be a discrepancy between awareness and experience because he hypothesized that incongruence is one origin of psychological problems or disturbances.

Along with the theoretical development, the Experiencing scale (EXP) was constructed to operationalize the concept and to conduct empirical studies (Klein, Mathieu, Gendlin, & Kiesler, 1969). The first study concerned with the changes in expressed experiencing was conducted by Gendlin, Jenny, and Shlien (1960). They looked for an association between outcome and the patient's manner of experiencing. They found that successful clients moved from remotely talking about feelings to more directly expressing them. These individuals also became more able to see the relationship with the therapist as an important new experience and came to see a parallel between present experiences of the relationship with the therapist and problems experienced in other contexts. These findings supported the hypothesis of experiential involvement and shifts as prominent factors in the successful outcome of psychotherapy.

Several more studies were conducted by using EXP to investigate the relationship between the client's experiencing level and outcome and other therapy variables (Karon & O'Grady, 1969; Karon & VandenBos, 1970; Kiesler, 1969; Kiesler, Klein, & Mathieu, 1965; Rogers, Gendlin, Kiesler, & Truax, 1967; Ryan, 1966). In general, these studies showed that the experiencing level is consistently related to the type of the client's disturbance and to outcome. For example, Kiesler, Klein, and Mathieu (1965) compared the EXP level between schizophrenic, neurotic, and normal subjects and found that neurotic subjects had a higher EXP level than either schizophrenic or normal subjects. They surmised that the experiencing level of the neurotic subjects were higher than those of the schizophrenics and the normal subjects because they were less disturbed than the schizophrenics and more motivated for therapy than the normal subjects. Kiesler (1969) found that more successful patients show higher EXP levels compared with less successful patients. EXP is also associated with initial client factors such as motivation for therapy or readiness to perform skills relevant to therapy, and with the quality of the therapist's performance. For example, Rogers et al. (1967) found that the EXP level was associated with absence of depression at the beginning of therapy, with high verbal ability, and with high verbal productivity and expressiveness. It was also revealed that the EXP level was related to the therapist's accurate empathy which was rated by independent judges. Karon and VandenBos (1970) found that EXP level was related to therapist warmth.

As for the changes of the experiencing level over the course of treatment, the results were more complex. However, general trends revealed the following. Rogers, Gendlin, Kiesler, and Truax (1967) looked at the difference in the EXP trends between

the more successful and less successful schizophrenics. The results showed that the EXP level stayed higher with more successful patients, whereas the EXP level was constantly low with less successful patients. It was also found that more successful patients had smoother trends with less backsliding and more consistently maintained their initial levels. The results of Ryan's study (1966) revealed that the general trend for the more successful therapy group was up and that for the less successful group was down. Therefore, the experiencing level over the course of treatment is also associated with therapy outcome.

Role of Body in Psychotherapy

In order to access the experiential level of functioning, therapists of some modalities of humanistic psychotherapy incorporate techniques that address the client's bodily awareness or somatic sensations in therapy. For example, Gendlin (1986) developed a technique called "focusing" in order to focus on internal experiencing. Kepner (1987) incorporated body-oriented techniques in his practice of Gestalt therapy in order to enhance self-awareness.

A focus on the body in psychotherapy can be found earlier than those interests of researchers/clinicians in humanistic/experiential psychotherapies. Wilhelm Reich, M.D., (1897-1957) was a pioneer in the western culture who focused on the body in understanding a person's problem and actively used body movement in an attempt to solve psychological problems. As a student of Freud, he focused on libido as essential to human functioning and this focus evolved into a notion of orgone energy which he thought to be an actual body energy. He conceptualized neurosis as the physical blockage

of the flow of orgone energy in the body. He saw a parallel between such rigidities in the body and rigidities in mind, reflected in fixed ways of thinking about one's self and one's world, accompanied by other forms of thought disturbances. Reich focused not just on what people said, but also on how they said it and what their body did when they spoke. He thought these defensive body-mind patterns, which he called 'armour', were created based on childhood experiences (Reich, 1972). In order to release those rigidities, Reich developed techniques to work with the body by focusing on posture, muscular tension and breathwork (West, 1994). His therapy was known as Reichan Therapy and his students developed their own form of body-oriented psychotherapy based on Reich's original ideas. These include Bioenergetics (Lowen, 1976), Core Energetics (Pierrakos, 1987), and Biosynthesis (Bodera, 1986).

The body is also addressed in various forms of relaxation strategies or interventions to facilitate self-control ability in cognitive-behavioral therapy. For example, relaxation techniques such as progressive relaxation (Jacobson, 1974), biofeedback (Schwarts, 1973), autogenic training (Schultz & Luthe, 1959), and meditation (Shapiro, 1980) emphasize the utility of relaxation responses as an alternative to anxiety reactions (Kazdin, 1984). Wolpe (1976) developed systematic desensitization and incorporated relaxation techniques to reduce anxiety. Goldfried (1971) used Wolpe's systematic desensitization not just to regulate the physiological arousal of anxiety but also to develop a coping strategy for anxiety and called this therapy, coping skills training. In these therapies, the physiological aspect of relaxation responses is mainly focused and considered a counter-response to anxiety.

In sum, the body has been addressed in various forms of psychotherapy, although the degree of focus on the body, the theory about the role the body plays in the etiology of problems, how the body is used in bringing about change, and the conceptualization of the underlying mechanism, varies depending on the basic assumptions or theory of each form of psychotherapy. However, there is one common thread which is that the body and mind function in synergy by interacting with each other.

A body-oriented psychotherapy was developed in Japan, separate from the above trends and influences. This therapy is called Dosa Therapy (Naruse, 1973, 1992) and has been applied in various clinical settings to help individuals cope with their problems. Case studies have been conducted to examine its effectiveness with various client populations in Japan and supportive results have been reported (Fujioka, 1987; Hoshikawa, 1992; Kubota, 1991; Ogawa, 1992; Shimizu, 1992; Tsuru, 1982).

This dissertation study centers on the investigation of the therapeutic process of Dosa therapy. Specifically, a cross-cultural examination was conducted by using Dosa therapy with Americans to examine if it works with individuals who are not Japanese. A systematic observation was conducted by using a single subject design to evaluate effectiveness of Dosa therapy as an intervention technique in clinical practice. In addition, the therapeutic process was analyzed by using a task analysis approach to investigate the underlying mechanism of change by which Dosa therapy operates. Based on these findings, an aspect of the body-mind connection which is facilitated through Dosa therapy has been explored.

CHAPTER 2

REVIEW OF THE LITERATURE

Historical Background of Dosa therapy

Dosa therapy is a form of body-oriented psychotherapy developed in Japan. Dosa means *motor action* in Japanese and utilizes voluntary movements as a means to bring about changes in psychological functioning and behavior. This method was originally developed as a psychological rehabilitation program for people with cerebral palsy (CP) and was called Dosa training (Naruse, 1973, 1985, 1992; Ohno, 1978). Motor difficulties of people with CP are considered to be caused by the damage to motor areas in the brain. Conventional rehabilitation programs aim to inhibit abnormal muscle tone and facilitate normal movement patterns based on neurological understanding (Bellenir, 1997; Russman & Romness, 1998). A research team in Japan, consisting of psychologists, addressed the difficulty that individuals with CP have from psychological and behavioral points of view and investigated psychological factors that play a role directly in the motor control process. As a result, they developed a rehabilitation program to remedy the motor difficulties of people with CP and framed this program as a type of psychological rehabilitation.

Naruse and his colleagues (1973) conducted a series of studies to investigate the nature of motor difficulties of people with CP, especially rigid body tension which is a core impediment to their voluntary movements. They started with in-depth observations of the motor control patterns of these individuals to perform a simple motor task. When they had people with CP pick up a glass full of water from a table and drink water from

it, the requisite body movements for the task such as stretching an arm toward the glass, grasping it, and bending the elbow toward the mouth, did not occur immediately. Instead of stretching an arm toward the glass, they started to stiffen their shoulder or whole arm before actually stretching their arm. Once they managed to stretch their arm, they overextended it. The movement was reflex-like and lacked fine regulation. When they tried to grasp the glass, the same process was observed. That is, the irrelevant movements such as bending a wrist or extending the palm occurred before the grasping movement in the palm was initiated. Once the intended movement occurred, grasping was very strong as if breaking a glass. The harder they tried to perform the intended movement, the stiffer their body became. Moreover, once their body became stiff, they could not release the tension immediately after the task was over. Regarding the experiences while trying to perform the task, people with CP described that they felt as if their arms and shoulders moved by themselves. This account suggested that even if it was they who moved their body, they did not feel those movements as their own. In other words, people with CP do not have a sense of voluntary control while moving their body (Naruse, 1973).

The researchers summarized their observation as follows: (1) when people with CP intend to move their body, they tend to tense their body more excessively than necessary, (2) once they become tense, it is not easy for them to release it, and (3) they do not have a sense of voluntary control in this process.

Naruse (1973) used an Electromyograph (EMG) to observe objectively the muscle tone of people with CP performing a motor task. He had healthy individuals and people with CP press and release a button with their index finger following the instruction and recorded the electrical potential of the corresponding muscles. With the healthy subjects,

their EMG showed activity immediately after the instruction to press the button and the activity disappeared immediately after the instruction to release it. On the contrary, with the CP subjects, there was a delay of EMG activity after the instruction of pressing a button. Once their EMG showed activity, the amplitude was much bigger and less stable than the ones of their healthy counterparts. Moreover, it took time to disappear after the instruction to release the button. When instructed to repeat this task, the healthy subjects showed a regular pattern of heightened and lowered EMG, whereas the EMG of people with CP showed irregular patterns. Their EMG did not disappear completely after each trial, maintained active to a certain level, and eventually, there was no difference in the EMG between the pushing and releasing movement. This EMG pattern clearly showed the process that the tension was not released completely after each movement and that the residual tension was accumulated. Therefore, the physiological index supported the behavioral observation of motor movements of people with CP.

From this observation, it was assumed that the excessive tension in the body prevented individuals with CP from getting clear sensory information from those parts of their body. It was surmised that this lack of body awareness might make it difficult to maintain the balanced tension and relaxation which is necessary for a controlled movement and as a result interfere with a successive, coordinated movement (Ohno, 1978).

Ohno (1978) examined the development of motor control in children with CP to investigate how their motor difficulties became salient over the course of development. He interviewed the mothers of children with CP and collected pictures of those children from an early age, when available. He found that as infants, those children's limbs and

bodies were generally hypotonic rather than hypertonic and they did not move well. When those children started to walk and learn motor movements as toddlers and in early childhood, a tensed movement pattern started to emerge when performing a certain movement. As they became more active in late childhood, some body parts tended to become stiffer in a specific movement and their movements became more unbalanced. In adolescence, their movements became more rigid and the unbalanced posture became salient. Based on this data, he speculated that as children with CP grew, their flexibility of body movement decreased and a tension-relaxation unbalance in their movements appeared. Those patterns became habitual and a specific unbalanced body posture developed. Therefore, rigid tension patterns which cause their motor difficulty are acquired over the course of their development.

Based on these observations, the researchers hypothesized that in the development of voluntary movement, people with CP learned how to tense their body in performing a voluntary movement but failed to learn how to relax their body, or it was difficult for them to learn how to relax their tension due to the impairment of the brain. Thus, the excessive body tension prevents them from learning fine motor regulation.

The researchers then proposed to view the difficulty in motor movement of people with CP on the behavioral level, not just as a result of physiological impairment. By viewing tension in the body of people with CP as tension behavior, the researchers started to explore the ways to help people with CP relax the rigid body tension. They also argued that psychological factors that are directly involved in the motor control process need to be addressed besides motivation or personality traits which are addressed traditionally in psychological studies to understand and help people with CP (Ohno, 1978).

Tsuji (1966) used hypnosis to help people with CP relax their body tension and observed their responses. She found that those people could relax their body tension under hypnosis and their EMG showed lowered muscle tone. This result was replicated by other researchers (Kimura & Kobayashi, 1968; Kobayashi, 1966; Naruse, 1967; Ohno, H., 1967, 1968; Ohno, K., 1968). It was found that people with CP could move relaxed body parts fairly well under hypnosis. Moreover, relaxation under hypnosis maintained for a while, although the tension in their bodies returned gradually as time passed. These clinical experiments suggested that people with CP can learn how to relax their rigid body tension and to move their body and that a psychological technique is useful for this purpose (Ohno, 1978).

Further examination of relaxation behavior under hypnosis revealed that some body parts of people with CP did not start to move just by relaxing tension in those parts. They needed to practice to move those parts after relaxation. And there were some parts which they could not move no matter how hard they tried. Therefore, it became clear that while some parts of their body started to move once tension was released, for some parts correct movements needed to be learned after relaxation, and still there were some parts which they could not move even after the practice. The first two conditions indicated that people with CP did not learn the correct movements or learned the incorrect movements due to the tension. The last condition may be an indication that those parts were affected by the impairment on the brain. Therefore, it was suggested that difficulties in motor movement of people with CP may be acquired mostly through insufficient learning due to the physiological impairment and that it is possible for those people to learn the correct movements under a certain condition (Ohno, 1978).

Based on these findings, it was hypothesized that the motor difficulties of people with CP may not be explained completely as caused by the impairment of the brain (Naruse, 1973, 1992; Ohno, 1978). In other words, their motor difficulty may be understood as a problem of motor control on the behavioral level, which is caused by the impairment. From this psychological, behavioral point of view, the difficulties of those people are acquired due to their insufficient ability to learn how to relax excessive tension in their body and to move their body due to the rigid body tension. In other words, the damage on the brain affects the process of learning how to regulate the movements.

Focusing on the behavioral level, the researchers defined the difficulty of people with CP as the difficulty in voluntary motor movement or motor control. That is, they cannot move their own body in the way they intend. This understanding prompted the researchers to develop a psychological rehabilitation program, Dosa training, which focused on helping these people learn to relax their excessive bodily tension and to move their body with an adequate level of tension (Naruse, 1973; Ohno, 1978).

Based on the understanding of the motor difficulties of people with CP, Naruse (1973) proposed the concept of Dosa as a process of human voluntary motor movement in general and intended to depict the motor control process on a behavioral level. He theorized that the Dosa process is a psychological, self-regulatory process which is controlled by a person's higher mental operation and subsumes physiological systems. The Dosa process is described with three components: intention, effort/striving, and physical movement (see Figure 1). When we perform any voluntary movement, we first intend to perform a specific movement and make a plan to do so (Intention). Based on the plan, we exert efforts to move relevant parts of our body (Striving) to actualize the

intended movement (Physical movement). When our effort is adequate, an intended movement results. In this process, a person operates his/her body based on sensory feedback. In this respect, the Dosa process is an active self-operational process rather than a merely automatic, physiological process.

Naruse, thus, differentiated the Dosa process from physical movement; the former focuses on psychological operation during motor regulation, while the latter addresses neurological and musculoskeletal mechanisms, the hardware of voluntary movement. He also emphasized the Dosa process as a dynamic interplay between various control systems which include mental activities concerning motor control, neurological systems, and musculoskeletal systems.

Figure 1. Diagrammatic description of Dosa Process

Dosa Training

The original purpose of Dosa training was to help a person with CP learn to move their body voluntarily and thus improve self-control of motor movements (Ohno, 1978). Internalizing the operation of initiating and carrying out a specific movement is a main focus of the exercises, rather than an actual movement. The therapist assists the client to practice a target movement by guiding the client's body with his/her hand. At the same

time, he/she provides verbal feedback regarding the movement the client is performing and/or clues and encouragement while practicing it.

The exercises to practice a specific movement have been developed. They are categorized into three types (Naruse, 1973, 1985; Ohno, 1978): (1) relaxation Dosa exercises, (2) simple Dosa exercises, and (3) integrated Dosa exercises. Relaxation exercises aim to help a person learn how to relax a specific part of the body which is tense or becomes tense in a movement. These exercises consist of (1) relaxation exercises around the shoulder, neck and arm, (2) relaxation exercises around the lower back and groin and (3) relaxation exercises around the knee and ankle. For example, an exercise that moves both shoulders backward while pulling shoulder blades together in a sitting position is one of the relaxation exercises around the shoulders.

Simple Dosa exercises are designed to practice a single joint movement within the possible range of motion without a movement in irrelevant parts of the body. The exercises are grouped into (1) simple Dosa exercises for the neck, shoulders, and upper limbs, (2) simple Dosa exercise for the groin and lower limbs, and (3) simple Dosa exercise for the mouth, lips, and tongue. For example, bending or extending an arm without tension in the shoulder, wrist or hand is designed to practice a smooth arm movement.

Integrated Dosa exercises are aimed at controlling more complex body movements in which movements of the whole body are involved. This exercise includes maintaining a balanced sitting or standing posture, coordinated walking, writing, and speaking. For example, an exercise to move weight from one leg to the other in a standing posture is a part of the exercises for coordinated walking.

Model of Dosa Process

Naruse (1992) proposed a more detailed model of the Dosa process which incorporates multiple levels of human functioning (see Figure 2). This process includes the psychological system, neurological system, and physical system as subsystems. Feedforward processes which are depicted with lines with a right-pointing arrow proceed from the psychological system to the physical system through the neurological system. This process is initiated by a person's intention to make a movement for a certain purpose. Then a person plans how to move his/her body to meet the intention and strives to perform an actual physical movement. In other words, in order to perform an intended movement, a person activates the motor cortex, the neurological system, and the musculoskeletal system to actualize a specific movement. A movement which results through this process is fed back to a person as shown with lines with a left-pointing arrow. It is also monitored visually regarding how much the resultant movement agrees with the intention and the plan.

From a physiological point of view, it is explained that a motor movement is generated by the neurological activities in the motor cortex. However, Naruse believes that the neurological activities are activated by a person's psychological activities such as intention and planning. In this respect, a voluntary motor movement is a psychological phenomenon as well (Naruse, 1985).

When a person intends to move his/her body and plans how to actualize a given motor movement, he/she pays close attention to the relevant body parts and operates the musculoskeletal system to perform the intended movement. This operation is a feedforward process. In this striving process, psychological operation and physiological

functioning, such as neural and musculoskeletal systems, intersect and work cooperatively. To perform the intended movement, a person closely monitors his/her motor movement and makes necessary corrections based on incoming sensory information. In this respect, the feedback process is also operating. This process also requires psychological, neurological, and kinesthetic levels of information processing. If an intended movement results, the task is achieved. If an actual movement is different from a planned one, a change needs to be made. This is done by modifying operational strategies based on the sensory feedback.

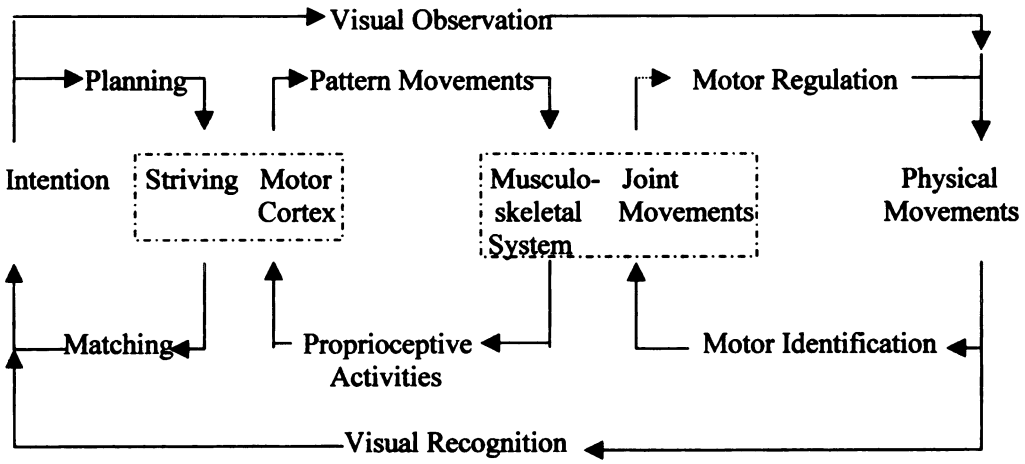


Figure 2. Model of Dosa process to describe the relationship between psychological, neurological, and musculoskeletal systems.

In this respect, the Dosa process is an integrated self-operational process, in which a person functions proactively in the process. In other words, a person engages in constant, active information processing by integrating feedback information into a feedforward operation.

However, we are not always aware of this voluntary, self-regulatory process while moving our body. For example, when we perform daily activities or well-learned behaviors, we tend to focus on a behavioral result and are less aware of the process of what we are doing to actualize the movement. Therefore, we tend to consider that our body moves automatically once we think to perform a specific movement. This is because the movement has been performed so many times and we do not need to be aware of each step in order to perform it. However, if we pay attention to the process, we can become aware of the effort process we used to perform a specific movement. Hypnotic responses are another example of a voluntary movement where we lack a sense of our own movement. When given a suggestion such as, "your arm will move up", we feel as if our arm has started to rise by itself, sometimes we even feel that we cannot stop the movement. This is a nature of suggestion responses. Even if we are moving our arm, we feel as if it moves automatically. Therefore, the manner of awareness of the motor control process, that is, how we perceive the movement, can be influenced by those factors such as previous learning and the situational demands.

On the contrary, when we learn a new physical skill, such as skiing or playing a piano, the self-regulatory process of moving our body becomes a focus of our attention and we are clearly aware of what we are doing to perform a necessary movement. Therefore, as long as it is a voluntary movement of a living human being, a person's psychological operation is involved in the process, however, the level or manner of awareness of this control process can be influenced by a person's internal and/or environmental factors.

Regarding the place of the Dosa regulation system in relation to the whole human regulation system, Ohno (1978) considers that the Dosa regulation system and the psychological regulation system exist under a higher, integrated self-regulation system; the former involves motor control and the latter, psychological functioning in general. These two systems are basically independent but operate in synergy to regulate human behavior.

Evolution of Dosa training

Following the development of the Dosa process, exercises of Dosa training were used to treat individuals with several different conditions. Konno (1977) applied Dosa training in order to treat the behavioral problems of a boy with Attention-Deficit/Hyperactivity Disorder (AD/HD). He aimed to facilitate the child's attention focusing and behavior regulation abilities through Dosa training. Besides characteristic behavioral problems such as difficulty in concentration and impulsivity, children with AD/HD generally show difficulty in motor coordination and tend to tense their entire body in moving a specific part of their body, which suggests a lack of differentiation of body parts. Konno hypothesized that if he could teach this boy how to relax himself, he might learn how to focus his attention and control his disruptive behaviors. As an exercise, Konno used one of the relaxation Dosa exercises of an arm which is to move an arm slowly from side to head in lying on the floor. When the child tightened his arm and/or shoulder, the therapist stopped the movement and helped him relax the tension in a particular part.

A supportive result was obtained. By the third session, the child lay down by himself to start the practice. By the fifth session, the tension in his arm and shoulder while moving the arm lessened and when it happened, the child relaxed his shoulder and elbow, saying "slowly" to himself. Along with this progress in the therapy session, changes in his behavior at home and in the kindergarten were observed. Hyperactive behaviors lessened and he started to play at one place longer than before. He started to listen to the teacher's instruction at the kindergarten and his impulsive, disruptive behavior also lessened. Then he came to pay more attention to other children's play and subsequently started to attend other children's play. Konno concluded that the Dosa exercise helped this boy learn self-control. In sum, his hyperactive behaviors lessened and he came to pay more attention to his environment. This attentional change provided opportunities to learn social, interpersonal behaviors.

Konno (1978) treated five children with AD/HD with Dosa training and examined the behavioral change in detail that he observed during the treatment. He used the same relaxation Dosa exercise as in the previous study. He found that behavioral change of these children showed a fairly common pattern. At first, they showed such behaviors as relaxing tension intentionally before talking and decreasing impulsive, hyperactive behaviors. These behaviors suggest that the children were learning self-control. Then they started to pay more attention to other children's play, imitate them and partly attend to their play. Along with those behavioral changes, their speech improved with increased vocabulary. He posited that the children learned an ability to self-control through Dosa training. The children became calmer and paid more focused attention to their

environment. This change in the quality of attention prepared those children to be ready to learn social behaviors.

Konno's studies showed the effectiveness of Dosa training as an intervention technique to change the emotional and behavioral problems which are typical among children with AD/HD. The following replication studies started to examine the effectiveness of Dosa training to facilitate the development and/or adjustment of children with other types of disability.

Konno, Tanaka, and Ohki (1979) used Dosa training with an autistic child. This seven-year old boy avoided contacts with people and an eye-to-eye gaze. He engaged in a repetitive behavior of circling by himself at one place and his vocabulary was limited. With the intervention of Dosa training, avoidance of social interactions lessened: he started to come close to his mother and hold hands with other children. The repetitive, stereotypic behavior decreased. Eventually, he started to interact with other children by attending to their play.

Tanaka (1982) and Ninomiya and Koshio (1982) used Dosa training with a child with mental retardation. A case study reported by Tanaka (1982) was of a 4 year-old boy with severe mental retardation. This boy did not respond to external stimuli such as big sounds or calling his name nor show any interest in things and people around him. He did not show any emotional responses to external stimuli or personal contacts. He could sit up by himself but could not change posture. Mother complained that she did not feel like she was taking care of a human being because of the lack of responsiveness from her son. Tanaka used the relaxation Dosa exercise of an arm which was used in Konno's Study (1977, 1978). The primary focus of this exercise for this child was to induce his response

to the movement in his arm because he did not show any responses behaviorally and/or emotionally during the practice and let the therapist move his arm. Once he started to respond to the practice behaviorally such as tightening his shoulder or bending his elbow, then the therapist applied the procedure to help him relax the tension.

As the practice progressed, the boy started to show emotional attachment to his mother by extending his hands to her and those emotional responses increased. He started to show an interest in things around him and started to crawl to reach a toy. He started to respond to his name and turned and looked at that person who called his name. This case suggested that Dosa training could facilitate a person's mental functioning and enable him/her to respond more actively. It was also suggested that not just relaxation but also the tension responses, that is the process of responding to one's body during the Dosa practice, may be an important, therapeutic experience which leads to a change in psychological functioning (Ohno, Tanaka, Miyake, & Kobayashi, 1982).

A case study reported by Ninomiya and Koshio (1982) was of a 16-year-old boy who was severely mentally retarded. This boy's developmental level was four months old measured by a developmental test for infants. He could walk by himself, however, the posture was very disfigured: His shoulders were lifted, his back became round and his knees were bent. All daily activities required assistance. He frequently sat aimlessly on the floor and engaged in self-stimulating behaviors such as licking his hands and rubbing his hands together. He did not pay attention to a toy which was positioned in front of his eyes nor did he respond to his name. He did not show any affective responses toward people. The treatment with a relaxation Dosa exercise of an arm was conducted over one year.

This boy showed a strong resistance to the physical touch by the therapists. Therefore, to accept the therapists and the Dosa exercise was a primary goal in the initial stage of the treatment. Once it was reached, the therapists assisted this boy to release tension in his arm and/or shoulder while moving his arm. As the exercise progressed, the following behaviors were observed. He started to show an interest in a toy which was positioned in front of his eyes and extended his arm to reach it. He played with a ball in front of him and watched it while rolling. He also started to lean on the therapist and smiled at him. These behavioral changes indicated that as he learned a controlled movement in his arm through Dosa training, his mental functioning became more active.

Based on this clinical observation, Ninomiya and Koshio speculated that learning to relax the tension in his body helped the boy to develop his active problem solving ability and then facilitated this boy's mental functioning. They argued that a task of Dosa practice is direct and simple, therefore, it would be easy for people with mental retardation to follow, individuals who might otherwise easily get distracted and confused with a complex task.

Tanaka (1985) used Dosa training with a child with Down's Syndrome. The client was a three-year old girl who did not understand language nor acquired communicative speech. She did not respond to the stimuli from outside nor show any interests in other people. She moved forward in a sitting position. She could stand but, her standing posture was unstable and she could not maintain it for a long time. Tanaka used a relaxation exercise around the lower back, groin, and ankles to improve balanced standing. As the practice of the Dosa exercise progressed, this girl's motor movements improved. She could stand by herself for a few minutes, balancing herself, and she started walking with

assistance. Along with those improvements in motor control, she started to hold an eye-to-eye gaze with her mother and smiled at her. She became more interested in things and started to reach things around her. This case also suggested that Dosa training not only improved her motor control ability, but promoted more active, adaptive behaviors.

These clinical studies suggested the possibility that the improvement of motor control ability may influence a person's psychological functioning and behavioral regulation. Based on this assumption, the clinicians started to use the exercises of Dosa training in therapy to work with individuals with various psychological problems and examined its effectiveness as a psychotherapeutic technique. A term, Dosa therapy, was coined for a type of psychotherapy which utilizes the Dosa exercises in order to bring about a change in the client's psycholgoical problem (Naruse, 1992).

Case studies have been conducted to evaluate Dosa training's effectiveness with individuals with various problems. Clients who have been treated successfully with Dosa therapy include individuals with schizophrenia (Tsuru, 1982), anxiety disorder (Fujioka, 1987), obsessive-compulsive disorder (Kubota, 1991), hyperventilation (Hoshikawa, 1992), psychosomatic disorder (Ogawa, 1992), and depression (Shimizu, 1992). Dosa therapy also has been applied effectively to athletes to help them enhance their physical performance (Hoshino, 1982, 1992; Yamanaka, 1992) and older adults to help them maintain and improve their physical and mental functioning (Araragi, 1992).

Dosa Therapy

Naruse (1985, 1992) developed a theory of Dosa therapy based on his clinical experiences over thirty years and/or empirical studies by other researcher/clinicians. In

this section, a theory of Dosa therapy by Naruse will be described followed by a review of the empirical research.

Task Achieving Approach

In Dosa therapy, the client and the therapist meet once a week. A session of Dosa therapy lasts approximately one hour and consists of two parts: half of the session is spent in discussion about the client's condition since the previous session and the other half of the session includes the Dosa exercise. The focus of the discussion is on the client's behavioral, cognitive, affective, and experiential states regarding the issue which brought the client to therapy. This information becomes a basis for the therapist and the client to examine how the client's perception and/or responses to his/her issue have changed outside of the therapy session.

During the Dosa exercise, the client practices moving a specific part of his/her body in a more regulated way. The focus of the practice is placed on the way the client exerts effort in performing the movement, specifically, the manner of self-operation to perform a given movement, rather than performance itself, which is a consequence of a certain self-operation.

The process is assumed to proceed as follows (Naruse, 1985, 1992). The therapist proposes a specific motor movement for the client to practice. This movement is called a Dosa task and becomes a task or problem for the client to solve. A Dosa task is usually transmitted from the therapist to the client verbally and non-verbally. It is given verbally by instructing the client in a specific body movement. It is also proposed non-verbally by gently, and slowly, guiding the client's body in a specific direction to show concretely

what the therapist meant and to assist the client's movement. In order to begin practicing the task, the client first needs to accept a given Dosa task and at least understand it cognitively.

The client then plans to perform a given movement and starts to operate his/her body in order to perform the Dosa task with the therapist's assistance. At some point in this beginning period, the client needs to understand the Dosa task on a physical level. In other words, the client needs to feel physically what the required movement is and feel sensations which happen in the relevant parts of the body. Once the client understands the Dosa task cognitively and physically, then the strategy for performing the Dosa task will become a center of attention for the client. The client closely monitors the performance and pays attention to the sensory feedback while performing the movement. When the strategy to carry out a movement is appropriate, the intended movement occurs. When the operational strategies are inappropriate or insufficient, resultant movement is different from the intended one. In such a case, the client needs to correct strategies using the sensory feedback as a clue. In this respect, the client acts proactively to pursue the process and achieve the goal, paying close attention to his/her own internal operation process as well as the sensory feedback. For this reason, Naruse (1992) referred to Dosa therapy as a task achieving approach.

During the Dosa exercise, the therapist and the client communicate mainly on a physical level between the client's body and the therapist's hand. The therapist also asks about the client's sensorimotor awareness, thoughts and feelings while moving his/her body. This conversation is included based on the assumption that the attempts at

verbalizing internal sensations and/or operations will facilitate the client's focus on his/her experiencing process (Kubota, 1991).

The decision about which exercises to be used as a Dosa task for a specific client is based on the client's condition and the client and the therapist's therapeutic relationship. However, the relaxation Dosa exercises and the integrated Dosa exercises are included frequently as a Dosa task (Naruse, 1985). Relaxation Dosa exercises, especially those which aim to relax muscles around the neck, shoulders, and upper-body, are used frequently. This is because most clients show tension in their upper body when they enter therapy and an adequate level of relaxation is considered to be a necessary base for a controlled motor movement (Naruse, 1985). In order to relax a specific part of the body, a person needs to (1) differentiate a tensed part from a relaxed part, (2) feel the degree of tension, (3) pay close attention to the relevant parts and feel those parts in relation to the whole body, and (4) exert adequate effort to relax and modify the strategy if necessary. This operation requires continuous information processing between the psychological and kinesthetic levels of functioning. In this respect, the relaxation exercises of Dosa therapy help a person's psychological operation move toward self-relaxation (Naruse, 1985).

The integrated Dosa exercise for balancing an up-right position is also frequently adopted as a Dosa task. Clinical observation of Dosa therapy with severely disabled children suggested this practice might provide an experience which develops a sense of self in the world (Naruse, 1992). When those children who could not sit by themselves, sat or stood on their own feet with assistance, it was frequently observed that they looked up and then around almost as if that was the first time they encountered the world out

there and tried to acknowledge the space surrounding them. After the appearance of such behaviors, they started to become interested in things and people and behave more actively. When those children came to sit by themselves with more stability, they started to extend their arms in attempt to reach an object around them which indicated that they differentiated themselves from the objective world around them. Based on these observations, it is assumed that balancing a person's own body in three dimensional space in relation to gravity helps a person develop a sense of self and a feeling of existence in the world; a foundation of him/herself in relation to the psycho-social environment.

Jacobson (1964, 1974) developed progressive relaxation to facilitate mental control by means of control over the musculoskeletal system and later renamed it a self-operation control. The practices to learn to relax a specific part of the body were described, which proceeds from paying attention to a certain part, noting a tension and gradually relaxing a target muscle/muscle group. On the practical level, a commonality can be seen in the procedures between Dosa therapy and progressive relaxation. However, Jacobson (1964) described relaxation as "requiring no effort" (p.72), and a tension as work. This may be true physiologically. However, from the viewpoint of Dosa therapy, on the psychological level, relaxation requires a certain mental operation (effort) which was described above. In this respect, progressive relaxation and Dosa therapy may share commonalities in the goal and the procedures, however a difference can be seen in the conceptualization of the process.

Therapeutic Factor

Naruse (1988) believed every person lives by exercising agency and referred to the center of a person's agency as the self. He defined the self as a phenomenological experience with a feeling of "I". The self utilizes his/her potential within a limit of bio-psycho-social constraint and actualizes his/her own potentials as much as possible. The psychological existence of a person's body, which a person is aware of as his/her own body and can operate intentionally, is defined as "self body". The self operates self body and utilizes it as a tool in interacting with its environment.

Naruse (1988, 1992) hypothesized that Dosa therapy utilizes a person's experiential functioning to bring about covert, psychological changes, which then leads to overt, behavioral changes. For this reason, he referred to Dosa therapy as an experiential method. Naruse (1988) believed that mobilizing experiential functioning is one of the common therapeutic factors of psychotherapy. He defined the experiencing as a subjective, active feeling when a person is engaging with the environment and includes both feedforward and feedback information during this self-activity process. It is a total, here and now feeling of which a person is aware while operating on something (Naruse, 1988). Experiencing includes a conscious feeling as well as unconscious and subconscious functioning or tacit knowledge of which a person is implicitly aware regarding self-activity (Naruse, 1992).

Naruse (1992) differentiated the manner of experiencing from the content of experiencing and defined the latter as what a person is experiencing, while the former as how a person is experiencing the content matter. He argued that the content of experiencing has been addressed as a target in most modalities of psychotherapy which

have been developed by western clinicians/researchers, however, that the manner of experiencing is more important than the content and, thus, should be directly addressed in therapy.

Naruse (1992) considered that the manner of experiencing includes affective, emotional responses such as being sad, happy, or angry and feelings which arise when a person regulates his/her behavior such as uneasy, relaxed, upset, accepted, and satisfied. It also includes feelings about self such as a feeling of self-identity and a feeling of evolving, feelings regarding one's body such as a feeling of owning a body and a feeling of dissociating from the body, and feelings regarding the relationship with the environment such as a feeling of fit and a feeling of being understood by others. He assumed that the manners of experiencing which are functional and enable individuals to lead an adaptive, healthy life include those which accompany a feeling of being whole rather than fragmented, being alive rather than vague and unclear, being active rather than dormant or stagnated, and being stable rather than unstable.

In addressing the manner of experiencing, it is desirable that the person focuses on him/herself as a target of observation from which experiencing is generated. When a person views him/herself, the abstract self-concepts such as personality, behavioral tendencies, values, and abilities may not be adequate as targets of observation. These personal attributes tend to elicit a cognitive, evaluative judgement and generate an affective response, which is negative most of the time for people who are in therapy. Thus, Naruse felt that focusing on the abstract aspect of the self is not useful for therapy. Those aspects of the self which are concrete and direct in nature and do not elicit evaluative, affective reactions are more appropriate targets of observation. For example,

the body sensations and feelings and those changes that a person becomes aware of when sitting in a chair or when a person moves his/her body, can be appropriate targets of observation in addressing a person's manner of experiencing.

Naruse (1992) explained that the Dosa process sensitively reflects a person's manner of experiencing in a small, subtle motor movement and/or tension. Naruse argued that Dosa therapy can address directly the manner of experiencing rather than understanding and interpreting the content of experiencing. He assumed that a person's problem is caused by an inappropriate manner of experiencing, and, therefore, the goal of Dosa therapy is to change that manner of experiencing to a more functional one. The practice of a Dosa task could help a person modify his/her manner of experiencing to a new, more functional one. In other words, the Dosa task can be a tool to provide a person with an opportunity to learn a new manner of experiencing. It is assumed that this new manner of experiencing can lead to a change in a person's manner of experiencing in their daily living, such as the way of perceiving, feeling, and thinking about things and their attitudes toward themselves and their own life (Naruse, 1992). Furthermore, it is assumed that a feeling of self-operation during the motor control, that is, a feeling of agency in actively exerting effort to move a specific body part, is enhanced through Dosa therapy and will have ramifications in other areas of the person's existence.

Humanistic psychotherapy, which includes experiential and phenomenological therapies, also stresses addressing a person's experiential functioning (Gendlin, 1979, 1992; Greenberg, Safran, & Rice, 1989). In particular, Gendlin's (1979, 1992) experiential psychotherapy focuses on the *experiential felt sense* which is defined as a bodily feeling that contains meaning about a person's interrelation with his/her world.

Naruse (1988, 1992) did not discuss his theory of experiencing and Dosa therapy in relation to humanistic psychotherapy, however, it appears that his theory shares some views with humanistic psychotherapy. Both humanistic psychotherapy and Dosa therapy address a therapy process by conceptualizing it as a dynamic process (Naruse, 1992; Rogers, 1958). They also assume self as an agency of human functioning which contains potential for change and growth (Naruse, 1985; Rowan, 1992). However, in Dosa therapy, the manner of experiencing is addressed by means of body movement. In other words, the practice of motor control is expected to influence the client's manner of experiencing in general, without directly focusing on his/her experiences regarding the problem. This aspect is a characteristic of Dosa therapy.

Empirical Studies on Dosa therapy

Experimental Studies

Konno and Ohno (1987) conducted an experiment to identify factors which facilitate the relaxation process through Dosa training. They administered a relaxation Dosa exercise to fifty-eight, healthy, female college students and had them complete a 20-item questionnaire after the practice about their experiences regarding the relaxation exercise. A factor analysis of the results identified three factors. One of the factors (Factor I) was related to psychological acceptance of the experimental situation and/or relaxation assistance. A second factor (Factor II) was related to differentiated and integrated body awareness. And the last factor (Factor III) was related to the feeling of generalized relaxation. The individuals who reported that they focused on their body sensations during the practice were classified into the "concentrated" group and those

who did not focus on their body sensations during the practice were classified as the "non-concentrated" group. Their scores on the three factors were compared. It was found that the concentrated group scored significantly higher on Factors I and II than the non-concentrated group. This result suggested that those subjects who paid attention to the relaxation process or the body sensations while relaxing their body tended to accept the relaxation assistance more easily and have more differentiated and integrated body awareness than the subjects who did not focus on their body sensations during the practice. They concluded that a person's active involvement in the relaxation process is indispensable for self-relaxation with Dosa therapy.

Konno (1993) examined the effect of body tension and the awareness of it, on a person's experience of relaxation. Sixty-five college students were divided into three groups based on body tension and their awareness of it. The awareness group consisted of individuals who had muscular tension around their neck, shoulder and low back and were limited in moving those parts due to the tension and were aware of those tensions. The non-awareness group included individuals who had muscle tension around their neck, shoulder and low back but were not aware of it. The no-tension group included individuals who did not have muscle tension in the upper body. The subjects had a relaxation exercise around the upper-body and answered a questionnaire regarding their feelings and body sensations after the relaxation. The results showed that the awareness and the no-tension groups reported more decrease in the uncomfortable body sensations than the non-awareness group. Individuals in these two groups also reported more stability in standing, lightness of body, and good mood. On the contrary, the non-awareness group reported more vague/non-specific relaxed feelings such as feeling light-

headed and difficulty in concentration, and uncomfortable body sensations such as heavy or languid feeling or a feeling that their body was not his/her own. These results showed that individuals who were aware of their body tension experienced relaxation more positively, whereas individuals who lacked awareness of their body tension responded negatively to relaxation with a feeling of light-headedness or difficulty in concentration. It was suggested that awareness of body tension influences how a person responds to the changes in his/her body. More specifically, when a person perceived a change in body sensation as a meaningful experience, he/she could utilize this experience in finding a clue to solve his/her problem.

Konno (1989) examined the changes in the acuity of tactile sensation as a result of the relaxation exercise of Dosa therapy. He administered a relaxation Dosa exercise to twenty female college students and measured the acuity of tactile sensations of their shoulders by means of two-point limen, also known as the two-point threshold, which is the traditional measure of spatial acuity, before and after the relaxation exercise. The results showed that the two-point limen decreased significantly after the relaxation. There was no significant difference in the two-point limen between right and left shoulder.

The subjects were then divided into two groups, high or low in acceptance of relaxation, based on the scores on the questionnaire about relaxation experiences. Those who scored high on items related to differentiated and integrated awareness of relaxation were considered as high in acceptance of relaxation and were classified as the high acceptance group. Those who scored low on those items were placed in the low acceptance group. The comparison of the changes in two-point limen between these two groups revealed that the two-point limen of the high acceptance group was significantly

lowered after relaxation, whereas there was no difference in two-point limen before and after the relaxation with the low acceptance group. These results indicated that relaxation through Dosa therapy increased the subjects' acuity of tactile sensation. It also suggested that acceptance of relaxation plays an important role in awareness of changes in body sensations.

Konno (1997) also examined the effect of relaxation and postural training on visual and auditory perception. Eighteen college students were randomly assigned to the experimental and control groups. The experimental group had a relaxation Dosa exercise of shoulders and postural training and took visual acuity, visual field, and hearing acuity tests before and after the relaxation exercise. The control group took the same test before and after the thirty-minute conversation with the experimenter. Individuals in the experimental group reported positive changes in body perception and external perception after the relaxation. More specifically, those individuals felt more grounded in standing, felt that their body became more active, felt more relaxed, and had a feeling of fullness in their abdomen. They also reported that they saw the external world more vividly, experienced a broader visual field, and had a more lively impression about the external world. The results of the tests showed the visual acuity, visual field, and hearing acuity of the experimental group significantly increased over those of the control group. It was suggested that the relaxation experience through Dosa therapy may enhance the external perception by improving the visual and auditory acuity.

In sum, these studies conducted by Konno, suggest that awareness of one's body influences how a person perceives and accepts relaxation experiences. Furthermore, it appears that relaxation experiences improve a person's perception.

Clinical Studies

Clinical studies which aimed to examine the effectiveness of Dosa therapy have also been conducted. Most of them are small-scale case studies. In this section, those clinical studies will be reviewed.

Tsuru (1982) applied Dosa therapy to five patients with schizophrenia in an in-patient setting. The patients were all female with ages ranging from 31 to 43. They showed symptoms which are typical of a person with schizophrenia such as auditory hallucination, delusion, flat affect, and mutism. They had treatment with a relaxation Dosa exercise around the upper body once a week for 14 sessions. Rigid muscle tension was observed for all of them around their neck, shoulders, torso and lower back. The aim of the relaxation exercises was to help the women learn how to relax the rigid muscle tensions in their body. As they relaxed those tensions with the therapist's assistance, they became aware of the tension in their body and learned how to relax it by themselves more smoothly. Along with the progress of self-relaxation, changes in their symptomatic behaviors were observed in the therapy session at first and later in other situations. The patients started to relate to the therapist more actively during the exercise. They also started to interact with nurses and other patients. Their impulsive behavior resulting from delusions, decreased. Over all, they became more active and interactive. Tsuru speculated on the relationship between in-therapy experiences and behavioral change as follows. In order to relax body tension, the patients had to resolve anxiety to release a familiar body pattern and change themselves. This experience, she suggested, facilitated their self activity and helped them respond more openly and actively in the daily situations.

Fujioka (1987) reported the results of Dosa therapy with a man with conversion disorder. Fujioka examined the therapeutic process of Dosa therapy based on this case. The client was experiencing difficulties such as a lightheadedness, loss of balance and difficulty in walking in social situations. Dosa therapy, with a relaxation Dosa exercise of the upper body, was conducted with this client for thirteen sessions. In the beginning of the relaxation exercise, the client could relax a rigid tension around his shoulder only slightly. However, he did not feel that he was relaxing it. As the practice progressed, his awareness changed from believing that his body relaxed by itself to believing that he was relaxing that tension. Along with this progress in the Dosa practice, changes in his behaviors were observed. The symptoms started to happen less and he was able to stand for about one hour at a ceremony. He became less worried that his symptom would appear and his overall tightness in interpersonal situations lessened. He also started to feel more confident about himself.

Fujioka analyzed the therapy process as follows. The first five sessions were considered an opening phase where the client encountered his body by focusing on the sensations in his body. The next two sessions were an expansion phase where the client learned self-relaxation but was not aware that he was relaxing himself. Then followed the self body operation phase where the client came to feel that he was relaxing a rigid tension himself. The process ended with the closing phase where the client worked thoroughly with the strategies of relaxation. Fujioka argued that the goal of Dosa therapy is to help the client facilitate activity of his/her self, gain a lively and active sense of his/her body, emotion, and existence, and monitor this internal self-functioning.

Kubota (1991) applied Dosa therapy to a woman with obsessive-compulsive disorder and examined the therapy process in terms of self activity which was facilitated through Dosa therapy. It was found that as the client became more aware of subtle sensorimotor information from her body and learned to move her body more voluntarily, her irrational thoughts changed into more rational ones and she started to act based on a more realistic judgement of the situation. It was suggested that Dosa therapy facilitated a form of self-activity in such a way that this client perceived her body as an object of attention and operated it more actively and realistically. It was also speculated that a manner of self-activity became more active and realistic through the Dosa exercise and this change in manner of self-activity led her to respond based on a more realistic judgment without being obsessed with her irrational thoughts.

Watanabe (1995) used Dosa therapy to treat nine nurses with burnout syndrome. A self-concept scale and a burnout scale were administered before and after the intervention. The intervention with a relaxation Dosa exercise around the torso was conducted for twelve sessions. It was found that at the end of the intervention, the overall burnout score decreased and that the self-concept regarding the body changed in a positive direction. It was suggested that awareness of the body through self-relaxation led to a change in self-concept which is directly related to the body and an improvement in mood, such as reduction of depression and exhaustion, which are symptoms of burnout.

A case of hyperventilation which was treated with Dosa therapy was reported by Hoshikawa (1992). The client was a sixteen-year-old, high school girl. She experienced an attack at school and/or in a train almost everyday and sometimes the attack accompanied stiffness in her extremities. The therapy was conducted for five sessions

and a relaxation exercise around shoulders was used. The symptom disappeared after the first session and this condition was maintained for the rest of the time. From this case, Hishikawa speculated that this girl perceived her symptom as something which happened automatically and was out of her control. Through Dosa exercise, she practiced controlling her body movements and facilitated awareness of her body. This experience led to a disappearance of the symptom. The successive practice of self relaxation might have contributed to her remaining symptom-free.

Ogawa (1992) treated a man with a psychosomatic problem. The client was a middle-aged man who suffered from dizziness, excessive tension in his shoulders and pain in the back. These symptoms started after a job transfer due to stress. He first saw an internist, an orthopedist, and a dentist, however, no physical problem was found. A relaxation Dosa exercise around the upper body was used to help him become aware of tension in his body and learn to relax it. Through Dosa exercise, the client became aware of tension in his neck, shoulder, and back and came to relax them by himself. Along with the progress in therapy, his physical symptoms started to decrease and he became aware of the relationship between stress and physical tension. He then found a new way of coping with his stress. It was indicated that Dosa exercise helped the client become aware of tension in his body and relax it voluntarily. This experience led the client to become aware of the relationship between his physical symptoms and psychological state and he started to adopt a new coping strategy for his stress.

Shimizu (1992) reported a case of depression which was treated with Dosa therapy. The client was a middle-aged man who suffered from depressed mood and agitation and reported a suicidal ideation. The session with Dosa therapy was interspersed

nine times in conventional counseling sessions. By the thirteenth session, his depressed mood was improved and he started to act more actively and respond more flexibly in interpersonal situations. Shimizu speculated that through Dosa exercise, the client noticed a new movement and sensation in his body. Based on these new experiences, the client came to perceive himself differently and behave based on a realistic judgment.

Tsuru (1991) also applied Dosa therapy to a man with depression and examined a therapeutic factor of Dosa therapy from the therapy process. The client became depressed and withdrawn after experiencing an interpersonal conflict. He also had a feeling of restlessness when thinking about that traumatic incident and sometimes that feeling occupied him for the rest of the day. In therapy, he practiced relaxation Dosa exercises around the neck, shoulder, and torso. Through the practice of relaxing tension in his body, he became aware of subtle sensations in his body and started to feel that he was relaxing the tensions in his body and felt his body more real as his own. He eventually learned to relax smoothly and felt that his body was more relaxed and this became a basis of his mental functioning. Along with these experiences through Dosa exercises, he started to observe his behavior more objectively, his anxiety in interpersonal situations lessened, and he became more active in his work, and reported a strategy to stop negative thinking when it occurred and showed signs of self-control over his thoughts. Through this case, Tsuru speculated that a person gained a more real and lively sense of their own body through Dosa practice and this experience led to the changes in behaviors. It was assumed that bringing about a change in one's own sense of self body is a major therapeutic factor of Dosa therapy.

These clinical studies, though small in scale, provide beginning evidence that Dosa therapy has been effective in helping individuals with various psychological problems. As for the research method, most of them used a case study method except for Watanabe's study (1995) which adopted a pre test-post test design with one group. Therefore, the evidence, while systematically noted, is somewhat anecdotal in nature and threats to internal validity exist. Analyses of the underlying mechanism of therapeutic change were conducted qualitatively. More specifically, a researcher (1) described the process of Dosa task performance in the session and the process of the client's behavioral change outside the therapy, (2) juxtaposed the in-session event and the out-of-therapy change to see their relationship, (3) found a pattern in which a specific in-session event precedes an out-of-therapy change, and (4) made an inference about the underlying mechanism which might relate the in-session event to the change in behavior outside the therapy. For example, through analysis of the therapeutic process of a client with obsessive-compulsive disorder, Kubota (1991) described a parallel pattern between the Dosa practice and an out-of-session change. When the client came to relax her body more voluntarily and acknowledged that she was doing so intentionally, the client could divert her attention from her obsessive ideas to relevant things at that moment. From this pattern, it was inferred that the client's self functioning became more active and reality-based through the Dosa practice and that this manner of self functioning enabled her to gain more control over her obsession in her daily living based on more realistic judgements.

Hypotheses and Research Questions

This dissertation study was undertaken in an effort to move research about Dosa therapy to another level. By using rigorous, single subject methodology, systematic observations were conducted to examine the effectiveness of Dosa therapy for individuals with anxiety problems. In addition, the underlying mechanism by which Dosa therapy operates was explored by using a task analysis approach which is a method of process study. The research questions and specific hypotheses of this dissertation study are as follows.

First, does Dosa therapy facilitate a person's experiencing process? It was hypothesized that the participants' manner of experiencing would change in the direction of becoming more internally oriented, integrated, reality-based, and active after the Dosa therapy intervention. Specifically, the participants' experiencing would reach a higher level on the Experiencing scale (see Appendix H). The awareness of somatic sensations during the Dosa practice would increase in quantity and quality, as measured by the Questionnaire for Somatic Awareness (see Appendix L).

Second, does Dosa therapy change a person's manner of self-functioning to a more adjusted manner? This question was examined on cognitive, affective, and behavioral levels. On the cognitive level, it was hypothesized that the participants would become more autonomous and that there would be an increase in their agency after the treatment. Specifically, a participant's locus of control would become more internal on the Belief in Personal Control Scale (see Appendix J) and a participant's self-efficacy level would become higher on the self-efficacy scale (see Appendix I). On the behavioral level, it was hypothesized that the frequency or duration of undesirable behavior

regarding the participant's anxiety problem would decrease or desirable behavior would increase as recorded by the Behavior Record Form (see Appendix G). On the affective level, it was hypothesized that the participant's anxiety level would decrease and result in lower scores on the Clinical Anxiety Scale (see Appendix F).

Lastly, a question was asked about what was happening in the Dosa therapy session which generated the aforementioned change. This question was answered by analyzing the therapy process qualitatively and developing the models which describe the process of how the Dosa task was performed. By using a task analysis approach, the performance model was developed to describe the process of how the Dosa task was achieved. From this model, the operations model was developed to describe a participant's possible mental operations which generated the observable performances. In so doing, an underlying mechanism of Dosa therapy which connects experiences in body with changes in psychological functioning, was explored.

CHAPTER 3

METHODOLOGY

Overview

This dissertation study utilized single subject methodology as the research design, which involves an intensive, systematic observation of each subject over time (Bloom, Fischer, & Orme, 1995; Gingerich, 1988). This design is less common in contemporary research, where most studies focus on a group of individuals, aggregate the data, and compare means to determine effects or differences. However, single subject design is particularly well suited for the evaluation of clinical practice with individual clients and the effectiveness of an intervention as was undertaken for this dissertation (Bloom, Fischer, & Orme, 1995; Kazdin, 1982).

In order to investigate the change process which operates in Dosa therapy, a task analysis approach was adopted as a data analysis method (Reid, 1988; Rice & Greenberg, 1984). This analysis method engages in a continuous, moment-by-moment analysis of the psychotherapeutic process. This method of data analysis is also less common but adds to an important element to the conventional outcome research of psychotherapy which compares conditions before and after the intervention to see any effect of the therapy. This section starts with the descriptions of single subject design and task analysis approach.

Single Subject Design

Single subject research designs which involve an intensive observation of the individual are also referred to as ideographic strategies, whereas group-comparison designs which compare the average of groups are referred to as monothetic strategies. The relative values of single subject versus group design methodologies have generated arguments and the conclusion has not been reached as yet (McGuigan, 1990).

A major criticism of the between-group designs for applied research is that conclusions are drawn based on group means and these values may not be informative in understanding an individual's behavior. Under some conditions, the group means may not be indicative of individual behavior and could be misleading (McGuigan, 1990). In those cases, focus on a single subject allows the researcher to know more about the individual's behavior under a specific condition, which is particularly important in clinical practice.

The case study method has been used to study the individual client in an applied research field. This method allows a researcher to study a single case in a naturalistic and uncontrolled setting and provides unique, rich information about a specific individual. However, these very specific characteristics are also weaknesses of this research method. That is, the case study method lacks controlled conditions and carefully administered objective measures of behaviors (Kazdin, 1998).

Single subject design has been developed as a more intensive observation method of individual persons than a traditional case study method and advocated as a method of applied research to immediately and directly evaluate the effect of practice (Barlow & Hersen 1984; Bloom, Fischer, & Orme, 1995; Kazdin, 1982; York, 1998). Single subject

design involves systematic observations of a specified problem or objective of the client and measures the problem/objective repeatedly over time. In this respect, single subject design is also referred to as a repeated measures design.

The process starts with specifying a target or targets of intervention, proceeds to monitoring the intervention process, and ends with evaluating the outcome. When specifying the target(s), a concrete, observable behavior which represents the client's problem is selected and operations or measurement procedures of the target behavior are specified. Single subject design typically consists of two types of phases; a baseline phase (A) and an intervention phase (B). During a baseline phase, the information regarding the target behavior is collected through systematic observation and/or report. However, no target-focused intervention is implemented. During an intervention phase, one or more target-focused intervention(s) are implemented and change in the target behavior(s) is measured.

In order to draw a conclusion about whether the intervention had an impact on the target behavior, a practitioner/researcher looks for persistent concomitant variation between the intervention and the predicted change in the target. That is, when change in the target behavior occurs after the intervention is introduced and only when these two events persistently covary, then this condition provides the practitioner/researcher a basis on which to draw the conclusion that the intervention may be a cause of change of the target (Barlow & Hersen, 1984). Therefore, the target behavior is compared between the baseline and the intervention phase on the same person. In this respect, each subject serves as its own control.

Generality of the findings from a study with the single subject design is made based on similarities between a particular subject treated in the study and a person in question. That is, if a study shows that a given intervention is successful with an individual with a particular problem and certain personal characteristics, then the clinician can be relatively confident to say that a person with the same problem and the similar personal characteristics might respond well to that particular intervention. This process is called logical generalization (Edgington, 1966) and this has provided a rationale for applied researchers to generalize the results from a single case (Barlow & Hersen, 1984; Dukes, 1965; Shontz, 1965).

An advantage of single subject design compared to a group design concerns the reduction of error variance (McGuigan, 1990). This repeated-treatment design eliminates individual differences by employing the same participant as his/her own control. Thus, this design makes it possible to reduce error variance in the study, where error variance is a measure of the variance for which we cannot account.

Task Analysis Approach

Psychotherapy research can be classified as outcome research or process research. Outcome research addresses the presence and magnitude of changes that are brought about through the therapy, whereas process research focuses on the interaction between the client and the therapist in the therapy session (Lambert & Hill, 1994). Outcome research, which typically adopts a group comparison design and sees the difference(s) in a client's behavior before and after the therapy, has been criticized for its limitation around understanding therapeutic factors (Barlow, 1981). Specifically, Barlow (1981)

argued that conventional outcome research failed to answer important questions for clinical practice, that is, why a specific treatment works and for whom it works and for whom it does not. The use of a single subject design, as discussed above, alleviates some of these problems. However, to augment this situation, process research has been proposed as a way to investigate the psychotherapy change process on a moment-by-moment basis (Rice & Greenberg, 1984; Safran, Greenberg, & Rice, 1988). A task analysis approach was introduced as a method of process research by Greenberg (1975), Rice and Saperia (1984), and Safran, Greenberg, and Rice (1988) to investigate the process of therapeutic interaction and to connect in-session change with outside-therapy change.

Task analysis has been used since the 1940s in Industrial Psychology and the field of education to study human problem-solving processes. Newell and Simon (1972) developed a general model of the human problem-solving process in specific task environments by analyzing individual verbal protocols and inspecting qualitative similarities and differences between various protocols. This general approach is referred to as the task-analysis approach. In this approach, the researcher starts with developing a model of the process by which a specific task is accomplished. The initial model is developed based on a theory and rational analysis of human information processing in a specific problem-solving situation. Then the researcher inspects individual protocols, compares them with the initial model, and revises the model to bring it in line with the real phenomenon. This procedure involves the progressive development of a heuristic model of human performance and information processing activities. This model is to be

tested and refined in an interactive fashion on the basis of its ability to model an individual's specific problem-solving performance.

Greenberg (1975, 1984) and Rice and Greenberg (1984) introduced this approach to the psychotherapy research field by reasoning that psychotherapeutic intervention is considered to be a task environment where the client attempts to perform a particular cognitive-affective task. With this approach, they attempted to identify the client's inner operations that are essential for the successful resolution of a specific therapeutic task. The process of building a model of client inner operation while resolving a therapeutic task, involves three stages. First, a researcher selects and describes the task and task environment. Second, a model of therapeutic process for a specific change task in the session is constructed based on theoretical, rational analysis and the researcher's clinical experiences. Lastly, the developed model is examined empirically based on intensive examination of several individual cases and will be revised based on the empirical data. Hypothesis testing to verify the model has been conducted by differential efficacy studies and/or comparing successful cases to unsuccessful ones on the outcome (Greenberg, 1984).

In constructing a model of change mechanisms, Rice and Greenberg (1984) proposed two levels of abstraction in an attempt to understand what the client needs to do in therapy to achieve change. The first level is referred to as client *process*, which concerns the manifest client performance in the session. The second level is referred to as client *operation*, which concerns the client's internal mental operations and is inferred from the former, performance process. Rice and Greenberg expect that the level of client operations will become a transferable level of understanding across different orientations

of psychotherapy. The goal of the task analysis is to identify and understand the client's internal operation that enables the client to resolve successfully a class of therapeutic tasks (Rice & Saperia, 1984).

For example, Greenberg (1984) developed a performance model and an operations model of conflict resolution in Gestalt therapy through the empty chair work. In the performance model, he described the conflict resolution dialogue between the two chairs which starts with a split between them, then moves to criticism of one chair and affective reactions and a new experience of the other chair and is eventually followed by a negotiation and/or an integration between the two parts. The operations model, which was inferred from the performance model, starts with identification of the most alive sense of criticism in one chair and formation of reaction in the other chair and ends with dissolution of differences and integration of both perspectives.

In order to conduct a process study, it is important to examine whether a specific task in the session has a therapeutic effect which is worth studying in depth. When it is found that the task is therapeutically meaningful, then process analysis can be pursued to examine therapeutic factors (Greenberg, 1984).

In Dosa therapy, performing a specific movement is a primary focus in the therapy session (Naruse, 1992). This movement is called a Dosa task and is proposed by the therapist to the client and is accepted by the client. If the client can perform a given movement, the Dosa task is achieved. However, most of the time, the client encounters difficulty performing it in a controlled manner, that is, tensing and relaxing specific parts of the body simultaneously. When the client notices such difficulty, a problem-solving situation arises where the client and the therapist work together to resolve this situation.

A problem is solved when a client manages to make a movement with the therapist's assistance. A Dosa task involves primarily a sensorimotor process, however, it also includes a psychological process. The therapist provides a safe environment and assistance for the client to successfully solve the task. The client practices the movement until he/she can perform it voluntarily. Therefore, for a Dosa task, a problem and a goal are defined clearly and the start and the end of the process are also clearly demarcated and noticeable both for the client and the therapist. For this reason, a task analysis approach was selected to analyze the Dosa therapy process. A performance model of the Dosa task process addresses the Dosa performance process. An operation model focuses on inner operations during the Dosa task performance. These two models were used to speculate about an underlying mechanism of the Dosa process and an aspect of a body-mind interaction during Dosa therapy.

Recruitment of Participants

The participants of this study were recruited from among female graduate students who had an anxiety problem. An anxiety problem was defined in this study as an issue or problem which worried an individual and made her feel anxious. Recruitment proceeded as follows. The investigator visited four social work classes for students in the master's program with permission of the instructors. In the class, the investigator distributed a handout (see Appendix A), explained the purpose of the study and the length of commitment and asked for their participation. Nine students volunteered to participate from approximately eighty students in the four classes.

Then an individual screening session was held with the nine volunteers, individually. In the screening session, the investigator again explained the purpose of this study, the philosophy of Dosa therapy, and the nature and duration of involvement in this study. When the volunteer agreed to proceed to the interview to talk about her anxiety problem, she was asked to sign the consent form (see Appendix B) and reminded that participation was voluntary, that she could discontinue at any point, and that her identity would be kept anonymous. The questionnaire regarding anxiety problems and background information (see Appendix E) was administered to collect information about the issue the volunteers wanted to work on and some brief demographic information. The clinical anxiety scale (see Appendix F) was administered to measure the volunteer's anxiety level. Based on the information given on the questionnaire, the investigator conducted an interview to set a goal/objective of the therapy and to identify a behavior which represented the volunteers' anxiety problems in order to monitor the progress of the therapy.

The criteria of inclusion and exclusion for this study were set as follows. Individuals whose main problem was anxiety were to be included. Those who had other psychiatric problems combined with anxiety or those who had been diagnosed or appeared to be classifiable as having other psychiatric problems than anxiety were to be excluded from the study. In order to determine whether an individual might be classifiable as having psychiatric problems, the DSM-IV was used to evaluate their symptoms (American Psychiatric Association, 1994).

Participants

All nine volunteers met the criteria of inclusion and were included in this study. Table 1 shows the participants' anxiety problem, the anxiety score on the clinical anxiety scale, and the disturbance level on the questionnaire for anxiety problem, which was answered on a 10-point scale, 1 meaning no trouble at all and 10, very disturbed.

As seen in Table 1, the main anxiety problems the participants addressed were diverse. The anxiety scores on the clinical anxiety scale (Hudson, 1992; Westhuis & Thyer, 1989), described later in this section, ranged from 8 to 47. The clinical anxiety scale has a clinical cutting score, which is 30 (± 5). Therefore, the score of participant 5 indicates that she has an anxiety problem. The scores of Participant 1, 4, and 6 fell in an area where it indicates possible presence of anxiety. The scores of Participant 2, 3, 7, 8, and 9 indicate that their anxiety levels were within normal range. Their disturbance levels on the questionnaire regarding anxiety problems and background information, which were self-rated, ranged from 6 to 9, suggesting they were quite disturbed by the issue.

Among these participants, four of them terminated their participation in the middle of the study and five of them completed their participation. Participant 1 terminated her participation after the first interview because of a time conflict. Participants 2 and 5 terminated their participation after the second interview of the intervention phase. Participant 2 acknowledged that talking about her issue invoked the same dreadful feeling which she experienced as an issue in her daily life and made her feel uncomfortable. For this reason, she decided to end her participation. Participant 5 had scoliosis for which she was having treatment. Before the therapy started, she said that relaxation exercise might help her condition. When it actually started, she began

worrying that the Dosa exercise might have a negative effect on her body condition. The investigator made sure that no unusual condition had occurred in her body at that point and supported her desire to terminate her participation. Participant 4 terminated her

Table 1
Participants' Anxiety Problem, Anxiety Score, Disturbance Level and Extent of Participation

Participant	Anxiety Problem	Anxiety Score	Disturbance Level	Extent of Participation
Participant 1	Taking care of 1-year-old daughter	32	6	Terminated after the 1st baseline session
Participant 2	Anxiety when having no control of a situation	17	7-8	Terminated after the 2nd intervention
Participant 3	Difficulty of concentration on study	13	8	Completed treatment
Participant 4	Balancing work, study, and private life	30	8	Terminated after the 4th intervention
Participant 5	Balancing study and family demands	47	9	Terminated after the 2nd intervention
Participant 6	Feeling of isolation and not fitting in	26	8	Completed treatment
Participant 7	Procrastination	16	8	Completed treatment
Participant 8	Feeling toward boyfriend	8	8	Completed treatment
Participant 9	Anxious feeling	18	6-8	Completed treatment

participation after the fourth session of the intervention phase because her schedule changed and she could not find time to continue her participation.

The participants who stayed in the study are described in detail below:

Participant 3 was a fifty-year-old woman. She came back to school after working for more than twenty years. She felt overwhelmed by the amount of work she needed to do for the classes and had difficulty focusing when she actually sat down to study. She hoped to become more relaxed and to concentrate on her study. The actual amount of study time recorded in hours was selected as the behavior to monitor.

Participant 6 was a forty-three-year-old woman. She felt that she has not fit in since she was a young girl. She questioned the norm most of the time and liked to challenge things, aiming for a high standard. She criticized that the majority of people simply went along with the norm. For this reason, she always felt isolated. Intellectually, she knew that everyone need not think the way she did, however, she was still disturbed by thinking of this situation. Her goal of the therapy was to decrease a feeling of frustration or stress and to let go of it. Since stress and frustration built up during the day, she had difficulty falling asleep at night. As a behavior to monitor, she decided to focus on this behavior and rate the difficulty falling asleep on a scale from 0 to 10, 0 meaning not difficult at all and 10, very difficult. She was to rate her sleep behavior each morning.

Participant 7 was a twenty-three-year-old woman. She was dissatisfied with the way she did school work. Through her undergraduate years, she almost exclusively waited until the last minute to study for the tests. Although she did fine on them, she always felt that she should have been studying more. As a graduate student, she found herself becoming too anxious to sit and write a paper because she felt it difficult. For this

reason she avoided doing it. At the same time, she felt that it was not fun to sit and study and interacting with friends was more fun. As a goal of therapy, she wanted to become less anxious in doing schoolwork and do the work without procrastinating. As a behavior to monitor, she decided to count her daily study time in hours.

Participant 8 was a twenty-three-year-old woman. She had a boyfriend from undergraduate school. Recently, her boyfriend started to talk about engagement. However, she was ambivalent about her feelings toward him. At times she felt he was the one and other times she was not sure about her feelings. Therefore, she felt elated with the idea of engagement at one moment and at the next moment, she felt anxious about it. Her goal for this therapy was to become clear about her feelings and making a decision confidently. As a behavior to monitor, she decided to rate her level of assurance of her feelings toward her boyfriend on a scale from 0 to 10, 0 meaning not sure at all and 10, completely sure about my feelings toward boyfriend.

Participant 9 was a forty-three-year-old woman. She complained that she had been feeling anxious and felt restless lately. She did not know what was causing her troubling feelings, but thought the stress of schoolwork might be one of the causes. She wanted to slow down inside and feel less anxious. She noticed that she tended to become curt with her husband, when she became anxious. She also kicked things or cried. Therefore as a behavior to monitor her anxiety level, the aforementioned behaviors to ventilate her anxiety were focused on and she counted the occurrence of those behaviors.

Design

A multiple-baseline single subject design was employed for this study (Bloom, Fischer, & Orme, 1995). Multiple baseline design is one of the variations of the single subject design. It adopts several baselines established simultaneously prior to the administration of the treatment(s). Specifically, for this study, two baselines were installed. One baseline lasted for three weeks and the other baseline, for four weeks. Therefore, the participants in the first group had three-weeks of baseline and from the fourth week they started therapy. The participants in the second group had four-weeks of the baseline phase and their intervention started from the fifth week. This time lag gives the second group a longer baseline and, thus, enables the investigator to obtain more stable baseline data.

If a desired change in the target observation occurs with both groups only after the intervention begins, then this change pattern becomes the basis for inferring causality. That is, the intervention is the likely cause related to the observed sequential changes in the target problem with both groups. Therefore, there is no need to withdraw the treatment to see the effect once it has been applied and thus this design enables the researcher/practitioner to resolve the ethical problem of withdrawing a beneficial treatment to a participant, which other single-subject-designs require. This is a major advantage of this design (McGuigan, 1990).

The participants were randomly assigned into either of the two baselines. Participants 3, 7, and 8 were assigned to the first group. They had a three-week baseline (A) and from the fourth week, the intervention (B) started. Their intervention lasted for eight weeks. Participants 6 and 9 were assigned to the second group. They had a four-

week baseline (A) and started the intervention (B) from the fifth week. They had seven intervention sessions. All of them had one follow-up session (F-UP) approximately six weeks after the last intervention session. Figure 3 shows the time line of the study.

Week	1	2	3	4	5	6	7	8	9	10	11	F-Up
Participant 3	A-	---	---	B-	---	---	---	---	---	----	----	-------
Participant 7	A-	---	---	B-	---	---	---	---	---	----	----	-------
Participant 8	A-	---	---	B-	---	---	---	---	---	----	----	-------
Participant 6	A-	---	---	---	B-	---	---	---	---	----	----	-------
Participant 9	A-	---	---	---	B-	---	---	---	---	----	----	-------

Figure 3. Timeline of the study.

Intervention

The intervention with Dosa therapy started after the three or four-week baseline phase. The participant and the investigator/therapist met for one hour, once a week. The first half of the session was spent for the scale administration and the discussion of the condition of the participant's anxiety problem during the previous week and the next half of the session was spent on the practice of a Dosa exercise.

A relaxation Dosa exercise of the upper-body (Kukan-hineri) was selected as a Dosa task for all participants. The practice proceeded as follows.

The participant lay on the floor on her side. The therapist slowly moved the participant's upper shoulder backward toward the floor, while blocking the lower shoulder and lower-back so that the participant relaxes the upper-body while rotating it.

The therapist stopped where the participant's movement stopped, in other words, where tension arose and the participant could not relax further. The therapist waited at the point while adding some pressure against the tension. When the participant relaxed that part, the therapist followed her body movement. After relaxation happened a few times, the therapist helped the participant return her body to the starting position. This movement was repeated two times for both sides.

After the relaxation exercise, the participant was asked to stand up and balance her body in an upright position. The participant was asked to put her weight on her right foot, then left foot, then toward toes, then heels, and finally to find a position where she felt most stable. While balancing her body, the participant was asked to pay attention to the sensations in parts of her body in relation to the whole body and the feelings which accompany these slow, subtle body movements.

Instrumentation

Eleven instruments were either created or selected to collect and measure data during the baseline and intervention periods. Each is described below.

Questionnaire for Anxiety Problem and Background Information. The questionnaire regarding the anxiety problem and background information was designed to collect information on the participant's anxiety problem and background information (see Appendix E). This scale was used at the screening interview.

Clinical Anxiety Scale (CAS). The clinical anxiety scale (Hudson, 1992; Westhuis & Thyer, 1989) was selected to measure the participants' anxiety level (see Appendix F). This scale was used to measure the amount, degree, or severity of clinical anxiety reported. The CAS has 25 items and is useful for measuring general anxiety. A coefficient alpha of this scale is .94 and the standard error of measurement (SEM) is 4.2, suggesting a minimal amount of measurement error. The test-retest correlations range from .64 to .74. The CAS discriminates significantly between groups known to be suffering from anxiety and lower anxiety control groups, suggesting having good known-group validity. The CAS has a clinical cutting score of 30, which provides a rough diagnostic indicator. It is advised that a score which falls within plus or minus 5 of the cutting score is treated as an area which indicates possible presence or absence of an anxiety problem.

Behavior Record Form. The behavior record form was created by this investigator to monitor the participants' target behavior which represents their anxiety problem (see Appendix G). This form was used to record the frequency of occurrence or duration of a target behavior based on the discussion of the participants' anxiety problem. The discussion of identifying a target behavior and establishing a recording plan (when and how to record a target behavior) began at the screening session and was finalized at the first session of the baseline phase. This form was recorded weekly.

Experiencing Scale (EXP). The experiencing scale (Klein et al., 1969) was selected to measure the participants' experiencing level (see Appendix H). This scale was

used to measure the participants' level of experiencing. The level of experiencing was categorized into 7 levels. Level One is the lowest level of experiencing in which the subject focuses on external events and describes them in a detached way, thus personal involvement is absent. Level Seven is the highest level of experiencing in which the subject shows awareness of immediately present feelings and internal processes.

The experiencing level is to be judged independently by multiple raters from a five to eight-minute excerpt from the therapy session. Ratings are summarized into two scores: a modal rating which characterizes the overall or average experiencing level of the unit and a peak rating which is a point where the highest level is reached.

Interrater reliabilities, after training with the EXP manual, for undergraduate raters, range from .75 to .97 for modal rating and from .88 to .94 for peak rating, for professional raters, from .88 to .99 for modal rating and from .90 to .93 for peak rating. Interrater reliabilities for the single-subject studies range from .79 to .83 (Klein, Mathieu-Coughlan, & Kiesler, 1986).

For this study, two social work graduate students worked as raters. They went through an eight-week training required in the training manual before rating segments from this study (Klein et al., 1969). A six-minute segment was selected from a tape-recording of the session. The procedure taken to identify the segment for rating will be described in the results section. When the ratings did not agree between the two raters, the two raters had a discussion until an agreement was reached.

Self-Efficacy Scale (SES). The self-efficacy scale was created by this researcher to measure the participants' self-efficacy level (see Appendix I). This scale was used to

measure the strength of the participants' expectancy of effectively handling her anxiety problem or a situation related to the anxiety. The participant was asked to answer how certain she was about handling her issue/anxiety situation effectively on an 11-point scale, 0 = completely uncertain and 10 = completely certain (Bandura, 1977; Bandura, Jeffery, & Gajdos, 1975).

Belief in Personal Control Scale (BPCS). The belief in personal control scale (Berrenberg, 1987) was selected to measure the level of participants' internal control (see Appendix J). This scale was used to measure the participant's perception of her personal control. The BPCS was developed to measure three dimensions of personal control: general external control (F1) assesses the extent to which an individual believes his/her outcomes are self-produced (internality) or produced by fate or powerful others (externality). The exaggerated control dimension (F2) measures an extreme and unrealistic belief in personal control. The God-mediated dimension (F3) measures the belief that God can be enlisted in the achievement of outcomes and distinguishes individuals who believe they have no control over their outcomes from those who believe they control outcomes through God. In this study, only the general external control dimension (F1) was used.

The alphas of the BPCS are .85 (F1), .88 (F2), and .97 (F3), suggesting good internal consistency. Four-week test-retest correlations are .81(F1), .85 (F2), and .93 (F3), suggesting good stability. The BPCS correlates in the expected directions with several other measures including the Internal-External Locus of Control, the Taylor Manifest

Anxiety Scale, the Feelings of Inadequacy Scale, and the Mania and Depression Scales, suggesting excellent construct validity (Fisher & Corcoran, 1994).

Therapy Session Record Form. The therapy session record form was created to record interaction between the therapist and the participant during the Dosa practice (see Appendix K). Information on three dimensions was recorded sequentially on this form: (1) the therapist's procedure and observation regarding the participant's Dosa task performance, (2) the participant's kinesthetic/sensorimotor sensations, and (3) the participant's thoughts and feelings during the Dosa task performance. The investigator filled in a form after each therapy session based on a videotape recording.

Specifically, the therapist's procedure was described on the following points: in which direction the therapist moved the participant's body, with how much strength, feedback on the participant's performance, questions regarding the participant's response. The participant's Dosa task performance was described by the therapist with regard to the following points: the range of relaxation, the location of the tension, duration of the tension, accompanying movements in that body part and/or other body parts and facial expression. The range of relaxation refers to how much the shoulder moves following relaxation. The location of the tension refers to where the participant's shoulder stops due to the tension. In order to describe the range of relaxation and location of the tension, the possible range of the movement was divided into 4 points. In this case, the angle which a shoulder line and the floor make ranges from 0 to 90 degrees. The starting point where the shoulder line and the floor make 90 degrees is Point 1. Where the upper shoulder touches the floor and the angle between a shoulder line and the floor is 0 degree is Point

4. The point where a shoulder line and the floor make 60 degrees is Point 2. And the point where a shoulder line and the floor make 30 degrees is Point 3. A mid-point was used, such as, 1.5, 2.5, or 3.5, to describe an approximate position between two points. Duration of tension refers to how long the movement stops due to the tension, in other words, how long it takes to relax that tension. This information was measured in seconds.

The participant's kinesthetic sensation was recorded regarding what sensations she noticed, on which body parts, and at what point in relation to the Dosa performance. The participant's thoughts and feelings included what she thought and how she felt during the Dosa performance.

Questionnaire for Somatic Awareness (QSA). The questionnaire for somatic awareness was designed to monitor the participants' somatic awareness during the Dosa exercise (see Appendix L). This questionnaire was used to measure the participants' quantity and quality of somatic awareness during the Dosa exercise based on the measurement used in a study on sensory awareness during an aerobic exercise (Cioffi, 1991). The participants were asked to list the sensations they noticed during the Dosa practice. On each reported sensation, the participants were asked to rate the noticeability on a 10-point scale which ranges from 1 = barely, 5 = moderately, to 10 = extremely, and its hedonic valence on a 40-point scale which ranges from –20 = extremely unpleasant, 0 = neither unpleasant or pleasant, to +20 = extremely pleasant.

Questionnaire for Relaxation Strategies (QRS). The questionnaire for relaxation strategies was designed to monitor the participants' experiences regarding relaxation (see

Appendix M). This questionnaire was used to collect information regarding the participants' strategies for relaxation and was administered after the Dosa practice.

Session Evaluation Questionnaire (SEQ). The session evaluation questionnaire (Stiles, 1980; Stiles & Snow, 1984; Stiles, Shapiro, & Firth-Cozens, 1990) was selected to measure the participants' evaluation of each therapy session (see Appendix N). This scale was used to measure dimensions of the impact of the therapy sessions based on previous studies (Stiles, 1980; Stiles & Snow, 1984; Stiles, Shapiro, & Firth-Cozens, 1990). This scale consists of 16 bipolar adjective scales in a semantic differential format. The participants were asked to answer on a 7-point scale regarding the session itself and their own feelings immediately following the session. The first part of the questionnaire addresses the participants' session evaluation and measures two independent dimensions: Depth and Smoothness. The mean rating on those scales such as worthless-valuable, shallow-deep, empty-full, and ordinary-special yields the Depth index. The Smoothness index is the mean rating on difficult-easy, unpleasant-pleasant, rough-smooth, and dangerous-safe. The second part of the questionnaire focuses on the participants' post-session mood and measures Positivity and Arousal dimensions. The Positivity index is the mean rating on sad-happy, afraid-confident, uncertain-definite, and angry-pleased. The Arousal index is the mean rating on quiet-aroused, slow-fast, still-active, and calm-excited. Higher scores indicate greater magnitude of impact for each dimension.

Questionnaire for Therapy Experience (QTE). The questionnaire for therapy experience was designed by this researcher to see the participants' overall experiences of

Dosa therapy (see Appendix O). This questionnaire was used to obtain the participants' overall evaluation of this therapy. It contained open-ended questions regarding the participants' experience of Dosa therapy. The questions included changes experienced, points/aspects for which Dosa therapy and/or the therapist facilitated the participant's change, the participant's satisfaction with the results of therapy, and remaining problems and/or new ones (Strupp, Wallach, & Wogan, 1964). The questionnaire also included the question regarding the level of disturbance of the problem/issue at the end of the therapy. This questionnaire was administered at the last therapy session.

Procedures

At the first session of the baseline phase, the investigator explained the structure and the timeline of the therapy to the participants and written consent was obtained when they assured their commitment for this clinical study (see Appendices C and D). During the baseline phase, the participant and the investigator met for a half hour at each session. The participants were asked to answer the CAS, SES, and BPCS, and then the participant and the investigator talked about the condition of their issue/problem during the previous week based on the recording on the behavior record form. The interview was audiotape-recorded with the participant's permission, for the rating of the participant's experiencing level.

During the intervention phase, the participant and the investigator met for one hour. The first half of the session was spent as in the baseline phase, the scale administration and the discussion about the status of the participant's anxiety problem/issue. The second half of the session was spent on the Dosa exercise. The

practice of the Dosa task was videotaped, again with consent of the participant. This was later viewed by the investigator/therapist and used to record the participant's Dosa performance on the therapy session record form. After the Dosa practice, the participants answered the Session Evaluation Questionnaire (SEQ) and the Questionnaire of Relaxation Strategies (QRS) and were then asked about their somatic awareness by using the Questionnaire for Somatic Awareness (QSA). At the end of the last intervention session, the questionnaire about the therapy experience (QTE) was administered. The participants were asked to keep a record of the target behavior on the behavior record form for one additional week after the final session, then, to complete the clinical anxiety scale, the self-efficacy scale, and the belief in personal control scale, and to mail them to the investigator.

Approximately two weeks before the scheduled follow-up session, the behavior record form was mailed to the participants with a letter to remind them of the follow-up meeting. The participants were asked to start recording their target behavior a week prior to the follow-up session and bring it to the session.

The follow-up session (F-UP) was held approximately six weeks after the last therapy session. The follow-up session was conducted with the same structure as the interview conducted during the baseline phase. The participant and the investigator met for a half hour. The participant answered questionnaires including the clinical anxiety scale, the self-efficacy scale, and the belief of personal control scale. An interview regarding the status of the participant's anxiety problem was conducted based on the recording on the target behavior. Table 2 shows when the instruments were administered to collect the information.

Instruments	Baseline	Intervention		Follow-up
	Every	Every	Last	
Clinical anxiety scale	X	X		X
Self-efficacy scale	X	X		X
Belief in personal control scale	X	X		X
Experiencing scale	X	X		X
Behavior Record	X	X		X
Therapy Record		X		
Session evaluation questionnaire		X		
Questionnaire for somatic awareness		X		
Questionnaire for relaxation strategy		X		
Questionnaire for therapy experiences			X	

Figure 4. Schedule of instrument administration.

CHAPTER 4

RESULTS

Preliminary Analyses

Before proceeding with the analyses to examine the effect and therapeutic process of Dosa therapy, the following preliminary analyses were conducted.

Reliability of the Measurements

The reliability coefficients (alpha) of the anxiety scale (CAS) and the locus of control scale (PBCS) for this study were computed. The coefficient alpha for the CAS was .87. The previous study reported a coefficient alpha of .94 (Westhuis & Thyer, 1989). Therefore, the value of this study was slightly lower than the one in the previous study, but still quite high. The coefficient alpha for the PBCS in this study was.89. In the previous study, a coefficient alpha was reported as .85 (Fisher & Corcoran, 1994). Therefore, the value of this study was slightly higher than the one reported in the previous study.

Since two individuals worked as raters for the experiencing scale (EXP), the inter-rater reliability coefficient was computed. Following the training manual, Ebel's intraclass method was used to compute an estimate of the reliability of the means of the judge's ratings (r_{kk}) (Guilford, 1954). The inter-rater reliability of this study was .97 and .83 for the modal and peak ratings, respectively. The inter-rater reliabilities which were

reported previously from the single-subject studies ranged from .79 to .83. Therefore, the inter-rater reliabilities of this study are at least comparable to those values.

Segment Identification for EXP

For the experiencing rating, it was decided to select a six-minute segment from each interview following the training manual protocol (Klein, et al., 1969). In order to select the location of a segment for the rating, a pilot study was conducted. Three participants were selected randomly from all participants. From each participant, two interviews were selected. In total, six interviews were selected for this pilot study. A thirty-minute interview was divided into three segments; a first ten-minute, a second ten-minute, and a last ten-minute. The client's experiencing level for each segment was rated by using a running rating method, in which the rater rates each client's speech in turn (M. Klein, personal communication, February 10, 2000). Then the ratings were summarized into a modal and peak rating of each segment and compared between three segments. For the modal ratings, the means for the first, second, and third segment were 2.00, 1.83, and 2.16, respectively. The difference between the segments was not significant, $F(2, 5) = 1.00$, $p > .05$, and the level of association was small ($\eta^2 = .17$). For the peak ratings, the means for the first, second, and third segment were 3.00, 3.17, and 3.33, respectively. Once again, the difference between the segments was not significant, $F(2, 5) = .57$, $p > .05$, and the level of association was small ($\eta^2 = .22$).

These results indicated that there was no difference in the level of experiencing between the first, second and third part of the interview. Since the interview usually started with talking about the concrete incidents during the previous week and proceeded

to the discussion about the feelings and thoughts relating to the incidents, it was decided that a six-minute segment would be selected from the last third segment. Specifically, the portion from the 22nd to 28th minute was selected proportionally from each interview for the experiencing rating.

Test of Autocorrelation

Autocorrelation is a type of correlation which indicates the degree of serial dependency between the adjacent observations within a series of observations made over time. A lag 1 autocorrelation indicates the extent to which the values of a variable are dependent on the immediately preceding ones. One of the assumptions underlying many statistical tests as applied to the analysis of single subject designs is the assumption that the observations are independent. When the observations are dependent, it violates the assumption of independence between observations and this can result in Type I or Type II errors (Bloom, Fisher, & Orme, 1995). In single subject design, the observations are made continuously over time and the data from a study using single subject design are especially susceptible to autocorrelation. For this reason, a lag 1 autocorrelation on each measure was computed to see the level of correlation between the values and the immediately preceding ones. Tables 2 and 3 show a lag 1 autocorrelation on each measure during the baseline and intervention phase, respectively.

As shown in Table 2, none of the autocorrelations of the baseline phase were significant. The autocorrelations during the intervention phase for the behavior observation of participant 6, the locus of control of participant 7, and the self-efficacy of participant 8 were statistically significant (see Table 3). These data were transformed

using the first difference transformation, which is one of the data transformation methods to correct for autocorrelation. The autocorrelations with the transformed data were computed (Bloom, Fisher, & Orme, 1995). They were -.16 for the behavior observation of participant 6, -.29 for the PBCS of participant 7, and -.19 for the SES of participant 8. Lag 1 autocorrelations for those transformed data were not significant. Therefore, when the statistical analysis which assumes the independence of the observation was conducted, the transformed data were used.

Table 2
Lag 1 Autocorrelations of the Baseline phase on the Anxiety Scale (CAS), the Self-Efficacy Scale (SES), the Locus of Control Scale (PBCS), the Experiencing Scale (EXP), and the Behavior Observation

Participants	CAS	SES	PBCS	EXP Mode	EXP Peak	BEHAVIOR
Participant 3	-.25	-.66	.25	--	--	-.09
Participant 6	.29	.37	-.07	-.30	-.47	-.02
Participant 7	.24	-.27	-.23	--	--	.00
Participant 8	.20	-.35	-.53	--	.25	-.64
Participant 9	-.17	-.42	-.30	--	-.42	-.60

Table 3
Lag 1 Autocorrelations of the Intervention Phase on the Anxiety Scale (CAS), the Self-Efficacy Scale (SES), the Locus of Control Scale (PBCS), the Experiencing Scale (EXP), and the Behavior Observation

Participants	CAS	SES	PBCS	EXP Mode	EXP Peak	BEHAVIOR
Participant 3	.36	-.02	-.43	--	-.46	.60
Participant 6	.29	.50	.31	-.27	-.27	.61*
Participant 7	-.14	-.09	.59*	-.12	-.02	-.16
Participant 8	.00	.59*	-.07	-.50	-.40	.00
Participant 9	-.02	.04	.11	-.27	-.45	-.27

* $p<.05$

Therapeutic Effect on Variables

The analyses to examine the effect of the intervention with Dosa therapy was conducted by comparing the baseline and intervention phase on each variable measured by the scales. Participant 9 could not find time on the week when the other participants had their first baseline interview and started her participation from the second week. Therefore, her baseline observations were short one observation point from the other participants in the second group. Participant 3 failed to return the scales and the behavior recording after the last intervention. Therefore, the observation points of the intervention phase for Participant 3 were seven, rather than eight. The results will be described on each variable cross-sectionally in this section. In the following section, they will be reviewed on each participant individually in relation to the hypotheses.

Anxiety

The analysis to examine the effect of the intervention was conducted as a group first and then for each individual. The group means of the anxiety score for the baseline and intervention periods were 16.76 and 9.26, respectively. The difference in the anxiety score between the two periods was significant, t (4) = 4.22, $p < .05$. An analysis of variance for repeated measures was also conducted to examine the difference between the baseline and intervention phase. The contrasts were computed to examine the difference between the baseline and one or some combination of the intervention observations. The results are shown in Table 4. Again, the difference in the anxiety score between the baseline and intervention was significant, F (1, 15.8) = 4.71, $p < .05$. These results indicate that the participants' anxiety scores decreased significantly during the

intervention phase. Thus, these results are supportive for the second hypothesis about the effect of the intervention with Dosa therapy on the participants' affective level of functioning. As seen in Table 4, the difference between the average anxiety score of baseline period and the anxiety score of a single intervention session became significant from the seventh week. This result indicates that the change was revealed from the third week after the intervention started, although a smaller effect is seen at weeks 9 ($p = .06$) and 11 ($p = .14$).

Table 4
Contrasts of Anxiety Score between the Baseline and Intervention Phase

Weeks	Num DF	Den DF	F value	Pr>F
Baseline vs 5th week	1	42.4	0.03	0.87
Baseline vs 6th week	1	36.5	2.51	0.12
Baseline vs 7th week	1	30.0	5.16	0.03
Baseline vs 8th week	1	24.0	4.42	0.05
Baseline vs 9th week	1	21.9	4.10	0.06
Baseline vs 10th week	1	18.7	4.64	0.04
Baseline vs 11th week	1	17.0	2.37	0.14
Baseline vs 5-8th weeks	1	23.6	3.34	0.08
Baseline vs 6-9th weeks	1	19.4	5.44	0.03
Baseline vs 7-10th weeks	1	16.2	6.03	0.02
Baseline vs 8-11th weeks	1	13.9	4.96	0.04
Baseline vs Intervention	1	15.8	4.71	0.05

Table 5 shows the mean anxiety scores of the participants in the baseline and intervention phases, the effect size which indicates the magnitude of the difference between the two periods, and the results of the t-tests. The average anxiety scores decreased for all participants. The effect size ranges from –1.13 to –1.79. This difference

indicates that the participant's anxiety score decreased approximately 40% (ranging from 37.1 % to 46%) during the intervention phase compared to the average score in the baseline phase. Although the change in the anxiety score reached a statistical significance level only for Participant 7, t (10) = 2.34, $p < .05$, the change for other participants was fairly large, shown by the effect size.

Table 5
Mean Anxiety Scores in the Baseline and Intervention Phases, Effect Size, and T values

Participant	Baseline	Intervention	Effect Size	T value
Participant 3				
M	11.88	1.71	-1.79 (-46%)	2.02
SD	10.00	1.25		
Participant 6				
M	17.40	10.14	-1.26 (-39.6%)	2.15
SD	2.30	7.20		
Participant 7				
M	26.50	14.25	-1.43 (-42%)	2.34*
SD	5.20	9.65		
Participant 8				
M	8.00	6.00	-1.15 (-37.5%)	1.89
SD	1.82	1.69		
Participant 9				
M	20.00	14.21	-1.13 (-37.1%)	1.80
SD	2.83	5.96		

*$p < .05$.

The anxiety scores of each session for the participants were plotted in a chart (see Figures 5 and 6). The intervention started from the fourth week for Group 1 (Participants 3, 7, and 8). The anxiety score of Participant 3 started to decrease the last week of the observation period and maintained that level or lower during the intervention period (see

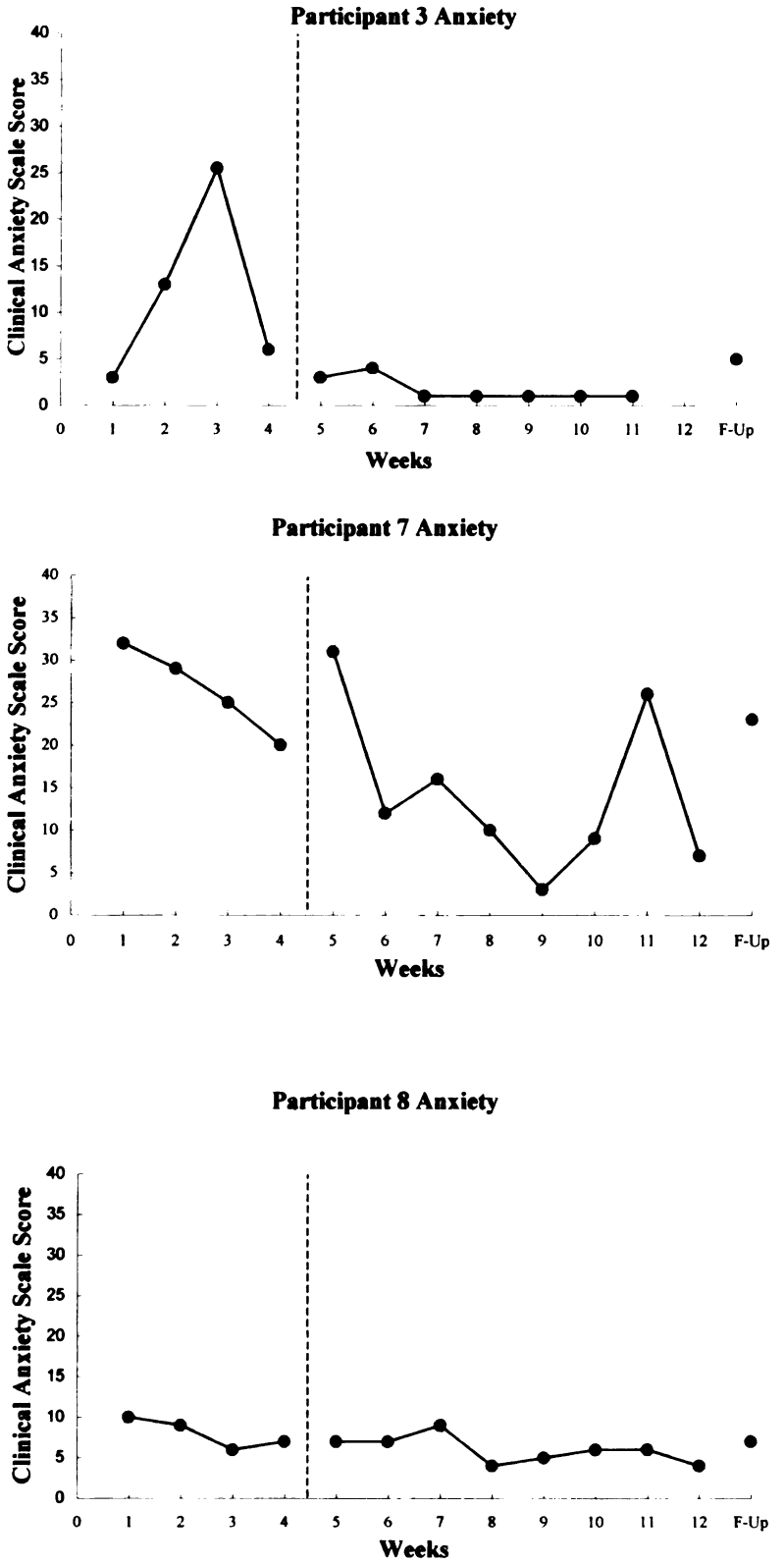


Figure 5. Anxiety Scores for Group 1 (Participants 3, 7, 8)

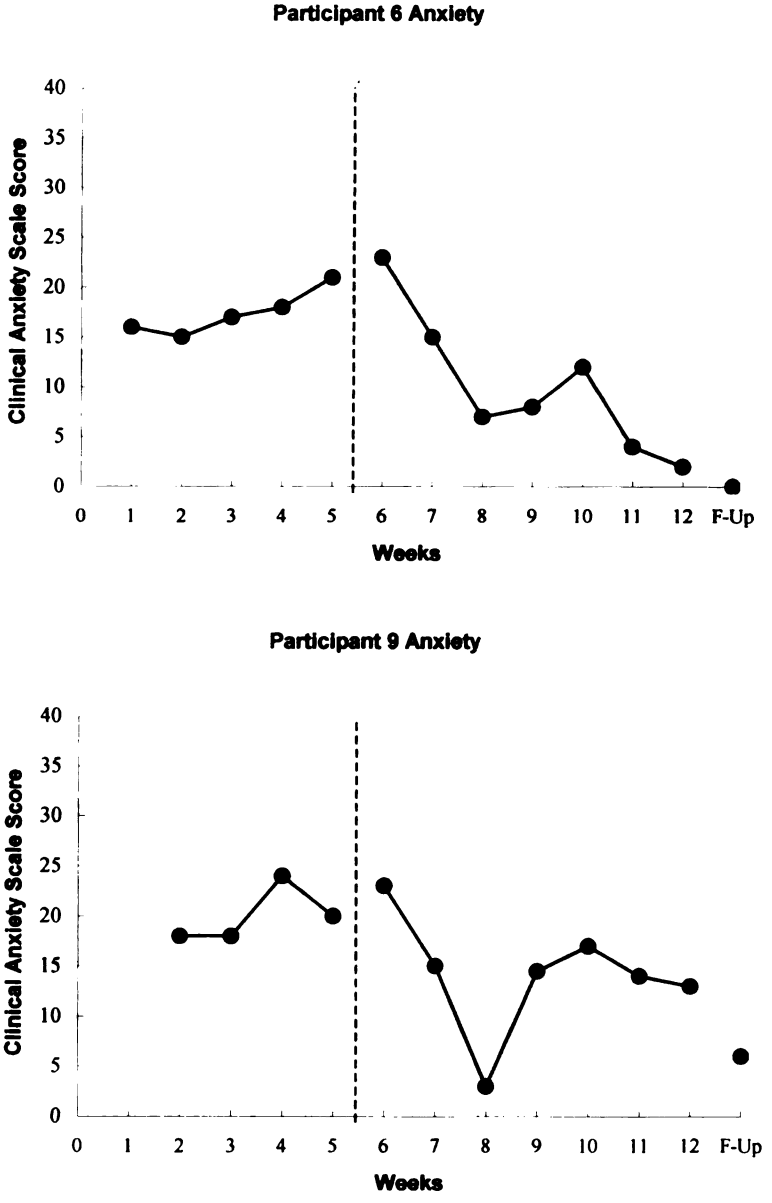


Figure 6. Anxiety Scores for Group 2 (Participants 6, 9)

Figure 5). The anxiety scores of Participant 7 were decreasing during the observation period. When the intervention started, the score increased once and started to decrease from the following week. Her anxiety score increased on the eleventh week, which coincided with the final exam week (see Figure 5). The anxiety score of Participant 8 started to decrease three weeks following the beginning of intervention (see Figure 5). Therefore, for this group, the causal effect of Dosa therapy on the participants' anxiety level was clear for Participant 8. The causal effect of the intervention on the anxiety level was somewhat ambiguous for Participants 3 and 7.

For Group 2 (Participants 6 and 9), the intervention started from the fifth week. As seen in Figure 6, the anxiety scores of Participant 6 and 9 were high during the baseline period and they maintained that level while the intervention started with the former group; there was a trend of increasing anxiety level for both of them. More importantly with regard to the purpose of multiple baseline design, their anxiety level maintained that level and was not affected when the intervention started with Group 1. Their anxiety scores started to decrease one week after the beginning of intervention. Therefore, the causal effect of the intervention on the participants' anxiety level was clear for this group. In total, three participants' anxiety score started to decrease after the intervention started. This result, although not very strong, indicates the intervention with Dosa therapy influenced the participant's anxiety level.

Behavior

Table 6 shows the means of the target behavior during the baseline and intervention phases for the participants. The target behavior of each session for the

participants was plotted in a chart (see Figures 7 and 8). Since the target behavior of each participant was different and the unit of each behavior was not comparable, a group analysis was not conducted.

Table 6
Means of Target Behaviors in the Baseline and Intervention Phases

Participant (Target Behavior)		Baseline	Intervention
Participant 3	M	4.67	14.86
(study hours)	SD	5.11	6.92
Participant 6	M	5.13	2.90
(difficulty of falling asleep)	SD	1.07	1.04
Participant 7	M	7.17	5.86[a]
(study hours)	SD	4.07	2.59
Participant 8	M	9.37	9.68
(assuredness of her feelings)	SD	.47	.45
Participant 9	M	5.33	.43
(acting-out behavior)	SD	3.06	.54

Note. [a]The mean was computed without the last observation.

The issue Participant 3 addressed was her anxiety and overwhelming feeling caused by schoolwork. She counted her study hours to see if her anxiety would decrease and allow her to focus on her studies. As shown in table 6, her study hours increased during the intervention period compared to the period of the baseline. As seen in Figure 7, her study time decreased during the baseline period. After the beginning of intervention, her study time started to increase and steadily increased after a decrease on the second week. A regression line was computed to examine the trend during the intervention period. A standardized slope (β) was .74. It did not reach a statistical

significance level, F (1, 5) = 6.10, p =.057. However, the change was in the expected direction. This indicates that her study hours appeared to have increased during the intervention period.

Participant 7 monitored her study hours to see the change in her anxiety aroused by procrastinating schoolwork. As shown in Table 6, the average study hours during the intervention period decreased compared to the one during the baseline period. However, the difference in study hours between the two periods was not significant, t (8) = .626, p = .55. Figure 7 shows the study hours during the baseline and intervention phases. Her study hours during the baseline decreased. Once the intervention started, her study hours started to increase until the second session before the last. She did not study at all after the last session. The last session was held after the final exam week, therefore, this environmental factor can explain the fact that she did not study at all after the last session. A regression line was computed to examine the trend during the intervention period, excluding the last observation. The standardized slope (β) was .88 and was significant, F (1, 5) = 16.75, p <.01. This result indicates that during the intervention period her study hours increased significantly.

Participant 8 monitored the assuredness of her feelings toward her boyfriend. This behavior was rated on an 11-point scale, 0 meaning not sure at all and 10, very sure/almost certain. As shown in Table 6, the average of the rating increased during the intervention period. Figure 3 shows the ratings during the baseline and intervention periods. The ratings during the baseline period fluctuated and were not stable. After the beginning of intervention, the ratings became higher and stable, except for a drop on the 7th week. Seven observations out of eight in the intervention period fell above the average

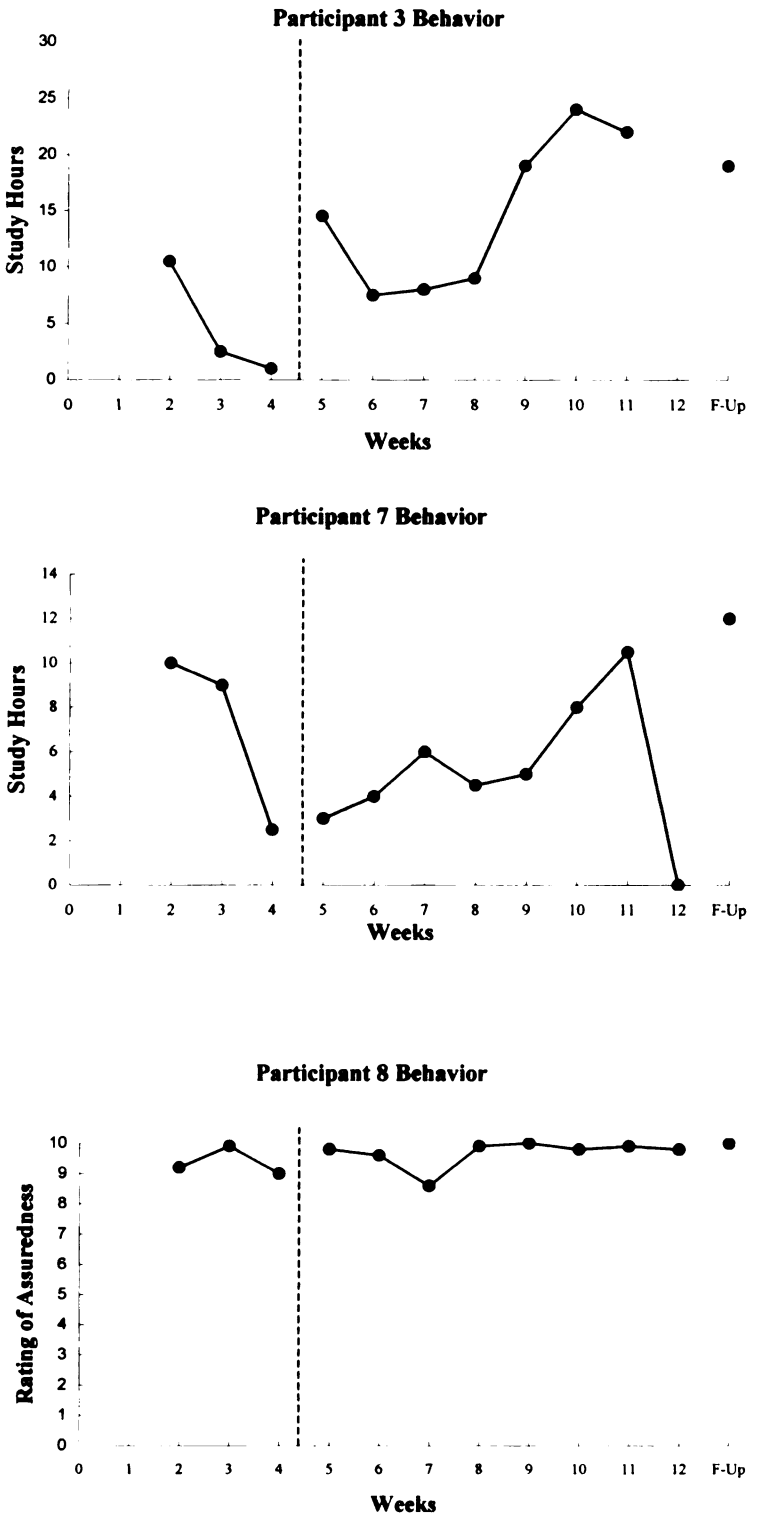
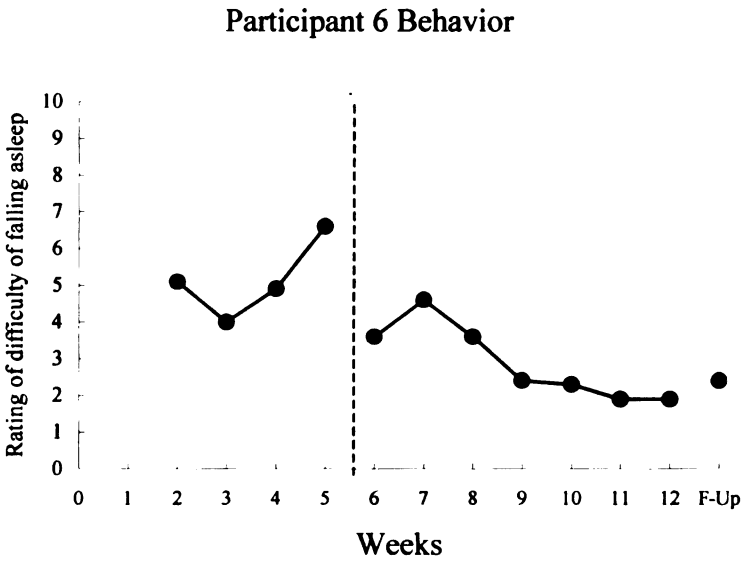


Figure 7. Target Behaviors for Group 1 (Participants 3, 7, 8)



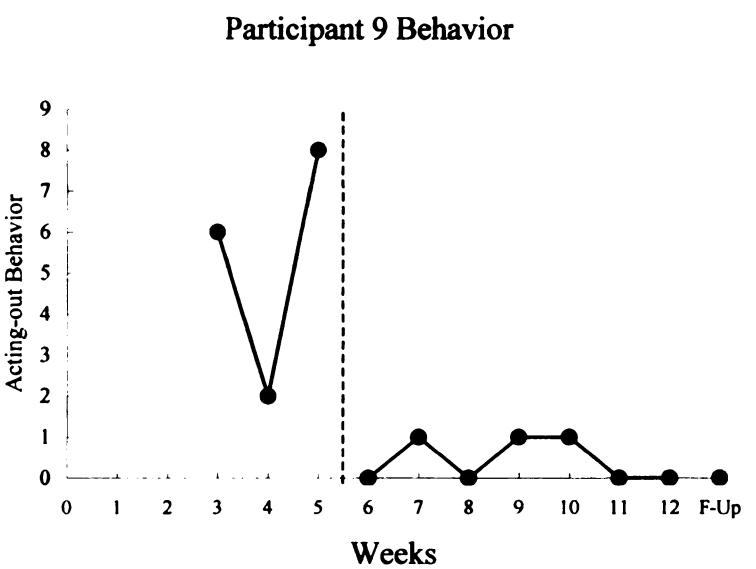


Figure 8. Target Behaviors for Group 2 (Participants 6, 9)

of the baseline period. Therefore, the data achieved statistical significance based on a binomial test (York, 1998). This result indicates that she became significantly more sure of her feelings during the intervention period. Actually, she made a decision during the 7th week and got engaged to her boyfriend.

Participant 6 focused on the difficulty of falling asleep at night as a behavior to monitor the change in her anxiety level. Because she felt that she did not fit in and got frustrated, those feelings accumulated during the day and interfered with her sleep at night. She rated the difficulty of falling asleep on a scale from 0 to 10, 0 meaning not difficult at all and 10, very difficult. As shown in Table 6, the average rating during the intervention period became lower than during the baseline period. Figure 8 shows the ratings of the baseline and intervention periods. The rating started to decrease after the beginning of intervention almost steadily. A regression line was computed to examine the trend during the intervention period. The standardized slope (β) was -.88 and was significant, F (1, 5) = 16.50, p <.01. This result indicates that it became significantly less difficult for Participant 6 to fall asleep during the intervention period.

Participant 9 focused on her acting-out behaviors as a target behavior to monitor her anxiety level, because she noticed that she tended to ventilate her anxiety by acting in a somewhat aggressive way. As shown in Table 6, the number of acting-out behaviors decreased during the intervention period. Figure 8 shows the acting-out behaviors during the baseline and intervention periods. The number of acting-out behaviors fluctuated during the baseline period. After the beginning of intervention, the number of acting-out behaviors decreased and stayed on the lower level. All observations during the intervention period fell below the average of the baseline period. Therefore, the

difference in acting-out behaviors between the baseline and intervention periods achieved statistical significance based on a binomial test (York, 1998). This result indicates that Participant 9 acted out her anxiety less during the intervention period.

As Participants 3, 7, and 8 were assigned to Group 1, their intervention started from the fourth week. The study hours for Participants 3 and 7 decreased during the baseline and started to increase from the following week after the intervention began (see Figure 7). As for Participant 8, the ratings of her feeling fluctuated during the baseline just as she described in the beginning and started to become more stable and higher from the four weeks after the intervention started. As for Participants 6 and 9, whose intervention started from one week after Group 1, their behaviors also started to change after the intervention began (see Figure 8). Therefore, these results clearly indicate that the intervention with Dosa therapy influenced the change in the participants' behavior. Thus, the results support the hypothesis about the effect of the intervention on the participants' behavioral level of functioning.

Experiencing

The participants' experiencing level was measured on the experiencing scale (EXP). It was also monitored as the participants' somatic sensations during the Dosa exercise in terms of the number, its noticeability and hedonic valence. The results on these measures will be examined separately.

Experiencing Level. The difference in the EXP scores between the baseline and intervention periods were examined as a group first, followed by individual analyses. As for the modal experiencing score, the group means of the baseline and intervention

periods were 2.04 and 2.80, respectively. The difference in the modal experiencing between two periods was significant, t (4) = -3.26, p <.05; F (1, 19.7) = 6.76, p <.05. The contrasts of analysis of variance for repeated measures are shown in Table 7. The results indicate that the modal experiencing score became significantly higher during the intervention period than the baseline period. Thus this result was supportive for the first hypothesis about the effect of the intervention on the participants' experiencing level.

Table 7
Contrasts of Modal Experiencing Level between the Baseline and Intervention Phase

Weeks	Num DF	Den DF	F value	Pr > F
Baseline vs 5th week	1	39.2	2.14	.15
Baseline vs 6th week	1	38.8	2.95	.09
Baseline vs 7th week	1	39.3	7.10	.01
Baseline vs 8th week	1	39.2	0.01	.92
Baseline vs 9th week	1	39.2	2.19	.14
Baseline vs 10th week	1	39.2	2.19	.14
Baseline vs 5-8th weeks	1	21.4	5.50	.02
Baseline vs 6-9th weeks	1	17.4	5.58	.03
Baseline vs 7-10th weeks	1	17.8	5.12	.03
Baseline vs Intervention	1	19.7	6.76	.02

Table 8 shows the mean modal experiencing scores of each participant during the baseline and intervention phase. The modal experiencing level increased during the intervention phase for all participants except for Participant 3, whose level did not change. The difference in the modal experiencing level for Participant 8 was statistically significant, t (6) = -2.65, p <.05.

Table 8
Means of Modal Experiencing Level in the Baseline and Intervention Phases and T values

Participant	Baseline	Intervention	T value
Participant 3			
M	2.00	2.00	--
SD	.00	.00	
Participant 6			
M	2.20	3.60	-1.40
SD	.45	2.19	
Participant 7			
M	2.00	2.57	-1.33
SD	.00	1.13	
Participant 8			
M	2.00	3.00	-2.65*
SD	.00	1.00	
Participant 9			
M	2.00	2.83	-1.40
SD	.00	1.17	

*p <.05

As for the peak experiencing level, the group means of the baseline and intervention phases were 3.23 and 4.27, respectively. The difference in the level between the two phases was statistically significant, t (5) = -4.69, p <.01; F (1, 15.2) = 11.29, p <.01. Table 9 shows the contrasts of analysis of variance for repeated measures. These results indicate that the peak experiencing level significantly increased during the intervention period compared to the baseline period. Thus, again, the results are supportive for the first hypothesis about the effect of the intervention on the participants' experiencing level.

Table 9
Contrasts of Peak Experiencing Level between the Baseline and Intervention Phase

Weeks	Num DF	Den DF	F value	Pr > F
Baseline vs 5th week	1	38.7	3.72	.06
Baseline vs 6th week	1	32.8	5.61	.02
Baseline vs 7th week	1	28.3	13.12	.001
Baseline vs 8th week	1	26.1	0.12	.73
Baseline vs 9th week	1	25.0	12.83	.001
Baseline vs 10th week	1	24.5	4.81	.03
Baseline vs 5-8th weeks	1	18.2	7.56	.01
Baseline vs 6-9th weeks	1	15.2	10.52	.01
Baseline vs 7-10th weeks	1	13.7	10.02	.01
Baseline vs Intervention	1	15.2	11.29	.004

Table 10 shows the means of peak experiencing level for the participants. The peak experiencing level of all participants increased during the intervention period. The peak experience level of Participants 6 and 7 reached statistical significance, t (5.89) = -3.29, p <.05 and t (9) = -5.91, p<.000, respectively. The peak experiencing level of Participants 8 and 9 was not statistically significant, t (9) = -2.05, p = .07 and t (8) = -1.70, p = .12, respectively. However, the change was in the expected direction. These results suggest that the peak experiencing level increased for almost all participants. Theoretically and clinically, the transition from level 3 to 4 on the scale is one of the key events. This transition indicates that the ability to refer inwardly and acknowledge that experience, emerged in the client (Mathieu-Coughlan & Klein, 1984). Therefore, the change in the peak experiencing level of these participants has clinical significance.

Table 10
Means of Peak Experiencing Level in the Baseline and Intervention Phases and T values

Participant	Baseline	Intervention	T value
Participant 3			
M	3.00	3.43	-1.16
SD	.00	.98	
Participant 6			
M	3.40	5.20	-3.29*
SD	.55	1.10	
Participant 7			
M	3.00	4.14	-5.91***
SD	.00	.38	
Participant 8			
M	3.50	4.43	-2.05
SD	.58	.79	
Participant 9			
M	3.25	4.17	-1.70
SD	.50	.98	

*p <.05. ***p <.01.

Somatic Awareness. Somatic awareness during the Dosa exercise was monitored on the questionnaire for somatic awareness (QSA) in three dimensions; the number of somatic sensations reported, its noticeability, and the hedonic valence. To examine the change in these dimensions over the process of therapy, the average of the first two sessions and the last two sessions were computed as the score of the early period and the late period. Table 11 shows the number of somatic sensations reported and its noticeability and the hedonic valence for the participants.

As for the direction of the change in each dimension, the investigator did not clearly state it in the hypothesis section. However, it was assumed that the number of somatic sensations reported during the Dosa practice, its noticeability and the hedonic valence would increase as the Dosa practice progresses.

Table 11
Means of Number of Somatic Sensations, its Noticeability and Hedonic Valence

Participant	Number of Sensations	Noticeability	Hedonic Valence
Participant 3			
Early	3.0	7.35	2.65
Late	3.0	4.65	-4.65
Participant 6			
Early	3.5	8.36	-13.00
Late	2.0	8.50	20.00
Participant 7			
Early	3.0	7.50	-4.15
Late	2.5	8.75	-7.10
Participant 8			
Early	4.5	8.05	-2.6
Late	4.5	4.18	-1.13
Participant 9			
Early	3.5	9.05	14.00
Late	2.0	10.00	10.00

The group means of the number of sensations reported during the Dosa exercise in the early and the late intervention periods were 3.5 and 2.8, respectively. However, the difference was not statistically significant, t (4) = 2.06, p = .11. This suggests that the participants tended to report less somatic sensations at the late period than the early period of intervention. As shown in Table 11, Participants 6, 7, and 9 reported less somatic sensations during the late period of intervention, however, the difference was small. Therefore, the result revealed an opposite direction to the investigator's assumption.

The noticeability of somatic sensations was measured on a 10-point scale; 1 meaning barely noticeable, 10, extremely noticeable. The group means of the early and the late periods were 8.07 and 7.21, respectively. The difference between the two periods

was not statistically significant, t (4) = .83, p >.05. As shown in Table 11, the noticeability of the somatic sensation became higher for Participants 6, 7, and 9, in the late period of intervention than the early period, whereas it became lower for Participants 3 and 8. Therefore, there is no trend which is common for all participants. The investigator's assumption on the noticeability of somatic sensations was not supported.

The hedonic valence of somatic sensation was measured on a 40-point scale, -20 meaning extremely unpleasant, +20, extremely pleasant. The group means of the hedonic valence for the early and late intervention periods were -.62 and 3.43, respectively. The difference between the two periods was not significant, t (4) = -.55, p >.05. As shown in Table 11, each participant showed an idiosyncratic change regarding the hedonic valence of the somatic sensation. Participant 3 experienced the somatic sensation as more pleasant at the early period and more unpleasant in the late period. For Participant 6, the somatic sensation was unpleasant in the early period and became more pleasant around the end of the intervention. For Participant 7, the somatic sensation was unpleasant and it became more unpleasant toward the end of the intervention. For Participant 8, the somatic sensation was unpleasant and it became less unpleasant toward to end of the intervention. Participant 9 experienced the somatic sensation as pleasant throughout the intervention, although, it became slightly less pleasant toward the end of the intervention. Therefore, again, there was no common trend among the participants. The results did not support the investigator's assumption on this dimension. These results regarding somatic awareness will be further discussed in the following chapter.

In sum, the effect of the intervention with Dosa therapy on the participants' experiencing was not observed on the somatic awareness dimensions. Thus, these results

do not support the first hypothesis about the effect of the intervention on the participants' experiencing.

Self-Efficacy

Self-efficacy was measured on the self-efficacy scale. The group means of the self-efficacy score in the baseline and intervention phase were 6.70 and 8.14, respectively. The difference in the self-efficacy score between the two periods was significant, t (4) = -4.18, p <.01; F (1, 15.3) = 8.18, p <.01. This result indicates that the participants' self-efficacy increased significantly during the intervention phase. Thus, this result is supportive for the second hypothesis about the effect of the intervention on the participants' cognitive level. The contrasts of analysis of variance for repeated measures are shown in Table 12. The contrast between the average score of the baseline period and a single intervention session became significant from the seventh week. This result suggests that the difference in self-efficacy started to emerge from the third intervention session.

Table 13 shows the participants' mean self-efficacy score, the effect size and the T values. The self-efficacy scores of all participants increased during the intervention period from the baseline period. The effect size, which indicates the magnitude of change, ranged from .40 to 3.32. This suggests there was an increase in the self-efficacy score in the intervention period, ranging from 15.5% to greater than 100%, over the average score in the baseline period. The difference in the self-efficacy score reached statistical significance for Participants 6 and 9, t (10) = -5.68, p = .000 and t (9) = -2.79, p = .02, respectively. The difference in the self-efficacy score for Participant 3 was not

significant, however, the effect size was fairly large. The difference in the self-efficacy score was not significant and the effect size was small for Participant 8 when the transformed data was used due to the autocorrelation. However, the difference in the actual score was comparable to the one for Participant 6.

Table 12
Contrasts of Self-Efficacy Score between the Baseline and Intervention Phases

Weeks	Num DF	Den DF	F value	Pr > F
Baseline vs 5th week	1	41.9	0.69	.4
Baseline vs 6th week	1	35.3	2.86	.10
Baseline vs 7th week	1	29.3	4.90	.03
Baseline vs 8th week	1	25.3	6.04	.02
Baseline vs 9th week	1	22.9	5.91	.02
Baseline vs 10th week	1	21.5	7.32	.01
Baseline vs 11th week	1	20.6	4.50	.04
Baseline vs 5-8th weeks	1	20.9	5.31	.03
Baseline vs 6-9th weeks	1	17.3	7.33	.01
Baseline vs 7-10th weeks	1	14.9	8.89	.01
Baseline vs 8-11th weeks	1	13.4	8.62	.01
Baseline vs Intervention	1	15.3	8.18	.01

Table 13
Mean Self-Efficacy Scores in the Baseline and Intervention Phases, Effect Size, and T values

Participant	Baseline	Intervention	Effect Size	T value
Participant 3				
M	7.88	8.57	1.17 (+37.9%)	-1.69
SD	.85	.53		
Participant 6				
M	5.60	8.00	3.32 (+<100%)	-5.68***
SD	.55	.82		
Participant 7				
M	6.75	7.63	.78 (+28%)	-1.27
SD	1.50	.92		
Participant 8				
M	7.50	9.63	.40 (+15.5%)	- .36
SD	1.29	.52		
Participant 9				
M	5.75	6.86	1.75 (+45.9%)	-2.79*
SD	.50	.69		

*$p < .05$. ***$p < 000$.
Note. Transformed data were used for Participant 8 to compute the effect size and for T-test.

Locus of Control

Locus of control was measured on the personal belief in control scale (PBCS). The average PBCS score in the baseline and intervention phases were 73.31 and 78.97, respectively. The difference in the PBCS score was not statistically significant, $t(4) = -2.20$, $p = .09$; $F(1, 18.4) = 2.73$, $p = .1$. However, the change was in the expected direction. This result suggests that the participants' locus of control became somewhat more internal in the intervention period. However, this result is not supportive for the second hypothesis about the effect of the intervention on the participants' cognitive level.

Table 14 shows the means of PBCS scores in the baseline and intervention periods for the participants, the effect size and T values. As shown in Table 14, the means

of the PBCS scores in the intervention period increased for all participants. The effect size ranged from .20 to 2.64. This indicates that there was an increase in the PBCS score in the intervention period, ranging from 8% to approximately 50%, over the average score in the baseline period. The difference in the scores between the baseline and intervention phases was significant for Participants 3 and 6, t (9) = -2.63, p = .02 and t (10) = -4.50, p = .001, respectively. The difference in the scores was not statistically significant for participant 9, t (3.09) = -2.01, p = .14. However, the effect size which indicates the magnitude of the change was comparable to the one for Participant 3.

Table 14
Mean PBCS Scores in the Baseline and Intervention Phases, Effect Size, and T values

Participant	Baseline	Intervention	Effect Size	T value
Participant 3				
M	78.75	83.43	1.57 (+44%)	-2.63*
SD	3.30	2.57		
Participant 6				
M	77.40	83.86	2.64 (+49.6%)	-4.50**
SD	2.19	2.61		
Participant 7				
M	66.00	67.5	.20 (+ 8%)	- .19
SD	3.16	2.14		
Participant 8				
M	79.75	80.38	.29 (+11%)	- .36
SD	3.40	1.30		
Participant 9				
M	64.63	79.71	1.71 (+45.6%)	-2.01
SD	14.89	2.43		

*p < .05. **p < .01.
Note. Transformed data were used for Participant 7 to compute the effect size and for T-test.

Therapeutic Effect on Each Participant

In this section, the aforementioned results will be reviewed for each participant individually and the effect of the intervention with Dosa therapy on each participant will be examined.

Participant 3

Participant 3 was overwhelmed by the amount of study required from the graduate courses she was taking and became too anxious to focus on her studies. In the screening interview, she described a plan to prepare the environment which might help her concentrate on her study. The plan included making a study schedule to designate time for study, and removing herself from outside activities. By the end of the baseline period, she quit the outside activities in which she had been involved and transferred responsibilities to other members. After the beginning of the intervention, she reported that she started to feel that things were under control and charted out the study schedule for the rest of the semester. She also reported that she was feeling a time pressure to do the schoolwork and meet the due date for each assignment but that this was different from what she felt before and did not feel so bad. On the third session after the beginning of intervention, she reported that she became more focused on her studies. Her study hours started to increase after the beginning of intervention. Her anxiety level started to decrease at the end of baseline period and stayed on the lower level.

On the questionnaire for therapy experience (QTE) which was administered at the end of the last session, her disturbance level was 4 on a 10-point scale (1 meaning no

trouble at all, 10, very disturbed). She was at level 8 at the beginning of the therapy. She stated that her issue was resolved and she was very satisfied with this result.

At the follow-up session which was held approximately six weeks after the last session, her anxiety level maintained the level of the last session and her study hours stayed higher than the average of the intervention period.

As for the first hypothesis about the effect on her experiencing, the average modal and peak experiencing level during the intervention period were not significantly higher than the ones during the baseline period (see Tables 8 and 10). However, the peak experiencing level during the intervention period reached level 4 in two sessions and 5 in one session, whereas it remained at level 3 throughout the baseline period. The peak experiencing level, on average, was not higher significantly. However, her experiencing level reached a higher level in some sessions. This may lend support for the hypothesis indicating her experiencing reached a higher level during the intervention period.

Regarding somatic awareness during the Dosa exercise, the number of sensations she reported during the first two sessions and the last two sessions was the same. The noticeability of the sensations decreased in the last two sessions and its hedonic valence moved from pleasant in the first two sessions to unpleasant in the last two sessions. These results do not suggest that she became more aware of somatic sensations as the Dosa exercise progressed. Therefore, the hypothesis about the effect of the intervention on her experiencing was not supported on the somatic awareness measure.

As for the second hypothesis about the effect of Dosa therapy on the behavioral, cognitive, and affective level of functioning, her study time increased and the trend was clear. This indicates that the intervention had an effect on the behavioral level of

functioning. Her anxiety level was lower in the intervention period than the baseline period. However, the change started at the last baseline session. Therefore, the causal effect of the intervention was ambiguous on the affective level. Her self-efficacy became higher in the intervention period. Although the change was not statistically significant, the effect size did indicate that her self-efficacy score became 37.9 % higher over the average in the baseline period. Her locus of control became more internal in the intervention period and the difference in the PBCS scores between the baseline and intervention periods was statistically significant. Therefore, the intervention had an effect on the cognitive level of functioning.

Participant 6

The issue Participant 6 focused on was her feeling that she did not fit in. This feeling made her feel isolated and sometimes frustrated because she felt no one understood her. She often challenged the status quo to try to improve a situation. This tended to cause an interpersonal conflict. Those incidents usually built up stress in her and made her feel upset and anxious. Because of this, it was difficult for her to shut them out of her mind at night and fall asleep. As a target behavior, she recorded her ease in falling asleep to monitor her anxiety level.

Her anxiety level started to decrease one week after the beginning of the intervention and her sleep behavior started to improve right after the intervention started. On the third session after the intervention started, she reported that she became aware of inner sensations and when she felt anxiety building, for example while working on a paper with the due date approaching, she took a short break and it helped her slow down.

She reported that she came to view that her tendency to think things more deeply made her feel different and isolated and that there might be some people who think the same way she does. On the fifth intervention session, she became tense the night before a class presentation and could not fall asleep. She tried relaxation and while concentrating only on her breathing and muscle sensation, she noticed that the disturbing thoughts disappeared and she could fall asleep. At the last session, she stated that she still has a feeling that she did not fit in, but it does not disturb her any more nor does it cause anxiety. That is because she now realizes that people are allowed to have a different opinion. She further stated that she can control just herself and she will not let others' opinion continue to affect her.

On the questionnaire about therapy experiences which was administered at termination, her disturbance level was 2; it was 8 at the beginning of therapy. She rated that her issue was resolved and she was very satisfied with this result. At the follow-up session, it was found that both her anxiety level and behavior remained consistent with those reached at the end of the therapy.

As for the first hypothesis about the effect of Dosa therapy on her experiencing, the experiencing level increased for both modal and peak levels during the intervention period. The increase in the peak rating was statistically significant. This result lends support for the hypothesis. Regarding the somatic awareness during the Dosa exercise, the number of sensations she noticed decreased slightly in the last two sessions, compared to the first two sessions. The noticeability of those sensations slightly increased in the last two sessions. The hedonic valence became extremely pleasant in the last two sessions, which were negative in the first two sessions (see Table 11). These results

suggest she came to perceive the somatic sensations more positively as the therapy progressed.

As for the second hypothesis about the effect of Dosa therapy on the behavioral, cognitive, and affective levels of functioning, her sleep behavior improved during the intervention period and the trend of the change during the intervention reached statistical significance. This result supports the hypothesis about the effect on the behavioral level. Her anxiety score decreased during the intervention period and the effect size indicated that her anxiety score decreased 39.6% during the intervention period over the average of the baseline period, although it was not statistically significant. This result is a direction that supports the hypothesis about the effect on the affective level. Both her self-efficacy and internal control increased during the intervention period. Both changes were also statistically significant. Therefore, these results were supportive for the hypothesis about the effect on the cognitive level.

Participant 7

The issue Participant 7 focused on was her anxiety caused by procrastinating when doing her schoolwork. When an assignment appeared very difficult for her, she avoided starting it. As a result, putting off the work made her very anxious. During the baseline phase she continued to put off writing a paper and finished doing it in one day on the day before it was due and felt intense anxiety. This also made her feel very disappointed with herself. During the intervention, she continued failing to make an early start although she continued planning it. On the fourth session, she started to write a paper a few days before the due date and finished it within a decent time on the day

before it was due. This experience made her feel confident and good about herself. However, this was the only occasion when she succeeded. The paper was an assignment from the class which she enjoyed. Based on this experience she noticed that degree to which she cared about the class affected how much effort she put in for an assignment.

The disturbance level at the end of the therapy was 8 on a 10-point scale; it was also 8 at the beginning of the therapy. She rated that her issue was slightly improved and she was somewhat satisfied with this result, on the questionnaire for therapy experience.

At the follow-up session, which was held six weeks after the last session, her anxiety level became higher than the average of the intervention period. Her study hours were more than the level at the end of the therapy.

As for the first hypothesis about the effect on the experiencing, the modal and peak experiencing level increased during the intervention period and the peak experiencing level was significantly higher than the baseline period. This result partially supports the hypothesis. Regarding the somatic awareness during the Dosa exercise (see Table 11), the number of sensations she reported in the last two sessions slightly decreased. The noticeability of the sensations increased in the last two sessions compared to the first two sessions. The hedonic valence of the sensations became more unpleasant in the last two sessions. These results indicate that as the Dosa exercise progressed, she began to notice the somatic sensations more clearly and slightly unpleasantly.

As for the second hypothesis about the effect on her behavioral, affective, and cognitive level of functioning, her study time increased during the intervention phase and the trend was statistically significant. However, the average study time was lower during the intervention period than the baseline period. Therefore, the therapeutic effect on her

study behavior was ambiguous. Her anxiety lowered significantly during the intervention period than in the baseline period. However, her anxiety scores started to decrease during the baseline period (see Figure 5). Therefore, again, the therapeutic effect on her anxiety level was not conclusive. Her self-efficacy became higher and her locus of control became more internal during the intervention period. However, they did not reach statistical significance. Therefore, the therapy did not have an effect on her cognitive level.

Participant 8

The issue Participant 8 addressed was her feelings toward her boyfriend. She was not sure about her feelings and her feelings fluctuated from one extreme to the other. At one time she felt that he was the person she was meant to be with and the next moment she was not sure about that. This condition made her feel anxious and she could not make a decision regarding the engagement. For this reason, she wanted to become certain about her feelings and make a decision confidently. She monitored her feelings toward her boyfriend as a target behavior.

During the baseline period, her feelings fluctuated and the ratings of her feelings ranged from 6 to 10 on a scale from 0 to 10. This condition verified her account. After the beginning of intervention, she started to feel right and more definite about her feeling toward her boyfriend. She made a decision to marry her boyfriend on the third week after the beginning of intervention and told her decision to her parents on the following week. She was worried about her parents' feelings about her boyfriend and this affected her feelings of insecurity about him. In spite of her concern, her parents were very happy for

her. The scales reflected her internal condition sensitively: the behavior rating dropped and the anxiety score increased the week she made the decision about the engagement. After that week, the behavior ratings became higher and more stable. The anxiety scores became lower and maintained the lower level for the rest of the intervention period. At the end of the therapy, her disturbance level became 1, no trouble at all, which was 8 at the beginning of the therapy. She rated that her issue was resolved and she was very satisfied with this result.

At follow-up, the rating of her feelings maintained the level which was reached at the end of the therapy. Her anxiety level was higher than it was at the end of the therapy. However, it was still below the average of the baseline period.

As for the effect of the therapy on her experiencing, both modal and peak experiencing levels became higher during the intervention period: the change in the modal rating was statistically significant and the change in the peak rating was fairly large, although it did not reach statistical significance (see Tables 8 and 10). Therefore, these results partially support the hypothesis. Regarding the somatic awareness during the Dosa exercise, the number of sensations she noticed did not change between the early and the late part of the intervention. The noticeability of those sensations became less clear in the last two sessions. The hedonic valence of those sensations became less unpleasant in the last two sessions. These results indicate that she came to notice somatic sensations less clearly and less unpleasantly around the end of the intervention.

As for the effect of the therapy on the behavioral, cognitive, and affective level of functioning, the ratings of her feeling toward her boyfriend became higher in the intervention than the baseline period and this change reached statistical significance.

During the intervention period she made a decision to become engaged. This indicates the therapy also made a difference which had clinical significance. Therefore, the intervention had an effect of her behavioral level. Her anxiety score became lower in the intervention period than the baseline phase. This difference did not reach statistical significance, however the reduction of her anxiety score during the intervention period was 37.5% and fairly large. Therefore, this finding is in the direction of the hypothesis about the effect of the intervention on her affective level. Her self-efficacy scores became higher in the intervention period than the baseline period. Although the change was not statistically significant after the data were transformed to remove the autocorrelation, the difference in the actual scores was large and clear (see Table 13). Her locus of control score became higher in the intervention period than the baseline period. But the difference was small. Therefore, these results lend partial support for the hypothesis about the effect of the intervention on her cognitive level.

Participant 9

The issue Participant 9 focused on was her anxiety caused by the stress from schoolwork. Her disturbance level from this issue ranged from 6 to 8, reporting it fluctuated from day to day. She tended to act out when she felt anxious and stressed out. Therefore, she counted her acting-out behaviors such as becoming curt with her husband, crying, and kicking things, to monitor her anxiety level.

After the beginning of the intervention she started to feel that her tension level went down. She felt she became more tuned into her body and tried relaxation when she felt tense during the week. She started to notice that when she became anxious, she could

not function well and became less productive. She also noticed that she is a social person and enjoyed interacting with family and friends. However, due to the fact that schoolwork consumed her time, she did not spend enough time with her family and friends. She assumed that this might be one of the factors about which she felt so stressed. She said about this situation, "It is my decision if I let anxiety take over my life and become miserable or I take over and do something about it." Thus, she took time for her family and socialized with her friends and enjoyed it. She experienced a few incidents which were stressful and made her feel very upset. One time she locked herself out of her car at a gas station on her way to meet with her friend to work on an assignment together and the other time, she got lost on her way to get her assignment paper which was due on the following day. However, both times she handled the situation without acting out. She became aware of an internal sign that anxiety was building up. When she noticed it she found it easier to handle it if she talked about it. She stated that if she talked about it, it allowed her to put some distance between the stressful event and herself and that helped her not get caught up with her feelings. At the end of the therapy her disturbance level became 1, no trouble at all. She rated that her issue was resolved and she was very satisfied with the result.

At the follow-up session which was held six weeks after the last session, her anxiety level was lower than the level of the last session and she did not have any acting-out behaviors.

As for the hypothesis about the effect of therapy on the experiencing, both the modal and peak experiencing levels became higher in the intervention period than the baseline period. Although the change in the peak experiencing level did not reach

statistical significance, the change was fairly large. This result lends a partial support for the hypothesis. Regarding the somatic awareness during the Dosa exercise, the number of sensations she noticed slightly decreased in the last two sessions. The noticeability of those sensations became slightly higher in the last two sessions than the first two sessions. The hedonic valence became slightly less pleasant in the last two sessions. These results indicate that as the Dosa exercise progressed, she tended to notice slightly less somatic sensations and she noticed them slightly more clearly and less pleasantly.

As for the hypothesis about the effect of the therapy on the behavioral, affective, and cognitive level of functioning, her acting-out behaviors decreased during the intervention period. The difference in her behavior between the baseline and intervention periods reached statistical significance. Her anxiety level also deceased during the intervention period. Although the difference in the anxiety score between the baseline and intervention periods did not reach statistical significance, the reduction of her anxiety scores during the intervention period was 37.1% over the average of the baseline period and fairly large. Her self-efficacy became higher during the intervention period and the difference in the self-efficacy scores between the baseline and intervention periods was statistically significant. Her locus of control became more internal in the intervention period. Again, although the difference between the baseline and intervention periods did not reach statistical significance, the increase of the scores during the intervention period was 45.6% over the average of the baseline period and fairly large. In sum, the intervention seems to have had some effects on the behavioral, affective, and cognitive level. These results are in the direction that was hypothesized.

Therapeutic Process

Since the results described above indicate that the intervention with Dosa therapy had a therapeutic effect on the participants' self-functioning, an analysis of the therapeutic process of Dosa therapy was conducted by using a task analysis approach. The following three steps were taken to identify the participant's inner operations which enabled them to resolve a task of Dosa therapy. First, the task and the task environment of Dosa therapy were described. Second, a rational performance model, which is to be made based on theory, rational analysis and the researcher's clinical experiences, was constructed. Lastly, the rational model was tested empirically with the data from the participants and revised based on the empirical data. Based on the revised performance model, the operations model which describes the participants' mental operations during the Dosa task process was constructed.

Description of the Task and the Task Environment

The Dosa task used in this study was to relax the participants' upper body while rotating it. The participants needed to relax relevant parts of their body to rotate their upper body toward the floor. The participants' task was started when the therapist proposed the Dosa exercise and they decided to do it. When the participants came to a point where they could not move the body further, this point became another task situation. The participants' task at this point was to pay attention to the body sensation and try to find a way to relax the specific part of the body which became stiff and prevented the movement.

When a task situation arises and the client focuses on this task, the therapist knows this because the movement of the client's upper body stops. The therapist's assistance, which is termed the task environment in a task analysis approach, included the following (Konno & Ohno, 1987; Kubota, 1991): (1) The therapist pushes the client's body slightly harder toward the direction to which the client's body is supposed to move in order to clarify the body sensation. (2) The therapist encourages the client to feel the body sensations and to keep doing it for a while to see if the sensations change. And (3) the therapist suggests the client try and find a strategy of how to resolve the difficulty.

Rational Analysis

Based on the review of the literature and the investigator's clinical experiences, the idealized performance model of relaxation Dosa process was identified (Naruse, 1985; Konno & Ohno, 1987; Watanabe, 1995). The eight steps were identified and illustrated as in Figure 9.

First, the client accepts the Dosa exercise which the therapist proposes and starts the practice. Second, the client reaches a point where she cannot relax her body. At this point, the client somehow relaxes the body and notices the movement in the body which occurs as a result of relaxation. Third, the client becomes aware of the tension in some parts of the body which prevents the movement. Fourth, the client becomes aware of the sensation which follows relaxation. Fifth, the client knows the relaxation physically and starts paying attention to the effort process of how to relax. Sixth, the client tries some strategies to relax tension in her body. Seventh, the client finds a strategy or a clue which

is useful to relax the body. Lastly, the client learns the self-relaxation skill and can relax in the way she intends.

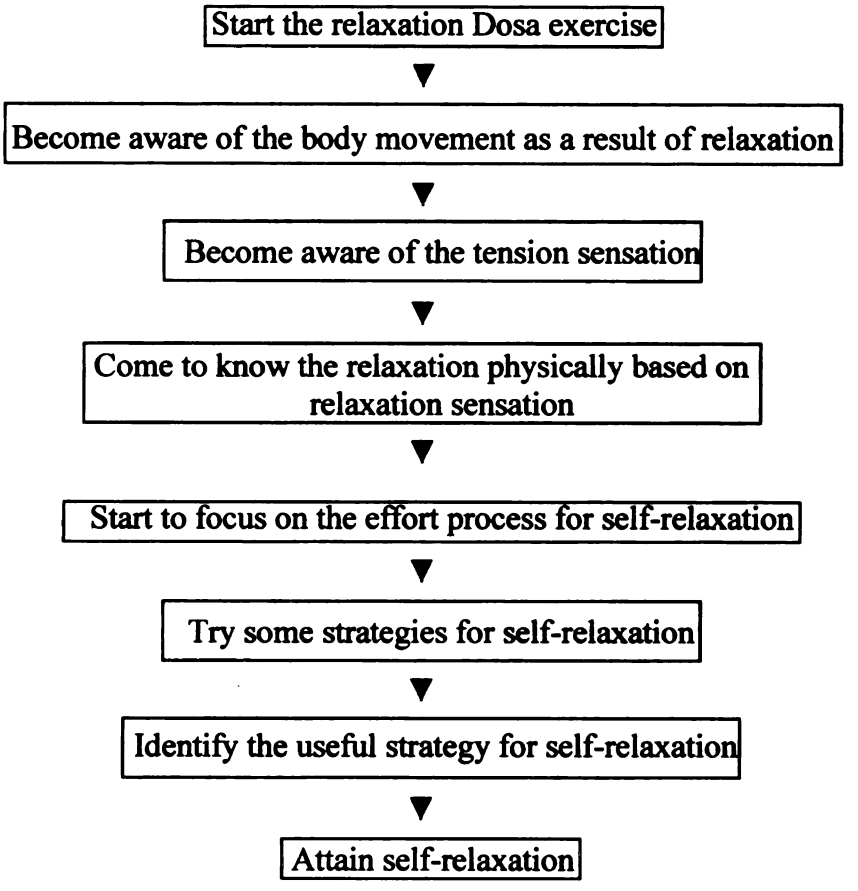


Figure 9. Rational Performance Model Based on Idealized Client.

Empirical Analysis

Before beginning the examination of each participant's Dosa performance process, the behavioral indices based on which the investigator judged the occurrence of each step was described. They are shown in Table 15.

Table 15
Behavioral Indices of Each Step of Dosa Performance Process

Step 1: Start the relaxation Dosa exercise The participant follows the therapist's instruction to start the practice.
Step 2: Become aware of the body movement after or while relaxing The participant reports that her body is moving. However, she does not report a specific body sensation regarding tension and/or relaxation. The participant agrees with therapist's feedback that her body is moving.
Step 3: Become aware of the sensation of body tension The participant reports a body sensation when her body stops moving due to a body tension.
Step 4: Come to know the relaxation (goal of a Dosa task) based on body sensation The participant reports a body sensation while or after she relaxed the tension.
Step 5: Start to focus on the effort process for self-relaxation The participant reports what she tries to do to relax her body the first time after step 4 is observed.
Step 6: Trial of some strategies for self-relaxation The participant reports what she is doing to relax her body tension. The participant reports how easy or difficult it is to relax body tension.
Step 7: Identification of a useful strategy for self-relaxation The participant reports that she identifies a clue of what to do to relax body tension.
Step 8: Attainment of self-relaxation The participant reports she can relax body tension voluntarily by using a strategy she found.

The participants' Dosa performance which was recorded on the therapy session record form was examined in terms of the steps described above in Table 15. The participants' perception of the therapy session and post-therapy mood was measured on the session evaluation questionnaire. The participants' perception of the session was

measured in terms of the depth and smoothness dimensions and their post-therapy mood was measured in terms of the positivity and arousal dimensions. Those dimensions were measured on a 7-point scale and yield the score of each dimension, the higher the score, the higher the dimension. The investigator hoped to see that the participants would perceive the session with Dosa therapy as deep and smooth. As for the post-therapy mood, the investigator assumed that the participants would feel positive and alert after the session. The Dosa performance process which each participant went through is described below with their perception of the session and post-therapy mood.

Participant 3. At the first intervention session, Participant 3 lay down on her side on the mat and moved her body toward the floor following the therapist's instruction (Step 1). Her shoulder stopped twice due to the tension between point 1.5 and 2, where the angle made with the shoulder line and the floor is between 75 and 60 degrees. She relaxed the tension after three and 9 seconds, respectively. However, for both times she did not notice movement of her body or any changes in the body sensation. When she relaxed the tension which occurred at point 2, she reported that she felt a little difference after the therapist asked her if she felt any difference in her body (Step 2). At the second trial, she started reporting more body sensations. When her shoulder stopped at point 2, she reported that she was feeling a twist and stiffness in her shoulder (Step 3). When she relaxed the tension at point 3, where the angle made with the shoulder line and the floor becomes 30 degrees, she felt her shoulder was relaxing (Step 4).

At the third session, the tension between Points 2 and 3 were resolved and her shoulder moved to Point 3 without interruption. When she relaxed the tension at Point 3,

she reported lightness in her body. When her body stopped at Point 3.5, she reported tightness in waist and shoulder. It took fifty-three seconds to relax the tension. When the therapist asked what she did to relax that tension, she reported that she was just trying to relax it (Step 5). At the end of the exercise, Participant 3 reported that she could feel a relaxation sensation more clearly.

At the fourth session, Participant 3 noticed that the tightness in her waist at Point 3 became less than she felt in the previous session. After relaxing it, she reported that the tightness moved up a little and she was feeling it in her upper back. When the therapist asked what she did when the sensation moved up, she reported that she relaxed her waist and shoulders and that she was getting a sense of how she could let it go. When she was relaxing the other side, she reported that this side was easier to relax than the previous side (Step 6).

At the sixth session, Participant 3 relaxed the tension at Point 3.5 and reported that she came to feel a subtle change in her body when the tension started to loosen (step7). At the seventh session, after she relaxed the tension at Point 3.5, she stated that she relaxed it by focusing her mind on being relaxed (Step 8).

Regarding Participant 3's perception of the session with Dosa therapy, the average depth score and smoothness score were both 6.94. The average positivity score and arousal score were 6.78 and 5.91 respectively. These results indicate that Participant 3 perceived the session with Dosa therapy very deep and smooth and she felt positive and more alert after the session.

Participant 6. At the first session, Participant 6 did not raise any question when the therapist explained what to do and took a position by lying on the side to start the Dosa practice (Step 1). Her shoulder stopped first when it moved to Point 2 and the tension was relaxed after three seconds. When the therapist asked if she noticed any difference, she did not respond. When her shoulder stopped again after moving a little further, she relaxed it after four seconds. She agreed this time when the therapist asked her if she felt any movement in her body (Step 2). When her shoulder moved to Point 3, she reported that she was feeling her back was stretching (Step 3). It took ten seconds to relax that tension. Then she changed the side to relax the other side. When her shoulder stopped at Point 3, she reported the tension in the muscles and when she relaxed, she reported the relaxing sensation in the muscles and the tensed sensation moved up. When she relaxed it, she reported it had disappeared (Step 4).

At the second session, she noticed a pulling sensation when her shoulder stopped at Point 2.5 and the tension moved to the upper part after she relaxed. When she relaxed tension in that part, she reported she tried to let it go (Step 5). At the third session, she reported she visualized that the muscle was going to relax as a strategy for relaxation. At the fourth session, she reported she concentrated on the stretching muscle while trying to relax that part. At the fifth session, she reported that she was doing very well and relaxed her shoulder to Point 3.5. These accounts indicate that she was trying some strategies by monitoring if they worked or not (Step 6).

At the sixth session, she reported that she slowed down the breathing and that helped her relax (Step 7). At the seventh session, she relaxed tension at Point 3.5 and reported that she relaxed the tension by monitoring her breathing (Step 8).

Regarding Participant 6's perception of the session with Dosa therapy, the average depth score and smoothness score were 6.46 and 6.25 respectively. The average positivity score and arousal score were 6.29 and 2.18 respectively. These results indicate that Participant 6 perceived the session with Dosa therapy very deep and smooth and she felt positive and less alert after the session.

Participant 7. Participant 7 lay down on her side and took a position to begin the practice after the therapist explained the exercise (Step 1). When her shoulder stopped at Point 2 due to the tension, she reported that she was feeling tightness inside of her shoulder blade (Step 3). She relaxed it in 8 seconds, but she did not feel that her body relaxed. Her shoulder stopped again at around Point 2.5 and she pointed to her upper shoulder and reported she was feeling a lot of tension in that area. She managed to relax it. However, again she did not feel any change in her body sensation. At the second trial, she relaxed tension at Point 2 in ten seconds and reported that her shoulder was moving down (Step 2). With the other side, her shoulder stopped at Point 2. She relaxed tension in twenty seconds and reported that the pain in her neck lessened.

At the second session, her shoulder stopped at Point 2.5 and she reported strain in her shoulder blade. When it relaxed, she reported that she felt the muscle relax (Step 4). When her shoulder relaxed at Point 3, again she noticed it and reported she felt warmth in her shoulder blade. At the second trial, she stated that she concentrated on the area where she felt tension and tried to relax it (Step 5) and felt sure that she did something to relax although she could not explain what she did. At the third session, she reported that she just let it go and her shoulder fell, after she relaxed the tension at Point 3 and felt relaxed.

With the other side, her shoulder stopped at Point 2.5, moving less than the other side did, she reported that it feels like this side is harder to relax than the other side. She reported that she tried to slow down her breathing and focused on the area where she felt tension in order to relax (Step 6). At the fourth session, her shoulder did not stop until Point 3. When it stopped, she relaxed faster than before. After she relaxed the tension, she reported that she felt that she was getting more control over her body. At this session, she reported that she concentrated on the tensed area and slowed down her breathing while imagining that area was going to relax. At the fifth session, she reported that she felt the muscle loosening before she could fully relax the tension. At the sixth session, she relaxed the tension at Point 3.5 in fifteen seconds and reported that she concentrated on her arm and shoulder and let it go. She also stated that she tried not to control it, rather just let the muscle relax. However, she still had to think about it to make it happen (Step 7). At the seventh session, her shoulder moved straight to Point 3.5 and stopped. She felt a pulling sensation in her shoulder blade and relaxed it in seven seconds. She reported it became easier to relax and she hardly had to think about it (Step 8).

Regarding Participant 7's perception of the session with Dosa therapy, the average depth score and smoothness score were 6 and 6.28 respectively. The average positivity score and arousal score were 5.69 and 1.8 respectively. These results indicate that Participant 7 perceived the session as deep and smooth and felt fairly positive and less alert after the session.

Participant 8. Participant 8 also started the practice without any difficulty, lying on her side on the mat and letting the therapist help to move her shoulder toward the floor

(Step 1). Her shoulder stopped at Point 3 where tension occurred. She relaxed it in thirteen seconds. When her shoulder moved again and the therapist asked if she noticed any sensation, she admitted it by nodding her head. When her shoulder relaxed again, she reported that her shoulder moved (Step 2). When her shoulder stopped after moving a little further, she reported she was feeling her back and side stretching (Step 3). At the second session, she reported strain in various parts of her body such as the front shoulder, lower side, and lower back, when her shoulder stopped. When relaxed, she reported her body moved. However, she did not notice any body sensations accompanying relaxation besides movement. At the third session, she noticed her side became loose after relaxation (Step 4). When her shoulder stopped at Point 3, she reported strain, but it was less than the previous week, she said. At the second trial of the other side, she relaxed faster when the tension occurred and reported that she thought about relaxing that part (Step 5). After the practice, she reported she felt more relaxed this session than the previous sessions.

At the fourth session, her shoulder moved all the way to Point 3.5 without stopping. When it stopped, she could not relax it right away. When she relaxed, she reported that she felt frustrated because she was not sure if she was doing it properly (Step 6). At the seventh session, when she relaxed tension at Point 3.5, she reported she took a deep breath and concentrated on relaxing the body (Step 7). At the eighth session, she reported while relaxing the tension at Point 3.5 that the tension became faint and the relaxation was going well (Step 8).

Regarding Participant 8's perception of the session with Dosa therapy, the average depth score and smoothness score were 5,91 and 6.44 respectively. The average

positivity score and arousal score were 6.13 and 2.78 respectively. These results indicate that this participant perceived the session with Dosa therapy as fairly deep and smooth and felt positive and less alert after the session.

Participant 9. Participant 9 also did not have any difficulty nor show any hesitation when the therapist asked her to lie down on her side to start the Dosa practice (Step 1). Her shoulder moved to Point 2 and stopped first time. She relaxed it after two seconds. When the therapist asked if she noticed the movement, she nodded her head (Step 2). When she relaxed the tension at Point 3, she reported that she felt release (Step 4). At the second session, her shoulder stopped at Point 3, while trying to relax, she reported that she was feeling stiffness in her shoulder (Step 3). It took her seventeen seconds to relax the tension. With the other side, her shoulder stopped at Point 2. She reported a pulling sensation in her side and stated that she had to focus on her body and shut out other thoughts to relax that part of her body (Step 5). At the third session, when she relaxed the tension at Point 3, she reported that in order to relax the tension, she also had to relax other parts. When she started the other side, she reported immediately that this side was tighter and harder to relax than the other side. At the fifth session, she reported that she focused on the tension while relaxing her body (Step 6). At the sixth session, she reported that concentrating on the tension and trying to regulate her breathing helped her relax the tension at Point 3 (Step 7). At the seventh session, she relaxed tension at Point 3.5 smoothly and reported that she was just letting go and it went naturally (Step 8).

Regarding her perception of the session with Dosa therapy, the average depth score and smoothness score were 6.96 and 6.71, respectively. Regarding her post-therapy mood, the average positivity score and arousal score were 6.5 and 3, respectively. These results indicate that Participant 9 perceived the session as very deep and smooth and she felt very positive and she was less alert after the Dosa therapy session.

In sum, Participants 3, 6, and 8 followed all the steps of the rational model. Participant 7 noticed tension before she became aware of the movement of her body while relaxing. Therefore, Step 3 appeared before Step 2. The rest of the process followed as described in the rational model. Participant 9 became aware of the movement of her body while relaxing and then became aware of a relaxing sensation before she noticed the tensed sensation. Therefore, for Participant 9, Step 4 appeared before Step 3. After this, the process proceeded as the rational model described.

Based on these empirical data, the rational model was revised. Since it was found that Step 2 to Step 4 do not follow the order which was expected in the rational model, these steps were combined into a single step and a new step was named as "Become aware of body sensations which arises before, during and after the relaxation". This includes moving sensations, tension and relaxation sensations. The revised performance model based on the actual data from the participants is shown in Figure 10.

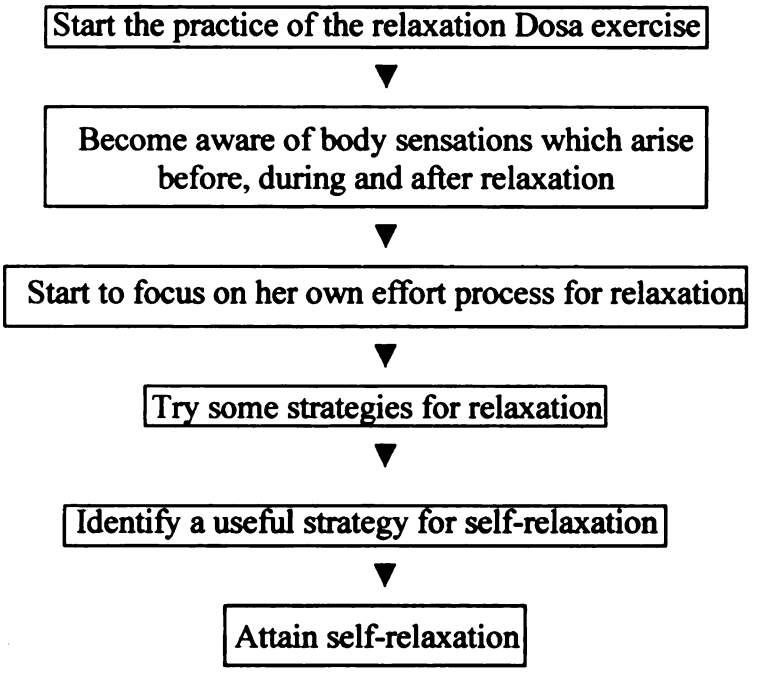


Figure 10. Revised Performance Model.

Based on the revised performance model, an operation model was constructed by inferring the possible internal mental operations which are involved in generating the observable performances. A preliminary operations model is shown in Figure 11. The participants started the practice of the Dosa task by accepting the Dosa task and the therapist's assistance. Next, the participants focused their attention on their body and the body sensations which arose accompanying the relaxation. Then, they became aware of the body sensations during the relaxation. They came to understand the Dosa task physically and started to focus on the effort process to generate the movement by paying attention to the part which needs to be more relaxed. Then the participants connected the strategy to the resultant movement after relaxation, evaluated how it matched with the planned movement, and revised the strategy based on the evaluation. This helped them

identify the operational strategy which enabled them to relax the specific part and allowed them to regulate the operational process while monitoring the movement.

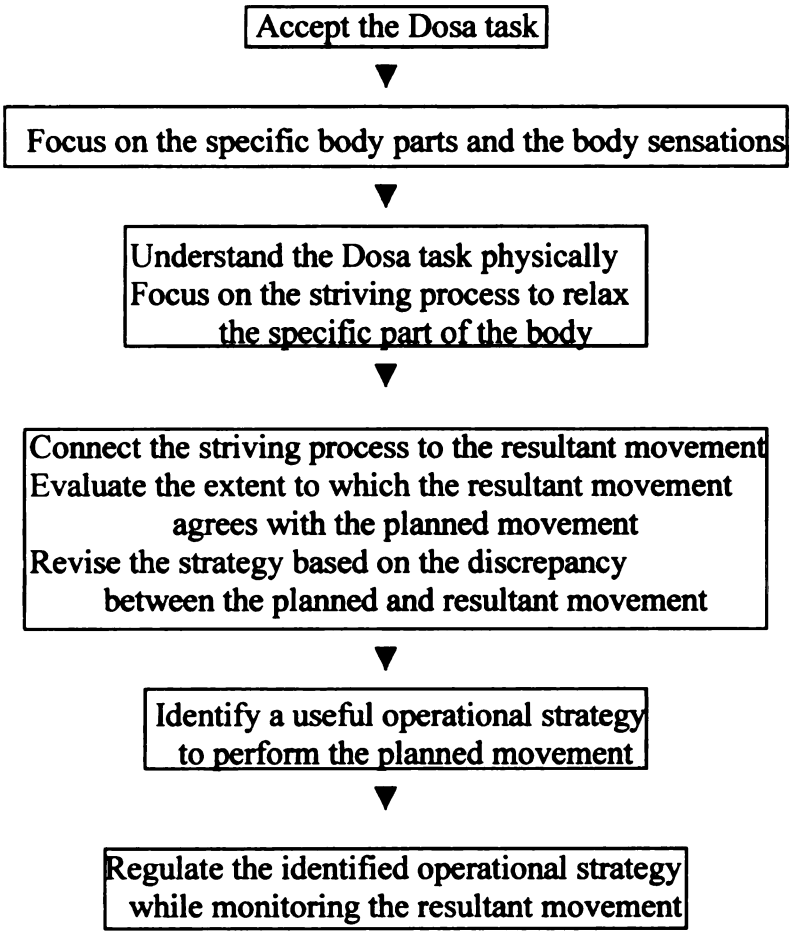


Figure 11. Preliminary Operations Model

CHAPTER 5

DISCUSSION

In this study, the effectiveness of Dosa therapy in treating individuals with anxiety problem was examined. In addition, the therapeutic process of Dosa therapy was analyzed to better understand the underlying mechanisms which operate during Dosa therapy. In this section, the findings from the study are reviewed, the limitations of the study are examined, and the implications of the study for social work theory, research, practice, and social policy are discussed.

Major Findings

Therapeutic Effect

Five female graduate students who had an anxiety problem were treated with Dosa therapy. The effect of the intervention with Dosa therapy was examined with regard to the change in their experiencing, affective, behavioral, and cognitive functioning. As a group, the participants' experiencing level deepened in the intervention period for both the modal and peak experiencing level. The average peak experiencing level of the intervention period was 4.27. Level four experiencing indicates that a person attends inwardly and describes his/her feelings or experiences of the events, rather than the events themselves. Therefore, as hypothesized, the result suggests that the intervention with Dosa therapy helped the participants attend to their feelings and experiences.

The average anxiety scores of the participants decreased during the intervention period, indicating that the intervention with Dosa therapy had an influence in reducing

the participants' anxiety. With regard to the causal inference of the intervention, the anxiety scores began to decrease after the intervention started with three of the participants, Participants 6, 8, and 9. Therefore, the result suggests, although not conclusively, that it was the intervention that influenced the change in the participants' anxiety level. Thus, as hypothesized, the intervention with Dosa therapy may have had an effect on the participants' affective level of functioning.

Regarding the participants' target behavior, an expected change in their behavior was observed in the expected direction for all participants. Moreover, these changes occurred after the intervention began. Therefore, it again indicates that Dosa therapy was effective in generating a change in behavior and supported the hypothesis about the effect of Dosa therapy on the participants' behavioral level of functioning. However, a behavioral change for Participant 7 was interpreted as ambiguous. This is discussed in detail later. The participants' self-efficacy increased and their locus of control became more internal, although the change in locus of control did not reach statistical significance. These results indicate that Dosa therapy affected the participants' cognitive functioning, enhancing their self-efficacy and bringing their locus of control toward the internal direction. In fact, the participants started to do something to cope with their anxiety problem such as organizing their daily schedule, taking a time-out, and relaxing away their tension when it occurred. This suggests that they took control over their lives and actively exercised a coping strategy. Thus, again, the result was somewhat supportive of the hypothesis about the effect of Dosa therapy on the participants' cognitive level of functioning.

When the change in the participants' behavioral and affective levels was examined more closely, it was seen that the change in their behavior followed the implementation of the intervention for all participants, whereas the effect of the intervention on their anxiety level was clear for three participants. In other words, the participants' behavior responded more sensitively to the intervention. This discrepancy of responses between the two levels of functioning could be caused by the difference of the reaction time of behavioral and affective levels of functioning. In other words, the affective level takes more time to respond to the intervention than the behavioral level. This may appear because of the sensitivity of the measurement, or it may reflect the nature of the relationship between the behavior and affective level of functioning, that is, the behavioral change occurs first and is followed by the change in the affective level. This will be an interesting question to pursue in future research.

The participants showed expected changes in all or some of their levels of functioning. When examining the results individually, however, more complex and interesting pictures were revealed.

As for Participant 3, who focused on her feeling of being overwhelmed by her schoolwork and could not focus on her studies, her study hours increased. Her locus of control became more internal in the intervention period. Her experiencing level did not deepen during the intervention phase on average. However, there were a few sessions in which her peak experiencing level reached higher than the level of the baseline period. Her anxiety level decreased during the intervention. However, the change in the anxiety score started at the last observation of the baseline period. For this reason, the causal effect of the intervention was inconclusive. Therefore, the effect of the intervention was

observed on her behavior and cognitive functioning. But, the effect on her experiencing and affective functioning was not clear.

Her feeling of being overwhelmed and her difficulty in concentration were likely caused by the transition she was going through. She worked for more than twenty years and then came back to school. It is assumed that she might have experienced some changes in her life such as in her role, daily schedule, and workload. These changes might have made her feel overwhelmed. When she came to the screening interview, she already had a plan to handle this situation and described it to the investigator. This suggested that she was a task-oriented person and well motivated to cope with the situation she was facing. Her feeling of being overwhelmed might have been a result of her enthusiasm which was not organized or directed yet.

As planned, she transferred the responsibility to other members in the outside activities in which she was involved and made a weekly schedule to allocate time for study during the baseline period. This might have influenced the decrease in her anxiety level during the baseline period. Her tendency to be task-oriented may explain the result that her experiencing level stayed in the lower level. Although she talked about her feelings regarding the event, most of the time she focused on each event she was facing and discussed concretely how to handle them. Therefore, on average, her experiencing level stayed in a lower stage.

She found the Dosa exercise relaxing and energizing at the same time. This appears contradictory. However, from the investigator's past experiences, a client may feel relaxed and alert at the same time. It is assumed that this experience may have helped

her keep focused and get her work done, since she was already motivated and eager to do the necessary work.

Participant 6 addressed the feeling that she did not fit in, which made her feel anxious, isolated, and sometimes frustrated. During the intervention period, her anxiety decreased and her sleep behavior improved. She came to feel more self efficacious and her locus of control became more internal. Her peak experiencing level also increased and the average peak experiencing level during the intervention period was 5.2. In level 5 experiencing, a person explores his/her issue and makes a tentative hypothesis regarding the cause of the problem in order to resolve it. Therefore, the effect of the intervention was observed on her experiencing, behavioral, affective, and cognitive levels.

By the end of the intervention, she came to acknowledge the difference in opinions she observed between others and herself, and did not get disturbed by this situation. It appeared that she committed herself fully to a project, whatever it is, once she decided to do it. She took the same stance for her graduate study and took it very seriously. Therefore, it was assumed that she was motivated for the change when she decided to participate in this study. The problem she focused on had a long history. For this reason, it appeared difficult to deal with her issue in this type of short-term therapy. In spite of the investigator's concern, the changes in her various levels of functioning were observed. It is assumed that the fact that the improvement of her condition was measured with a concrete behavior and that she was motivated, facilitated the changes observed through the intervention.

Participant 7 focused on her habit to procrastinate the completion of her homework, which made her anxious, and worked to change this study habit. Her peak

experiencing level became higher during the intervention. Her study hours increased during the intervention period. However, the average study hours during the intervention period were less than during the baseline period. Therefore, the change in her study behavior was not clear. Examined more closely, her study hours during the baseline period continuously decreased. The fact that she had to report her study hours affected her study behavior and she spent more time studying for the first two weeks than she did usually. Her study behavior in the first two weeks might have been influenced by the self-observation and an overrepresentation of what it usually was.

Her anxiety lowered during the intervention period. However, her anxiety scores started to decrease during the baseline period. Therefore, again, the effect of the intervention on her affective level was ambiguous. The change in her self-efficacy and locus of control were small. Therefore, there was no therapeutic effect observed on her cognitive functioning. In sum, the effect of Dosa therapy was observed on her experiencing. However, the effect on her behavior and affective functioning was not clear. The effect on her cognitive functioning was not observed.

Her goal of therapy was to start working on her class assignments early and not to procrastinate. Her reason for doing this was because she became a graduate student and she thought that this was what graduate students "should" do. She reported that she felt guilty not for herself but for the therapist when she did not spend as many hours for her study as she planned. This account may illustrate that she was motivated extrinsically by the outside standard or another person's evaluation rather than intrinsically by her own interest. However, she started to work early on one assignment from the class she really enjoyed and cared about. This incident suggests that her study behavior was obviously

influenced by her interest in the class. Therefore her goal for therapy might have needed to be explored more thoroughly with regard to what she was really interested in having happen.

Participant 8 focused on her feelings toward her boyfriend. She was not sure if he was the right man to marry and this made her feel anxious. Her feelings fluctuated from one extreme to the other and she could not make a decision confidently regarding the engagement. Her experiencing level became higher during the intervention period and she talked more about her feelings regarding this issue. The ratings of her feelings toward her boyfriend became higher and she became more sure of her feelings. Actually, she made a decision to marry her boyfriend and got engaged during the intervention period. In this respect, a clinically significant change in her behavior occurred during the intervention period. She became less anxious during the intervention period. Her self-efficacy score increased during the intervention period. However, due to the autocorrelation, the data were transformed and the difference was not large enough to reach statistical significance with the transformed data. In sum, the effect of the intervention was observed on the behavioral, affective, and experiencing levels. The effect on her cognitive level was not clear. It is assumed that Dosa practice helped Participant 8 became more tuned in to her internal experiences. This experience made her more aware of her feelings toward her boyfriend and more confident to make a decision regarding the engagement.

Participant 9 focused on her anxiety caused possibly by her fear of not being able to do her schoolwork well. During the intervention period, her peak experiencing level became higher. She became less anxious and her acting-out behaviors decreased. Her

self-efficacy became higher and her locus of control became more internal during the intervention period. Therefore, the effect of the intervention was observed on the experiencing, affective, behavioral, and cognitive levels.

Participant 9 decided to come back to school when her children became college-age. Therefore, she was a non-traditional student. She finished her undergraduate degree and continued to the master's program to become a social worker. She had been under stress from the schoolwork for the past several years, but she continued striving. In this respect, the issue she focused on had lasted for the past several years. It is speculated that Dosa therapy helped her tune in to what is really important to her and re-prioritize things which she needed to take care of. As a result, she decided to take more time for her family and friends and became less anxious about schoolwork. Participant 9 reported that she used meditation in the past. This experience may have helped her focus on her inner feelings, which Dosa therapy aims to do.

In sum, the effect of intervention with Dosa therapy was observed with four participants out of five who completed the therapy. This result suggests that the intervention with Dosa therapy is effective to treat individuals with anxiety problems (Kazdin, 1982). The fact that the Dosa exercise was the only element which was added in the intervention phase suggests that Dosa therapy produced the effects observed with these participants. This result also gives a basis for generalization of this study, because the positive result from one individual was replicated with three other individuals (Bloom et al., 1995).

Therapeutic Process

The therapeutic process of Dosa therapy was examined by using a task analysis approach. Combining the rational, theoretical understanding with an empirical examination of the actual Dosa task process from five participants, a performance model of Dosa therapy was constructed to describe the observable task performance process of Dosa therapy. Based on this performance model, the possible inner operations involved in generating the observable performance were inferred and the internal operations model was constructed.

The performance process began with starting the practice of the Dosa exercise. Then the participants became aware of the body sensations which occurred during the relaxation process. They included moving sensations of the body, tension and relaxed sensations. By noticing the body sensations which were brought on during the relaxation, the participants came to understand the Dosa task physically. Then the strategies of how to relax their body became their primary focus. They tried some strategies to relax tension in the body. After some trial and error, they identified a useful strategy and eventually attained self-relaxation.

Based on the above performance process, the internal operations process was inferred. It was assumed to proceed as follows. In order to start the practice, the participants needed to accept the Dosa task. Then the participants focused their attention on their body and the body sensations. This operation, which attended internally, enabled the participants to identify the body sensations during the relaxation practice. After this, the participants understood the Dosa task physically and started attending to the operational process to relax specific parts of the body. This operation seemed to be a

prerequisite to engage them in an effort to start relaxing. The participants, then, engaged in self-observation to connect what they did with what kind of movement occurred, evaluated if the movement agreed with the planned movement, and when it did not, changed the operation to decrease the discrepancy. Then the participants identified a useful operation to perform the planned movement and eventually carried out the operation, while monitoring the resultant movement in order to attain self-relaxation.

This operations model describes the internal process which was assumed that the participants went through to attain self-relaxation. From this process, it is speculated that the participants developed a functional Dosa operational system, where they felt that they could move their body more voluntarily and developed a more functional, realistic body image (K. Ohno, personal communication, June 14, 2000). It is assumed that this change in perception of themselves as well as the relaxed state of mind which was brought about by the Dosa exercise might have led them to perceive the situation and the events differently and generated the changes in behavior and in affective and cognitive functioning.

Studies on intentional behaviors and behavior control processes revealed that human behaviors are much more automatic than we think. In other words, the ability to exercise conscious, intentional control over our behavior is actually quite limited (Bargh & Chartrand, 1999; Kirsh & Lynn, 1999; Libet, 1985). Libet (1985) reported a series of studies in which the readiness potentials (RPs) that precede motor actions were recorded using electrodes placed on the subject's scalp. It was revealed that awareness of the intention to initiate the response did not occur until after the onset of the RPs. This result suggested that voluntary movements can be initiated by unconscious cerebral processes

before conscious intention appears. Libet surmised that conscious control may operate to select and modulate the volitional process, instead of initiating it. Kirsh and Lynn (1999) argued that intentions prime behavior for automatic activation and also guide ongoing behavior. Therefore, development of a functional Dosa operational system through Dosa therapy may provide an opportunity to balance controlled and automatic processing in a person's functioning. As for a strategy for relaxation, Participant 7 described her experience such that she tried not to control her body movements and thought about the relaxation in order for it to happen. Other participants also reported that they thought about relaxing and then were able to produce that response. As their reports indicate, voluntary motor control process is intentional as well as automatic. Experientially, they might have needed to relinquish existing, conscious control to some extent in order to let an automatic processing be carried out in order to relax. This experience might have led the participants to become aware of and acknowledge a process which is out of their conscious, volitional control. This experience may make a person suspend judgment based on an existing frame of reference and prime a new response set, which may lead to a new behavior.

Limitations of This Study

Delimitation

In this study, the effect of the intervention with Dosa therapy was examined with individuals with anxiety problems. Therefore, the target problem of this study was an anxiety problem. As a criteria of inclusion and exclusion, it was decided, prior to the

recruitment of the participants, that individuals whose main problem was anxiety would be included and those whose anxiety problem was combined with other psychiatric problems would be excluded. In this respect, the results of this study might apply to the individuals whose main issue is anxiety, without being combined with other psychiatric problems.

The participants in this study were recruited from among female graduate students with an anxiety problem in order to maintain the participants' characteristics as being as homogeneous as possible because of the small sample size. Therefore, the positive effects of Dosa therapy on an anxiety problem may be limited, until further study to female clients. The effect of Dosa therapy could be different with men with an anxiety problem. It is assumed that a gender difference in somatic awareness and openness to somatic information may exist. In other words, women and men might perceive and respond to the somatic sensations differently. Therefore, examining the effect of Dosa therapy with male subjects and comparing the gender difference in the effect of Dosa therapy will be another interesting question for future study.

In this study, the participants were recruited from among graduate students. The investigator visited four social work classes for students in the master's program and advertised this therapy opportunity. It was made clear that they would receive therapy free of charge in return of their participation. They did not receive other incentives such as course credit or monetary compensation. Therefore, they were volunteers who were interested in getting treatment. In other words, they were motivated to receive treatment and achieve therapeutic change. In this respect, it is assumed that their motives were close to what clients might demonstrate who usually appear for therapy.

However, they might not have sought treatment without the investigator's solicitation. They might have been motivated from a slightly different reason. That is, they might have been interested in, besides their own well-being, contributing to the investigation or learning a new therapeutic technique. Therefore, this motivation factor may have enhanced their expectancy to change. Thus, therapeutic change may be more readily achieved than in the actual clinical situation. This characteristic of the participants may affect the generality of this study to a clinical situation (Kazdin, 1998).

Limitation of Single Subject Design

Single subject designs are highly suited to evaluate a particular treatment and to answer research questions regarding if a particular intervention as a whole has therapeutic effects on the client's performances (Kazdin, 1982). However, when it comes to the more subtle questions of outcome, single subject designs raise ambiguities. These questions include what aspects of the treatment are more facilitative for therapeutic change, which treatment is more effective, and for whom is a particular treatment more effective, what kind of client characteristics interact with the effect of treatment, or what outside events might influence treatment outcomes which are sometimes referred to as threats to internal validity (Bloom et al, 1995). However, attempts have been made to overcome these weaknesses. For example, to compare the effectiveness of different treatments, an alternative treatment could be implemented at different points in time. In other words, a clinician could implement one treatment, withdraw it and implement the other treatment. However, the order with which the treatment is implemented may influence the results

and raise the ambiguity of the result (Kazdin, 1982), and it may also raise ethical concerns if a treatment that is producing results is withdrawn.

Single subject designs are especially weak when addressing questions regarding the characteristics of the client that may interact with the treatment effect (Kazdin, 1982). Since single subject design focuses on a few individuals, when a few subjects respond differently, there is no systematic way of determining whether the intervention was more or less effective as a function of the treatment itself or the particular characteristics of the subjects. Factorial designs with a between-group design are more effective in addressing this type of question. Clients are grouped according to variables such as age, diagnosis, socioeconomic status, severity of problem, or other dimensions which appear to be relevant to the effect, and the results are examined as to the effectiveness of treatment interacting with the specific types of clients.

In the present study, one participant did not respond as well as the other four participants. However, the data do not allow the investigator to identify the specific factors which influenced this differential effect of Dosa therapy among the participants. Therefore, this is a limitation of this study due to the research design. However, this limitation could be overcome in a subsequent study through systematic replications of a single-case examination using Dosa therapy with certain types of subjects. If a certain type of subject responds better or more poorly to Dosa therapy than others and there is an obvious relationship between subject characteristics and response to treatment, a consistent pattern of data among different types of subjects may emerge. By accumulating the data, the investigator may be able to tell eventually what type of client responds well or poorly to Dosa therapy.

Generality of the findings from single subject design has been a major source of controversy (Barlow & Hersen, 1984). Bloom et al. (1994) described that generality appears to be "one of the most important limitations of single-system designs" (p. 318) because a participant in a single subject design is susceptible to a problem of sampling representativeness. In other wards, the investigator is not sure if the subject in the study is indeed representative of the client population with the specific problem under investigation. Within single-case demonstrations with one or a few subjects, by definition, there is no immediate possibility to assess generality across subjects. In this respect, between-group research has a better possibility of providing information on the generality of the results than single subject research does (Kazdin, 1982). However, the mere fact of using large numbers of subjects in research, which between-group research usually does, does not automatically ensure the generality of the findings (Sidman, 1960). Because the results are usually evaluated on the basis of *average group* performance and the individual data are seldom examined regarding intervention effects among individuals in the experimental group, the findings by the group analysis alone do not provide the information regarding how many individuals in the experimental group were affected or affected in a meaningful way. Thus, ambiguity about the generality of findings from between-group research remains. On the contrary, if single-subject research demonstrated dramatic effects of a particular intervention on a single subject, like reinforcement-based techniques which have been effective across an extremely wide range of populations, settings, and target problems (Kazdin, 1978), the finding is likely to be more generalizable across individuals than the finding based on the relatively weaker criterion of statistical significance. In fact, there is always a possibility that a statistically

significant difference was obtained due to chance in any between-group investigation (Kazdin, 1982). Therefore, the relative generality of findings from one research approach over another is a complex issue and requires further consideration. In the meantime, it may be better to judge the generality of the findings from single subject research conservatively to avoid an overstatement.

Placebo Effect

Psychotherapy's effect in relation to the placebo effect remains controversial (Lambert, Shapiro, & Bergin, 1986). It has been recognized that the factors such as suggestion and the patient's faith in a treatment have a powerful effect in the healing process. In medicine, the substance which is pharmacologically inert, but produces a positive effect for which it is applied is called a "placebo". Placebos are used to differentiate the effects of an active chemical agent from a psychological agent such as the power of suggestion and the patient's expectancies for change. The notion of placebo effect has been transferred directly to the area of psychotherapy research to account for the changes resulting from such psychological effects as participation in the therapy and the expectations for improvement which were generated from such participation. These general characteristics might be responsible for change rather than other active ingredients which a specific psychotherapy intends to produce. However, in psychotherapy, both the effects of treatments and placebos depend on psychological mechanisms and the factors that account for change have not been well understood. In fact, in psychotherapy, mobilizing the client's expectancy for change partially contributes to the positive outcome of the treatment (Frank, 1973). Therefore, there is no clear basis

for identifying those factors such as participation in the therapy and the client's expectation for change as inert (Lambert et al., 1986). A client's expectancies for improvement and discussion about his/her problem may be active therapeutic factors that influence psychological processes leading to change.

It has been noted by researchers that the purpose of the brain is to anticipate the future (Dennett, 1991; Hyland, 1985; Jacob, 1982; Kirsh, 1990). In this respect, enhancement of expectancy involves the most basic functioning of the brain. Therefore, expectancy effects may not be something which the researcher should control, rather it may be an element which should be maximized for a positive therapeutic impact (Kirsh & Lynn, 1999).

Garfield (1991) pointed out the fact that the comparative outcome studies of psychotherapy have reported relatively few differences in terms of outcome and emphasized that it is important to acknowledge a major role played by common factors which operate across different forms of psychotherapy. However, he also acknowledged the specific factors which can play a significant role in the therapy for particular types of problems. Lambert et al. (1986) also argued that those factors which are common to most therapies such as expectation for improvement, understanding of the problem, and therapist's warmth and attention are central to psychological treatments and play an active role in client improvement and thus, they should not be viewed as theoretically inert or trivial.

For this reason, such factors as the client's expectancies generated by treatment, participation in therapy, and other ingredients common across different therapeutic techniques, are referred to as nonspecific treatment factors or common factors (Kazdin,

1998; Lambert, et al., 1986). The difference among various modalities of psychotherapy may be in the way of maximizing the common factors or the level of functioning a specific therapy focuses on in order to enhance the common factors.

In the present study, a multiple baseline design across subjects of the single subject design was used as a research design by applying the same intervention with different subjects starting at a different time. This specific design allows the investigator to compare the change within the subjects by using a subject as his/her own control. The time lag of introducing the intervention to multiple clients gives the investigator a stronger basis from which to draw a causal conclusion. In fact, the positive effects of the intervention with Dosa therapy were observed with four participants. However, the results do not allow the investigator to differentiate clearly the therapeutic ingredients specific to Dosa therapy from the common factors. In this respect, this is a limitation of this study. However, this does not mean that the effect of this therapy was superficial or temporal nor are the findings of this study insignificant and thus, should be disregarded. Rather, it means that it failed to find incremental effects of Dosa therapy, that is, the effects beyond those attributable to common factors (Lambert et at., 1986). One way to answer this question in the future will be to adopt a control group and compare the effect on outcome measures between the experimental and control groups.

Attrition

Four participants terminated their participation prematurely. One of them, Participant 1, terminated her participation after the first baseline interview because of a time conflict. Three of them, Participants 2, 4, and 5, completed the baseline period and

after the intervention began, they decided to discontinue their participation. The participants who dropped out of the study may be systematically different from other participants who stayed in the study. If this is the case, it is difficult to draw a valid inference about treatment. It could also affect the generality of the results (Kazdin, 1994). Therefore, this investigator addresses this issue here. The characteristics of these three participants are examined first. Then the possible factor(s) which might have contributed to their premature termination is explored individually.

These three participants were not significantly different from other participants who completed the treatment with such demographic characteristics as age, ethnic background, and marital status. In addition, their subjective disturbance level, which was self-rated at the screening session, did not differ from other participants. However, the initial anxiety scores of two of them, Participants 4 and 5, were higher than the scores of other participants who completed the study. In fact, their anxiety scores were above 30 and fell in the clinical anxiety area. Their high anxiety level might have precluded them from attending to the subtle small sensations in their body during the Dosa practice which Dosa therapy requires. If so, Dosa therapy may be suitable to work with individuals whose anxiety level is not as high. However, this is an inference which is drawn from only two subjects. Therefore, further study needs to be conducted to make a conclusive statement.

Participant 2 addressed her anxiety which arises when she is not in control of a situation. As examples, she listed that she experienced fear when she flew and was feeling anxious when letting others make plans and/or arrangements. The incidents she recorded as problem behaviors included that she felt frustrated when her friend kept

talking on the telephone and did not let her end the conversation and her co-worker misunderstood what she said and kept mentioning it after she explained what she really meant. In those incidences, she quickly became very frustrated and angry, "she blew up" in her words. The therapist noticed from the second baseline interview that Participant 2 became less talkative, although she continued her participation. Participant 2 became frustrated with the investigator when the investigator probed the process of how she became angry in relation to her thoughts, feelings, and behaviors. This incident may suggest that she is more goal-oriented and less interested in the process. This proclivity might have made her conclude quickly that the process-oriented conversation was irrelevant or less important or that she was not being understood and thus needed to be questioned, and made her frustrated, perhaps in a similar manner that she experienced in the scenario she described with her co-worker.

After the Dosa practice at the second intervention session, she refused to answer the post-therapy questionnaires. To the investigator's inquiry, she explained that she felt uncomfortable talking about her issue because doing so brought up the same negative feeling as when it occurred. When the therapist suggested termination as an option because she might not be ready to deal with her issue at this point, the investigator may not be the person who can work with her effectively, or this treatment method may not be suitable for her, she smiled for the first time in that session. Her response appeared a sign of relief to the investigator. During the Dosa practice, Participant 2 asked if she was supposed to feel relaxed. After the exercise, she also reported that she usually felt pain in her neck pointing to the bottom of her neck, which was presumably caused by her stiffening her shoulder. However, she was not aware of doing so to make it feel that way.

These accounts suggest that it was difficult for her to focus on her experiencing, which is a process. Participant 2 might have benefited more from a cognitive-behavioral therapy rather than an experiential therapy.

Participant 4 focused on her anxiety and overwhelming feeling caused by her packed schedule. She was working full-time, enrolled as a full-time student, plus doing field instruction for sixteen hours a week. Physically there was not time for socializing with her friends and family. She used to enjoy the kick boxing class at an athletic club to which she belonged and that was a way to relieve stress from work. However, her packed schedule did not allow her to continue the class. The average anxiety score during the baseline period was 31.25 and the one during the intervention period was 25.33. This may have been a sign of decreasing anxiety level. However, the target behavior, the number of times she was worried about study and assignments, did not change much: the average times of worrying during the baseline period was 13.71 a day, whereas the one during the intervention period was 13.29. As for the Dosa practice, she did not notice relaxed sensations during the practice. Instead, she felt relaxed after the practice. She reported that it was difficult for her to relax with Dosa therapy compared to kick boxing. On the session evaluation questionnaire which was administered after the Dosa practice, the average smoothness score was 4.81 and the average positivity score was 4.06 on a 7-point scale. These results indicate that she perceived the therapy session less smooth compared to those participants who completed the study and she did not feel as positive after the practice as did other participants.

Her high anxiety level might have made her engage in an intense, strenuous workout, such as kick boxing, to release her anxiety and stress. As a result, she became

used to the type of physical sensations which accompany strenuous workout. On the contrary, during the Dosa exercise, she was asked to pay attention to subtle physical sensations. Dosa exercise required her to pay attention to the sensations which are very different from what she was used to. Therefore, it might have been difficult for her to feel relaxation sensations during the Dosa exercise (L. Graber, personal communication, October 26, 1999).

Participant 5 focused on her feeling overwhelmed, caused by working as a full-time student and taking care of her husband who has a chronic disease and her children. Since she had to juggle all the roles she was playing, she noticed she tended to hurry her children and become less patient with them. Her goal for this therapy was to become calmer and feel less stress. She also had scoliosis. Since Dosa therapy involves body movement, the investigator became alerted to her physical condition and asked how she felt about doing the Dosa exercise at the beginning of the therapy and again, at the beginning of the intervention period. Participant 5 said that a relaxation exercise may be good for her back problem and showed willingness for the practice.

Her anxiety scores were high and fell in the clinical area. They did not decrease after the intervention began. During the Dosa practice, she felt the relaxation after her body relaxed. On the session evaluation questionnaire administered at the first intervention session, she rated 1 on the dangerous-safe item, indicating that she felt the session was extremely dangerous. The investigator was very concerned about her response because no other participants responded on that scale the way she did. The investigator raised this issue in the following session and Participant 5 explained that she was afraid that the Dosa exercise may have a negative effect on her body. When the

investigator asked if Participant 5 experienced any negative conditions after the first exercise, she denied it and did not object to do the Dosa practice in that session. During the practice in the second session, she asked if she was supposed to feel stretching or relaxation. On the session evaluation questionnaire after this session, she rated 4 on the dangerous-safe scale, indicating that she felt this session was neither dangerous nor safe. Before the next session, she called the investigator and told her of her decision to discontinue her participation. She gave as a reason that she was afraid that Dosa therapy may cause some damage to her body. The therapist made sure that she did not have any negative condition after the two therapy sessions and supported her decision.

From this process, it is assumed that Participant 5's physical condition, scoliosis, made her feel negative sensations when she focused on body sensations. Even if she felt relaxed sensations, it may not be enough to change her perception. A client's openness to therapy is considered as one of the factors which contributes to the positive outcome of the experiential psychotherapy (Greenberg, Elliot, & Lietaer, 1994). In this respect, her accounts suggest that she was hesitant to experience what was happening in her body or even may have been dissociated from what was actually happening in her body. Cioffi (1991) suggested that the subject's cognition influences how he/she perceives the somatic sensations. Therefore, her preexisting physical condition might have set a negative frame of reference when she attended to her body sensations during the Dosa practice and led her to conclude that Dosa practice may lead to a negative effect on her body.

As discussed above, the participants of this study were volunteers who were solicited by the advertisement of a free therapy. If they did not know this opportunity, they might not have sought therapy actively. Moreover, the only thing they would lose by

discontinuing the participation of this therapy was an opportunity of free therapy. These facts might have also affected the attrition rate of this study.

Baseline

Single subject designs involve two phases; baseline and intervention phases. The evaluation of the intervention effect is conducted by comparing these two phases and examining how clear the changes are across phases. Therefore, obtaining a stable baseline is important. Stability refers to the absence of trend and relatively small variability in performance/scores on a measurement (Kazdin, 1982). When a baseline level has no trend or a trend in the direction opposite from that predicted by the intervention, inferences about intervention effects which are to be drawn based on the difference between the baseline and intervention periods is greatly facilitated. On the contrary, when there is a trend which is in the same direction as predicted as a result of the intervention and the observations during the baseline phase fluctuate, stronger intervention effects are required to infer that there is a systematic difference between the baseline and intervention phases.

The number of observations during the baseline in this study were three or four points for the behavior measure and four or five points for other measures. It is relatively small with regard to the number of observations. For example, the baseline of the anxiety measure of Participant 7 showed a trend which is in the same direction as predicted as a result of the intervention. Therefore, it made it difficult for the investigator to conclude that the effect resulted from the intervention. The baseline of the behavior observation of Participant 7 was also problematic. With regard to the direction of the change, it was

desirable: The trend during the baseline was in the opposite direction from what was predicted from the intervention and the trend during the intervention period was in the direction which was predicted by the intervention. However, the average scores were higher during the baseline than the intervention period, which was contradictory to the prediction. Therefore, the result did not allow the investigator to draw a conclusion about the effect of the intervention on Participant 7's behavior. If the baseline was extended, more stable observation could be obtained and perhaps it would illustrate more clearly the pre-intervention condition. This could have allowed the investigator to draw a more confident inference about the effect of the intervention.

Measurement

In order to measure the participants' anxiety level, the clinical anxiety scale (Hudson, 1992; Westhuis & Thyer, 1989) was used. This scale measures the amount of the participants' clinical anxiety. It was selected because it is useful for measuring general anxiety and has fairly high reliability. However, it was found that there are individual differences regarding individuals' tendency to appraise situations as threatening and to respond to those situations with anxiety behaviors (Spielberger, 1966). This reflects individual's trait anxiety which is defined as an individual's proneness to anxiety. On the contrary, state anxiety refers to a transient feeling of anxiety at a given moment in time. Therefore, a person with high trait anxiety has a higher tendency than a low trait anxious person to experience anxiety. The state anxiety reactions of high trait anxious individuals exceed those of low trait anxious counterparts. The drop-outs might have been systematically different on their trait anxiety from those who stayed in the

study. However, the CAS does not provide the information regarding this aspect. If a scale which measures this dimension was used, the data might have provided more information regarding the participants' anxiety.

To measure the participants' somatic awareness during Dosa practice, the questionnaire for somatic awareness was designed based on a previous study (Cioffi, 1991). The participants' somatic awareness was measured regarding three dimensions; the number of sensations noticed by the participant, its degree of noticeability, and subjective unpleasantness. Comparing the average of the first two sessions and the last two sessions, no significant difference was observed on all three dimensions. However, the number of somatic sensations decreased in the last two sessions, which is an opposite direction to the assumed change.

These inconclusive results may be partly attributable to the way in which the participants' somatic awareness was measured. The participants' somatic sensations were recorded after the practice based on their memory. Watching the video-recording, the investigator noticed that during the practice, the participants reported more sensations than they did after the practice. Therefore, the report may not reflect their actual experiences during the practice.

For this reason, the information on the number of sensations noticed during the Dosa practice may not be accurate. Moreover, the noticeability of the sensations was supposed to measure how clearly the participants notice the somatic sensations. It was assumed that as the practice of the Dosa exercise progresses, the participants come to notice fainter sensations more clearly. However, this dimension could have been

confounded with the strength of the sensation. More consideration is required regarding how to measure this dimension accurately.

The number of sensations during the practice, their noticeability, and hedonic valence were averaged including both tension sensations and relaxation sensations. If the sensations had been separated in terms of tension or relaxation, it might have given a different result. Therefore, this issue may need to be dealt with more carefully in future study.

Implications of This Study

Cross-Cultural Relevance

Dosa therapy was developed in Japan and has been used as a psychotherapeutic technique with Japanese clients. Dosa training has been used as a rehabilitation technique with Iranian individuals with Cerebral Palsy and found effective to remedy motor difficulties with those individuals. For example, Dadkhah (1998a) used Dosa training with Iranian children with cerebral palsy and reported the effects on body consciousness. In this study, seven Iranian children with cerebral palsy, ages 8 to 14, had rehabilitation treatment for their motor difficulties using Dosa training. Their levels of private and public body consciousness were measured by a translated version of Body Consciousness Questionnaire (Miller et al., 1981) before and after the training. The results indicated that there was a significant improvement in the children's body consciousness and that the improvement in private body consciousness is larger than that of public body consciousness. Dadkhah (1998b) also used Dosa training for disabled sportsmen with cerebral palsy and reported that their sports performance was improved.

In the present study, the investigator used Dosa therapy with American women. This is the first attempt to use Dosa therapy as a psychotherapeutic technique with individuals who belong to the western culture. The results of the present study suggest the psychotherapeutic efficacy of Dosa therapy to American individuals.

It appears that the Dosa process or motor control process is less affected by the culture to which an individual belongs than are cognitive or affective processes. In fact, the investigator did not find any noticeable differences with regard to the participants' responses during the Dosa practice from those of Japanese clients with whom the investigator worked in the past. Therefore, Dosa therapy, which focuses on a person's Dosa process, may be less influenced by the person's cultural background.

Dosa therapy is task-focused and encourages an individual's autonomy. These underlying values are compatible with American values. This aspect might have facilitated the participants' acceptance of Dosa therapy as a treatment method.

Besides the intervention techniques used in the present study, the therapist and the participants did not share the same cultural background. This usually adds a complexity in the helping relationship (Kadushin, 1990). The therapist acknowledged this difference clearly from the outset of the relationship and asked the participants not to hesitate to ask to repeat what the therapist said whenever they did not understand it. This statement might have shown the therapist's honesty and openness to acknowledge the difference. This might have facilitated a functional therapeutic relationship. The primary focus during the Dosa exercise is on the Dosa process, which mainly involves the body sensations. Those sensations such as tightness, stiffness, lightness or loosening sensations are concrete and easy to empathetically understand even if the therapist comes from a

different culture than the participants. Therefore, this aspect also contributed to establishing a good therapeutic relationship which then facilitated the therapeutic process of Dosa therapy.

Implication for Theories of Social Work

Systems theory is one of the influential theories in social work in understanding human behavior. Systems theory holds a dynamic concept of transaction between various levels of human functioning and is considered to have a potential for an integrative view of the person-in-environment (Germain, 1994). The Dosa process is considered to be an interplay between psychological, neurological, and musculoskeletal systems. In this respect, the view of human functioning in Dosa therapy is compatible with systems theory.

In the present study, an underlying mechanism through which Dosa therapy operates was explored. From the results, it was speculated that obtaining a functional motor control system or Dosa system may have an influence on the person's cognitive, affective functioning, and behavior. This view of mind-body connection is different from the commonly held mind-body connection which operates through the autonomic nervous system. In the latter view, the physiological process of the body is addressed and it is considered that the psychological and the physiological processes are parallel and have reciprocal effects on each other. This view still holds mind/body dualism which has a deep root in Western philosophy since Descartes made a clear distinction between "the mind" and "the body" (Smith, 1985). On the contrary, in Dosa therapy, the phenomenological, subjective aspect of the body is addressed and the body process is

considered to be an aspect of the self functioning. Therefore, this view is more holistic. This is the uniqueness of Dosa therapy. Thus, the investigator believes that this view will facilitate seeing a person as a whole and human functioning more holistically.

Implication for Social Work Practice and Program Development

Anxiety problems are one of the common conditions social workers encounter in a mental health setting. In fact, it was found that approximately twenty-five percent of the general population is affected by the anxiety disorders (Kessler et al., 1994). There are several intervention techniques which are considered to be helpful to work with individuals with anxiety problems. They include a psychodynamic approach, cognitive therapies, systematic desensitization, and pharmacotherapy (Wicks & Parsons, 1984). In the present study, individuals with anxiety problems were treated with Dosa therapy. Four of five participants who completed the treatment showed changes in their behavior and psychological functioning. Therefore, this result suggests that Dosa therapy is effective as an anxiety treatment as well.

In the present study, the intervention was implemented for seven or eight sessions. The length of therapy is fairly short. The intervention in this study can be classified as a brief therapy or time-limited therapy. Brief therapy or short-term therapy is a trend in recent psychotherapeutic practice (Bergin & Gardielf, 1994). A study indicated that about half of the patients who underwent psychotherapy showed significant improvement by the eighth session and that most cases obtain optimal results within about 26 sessions, and that the more difficult cases can be significantly helped within a year (Howard, Kopta, Krause, & Orlinsky, 1986). Once, brief therapy was viewed as superficial.

However, it has been indicated empirically that a good deal of change can be stimulated in a shorter time than previously thought (Bergin & Garfield, 1994). This study suggests that the effect of Dosa therapy begins to emerge at around the third session and by the seventh or eight session the changes in various levels of functioning are secured at least for that time period. Therefore, Dosa therapy can be added to a list of treatment options for brief therapy.

Previously, it was found that mental health services were distributed unequally among the population and that the underprivileged members of the society were excluded from the benefit (Garfield & Bergin, 1994). It was assumed that one of the factors which contributed to this unequal distribution of mental health services was the fact that the traditional psychotherapy lasted longer. Some individuals could not afford therapy if therapy continued for more than one year. The emergence of brief therapies was one of the responses to this situation. Therefore, adding Dosa therapy as an option of Brief therapy will increase opportunities for the underprivileged in getting their mental health needs met.

Moreover, in most modalities of psychotherapy, the primary exchange between the therapist and the client occurs verbally. This means that the client has to have an ability to express themselves verbally. This fact has also limited the population who can benefit from talk therapy. Play therapy and behavior therapy widened the population which psychotherapy can reach. In Dosa therapy, the therapist and the client communicate on the Dosa level, which is a motor control process and primarily non-verbal. Therefore, Dosa therapy may be a possibility for individuals who do not benefit

from talk therapy. This may include infants, individuals with developmental disabilities, and individuals whose experiencing is dissociated from their cognitive process.

When establishing a mental health program in the community, adding Dosa therapy as a treatment option in the program will improve the efficacy of the program by reaching the individuals who otherwise are excluded from the conventional therapy due to financial limitations, their ease with verbal communication, or due to a challenge in their ability.

Implication for Social Work Research

The present study used single subject methodology as a research design to examine the effectiveness of Dosa therapy. Individuals with anxiety problems were recruited from among graduate students and the treatment with Dosa therapy was conducted. In this respect, this study is applied research. Single subject design is a method to systematically observe changes brought about by the intervention in a single client system. This method has been advocated in social work as a method to evaluate social work practice (Bloom et al., 1995; Gingerich, 1988). It has been expected that the empirical evaluation of social work practice facilitates integration of research and practice, secures issues of accountability and establishes a scientific knowledge base for social work practice (Gingerich, 1988). Gingerich (1988) differentiated research from practice evaluation. However, to this investigator, it seems to be rather a conceptual demarcation. Practice evaluation is a kind of research in an applied field to examine what works, how it works, and with whom. In this dissertation study, various measurements were used because the investigator was interested in understanding the effect of the

intervention on the various levels of human functioning and obtaining knowledge about what is happening during the intervention with Dosa therapy. When conducting an evaluation in an actual practice setting, some modifications may need to be made with regard to the number of measurements used, the recording plan of the target behavior, or the duration of the baseline phase. However, these issues are influenced by what research questions the practitioner is asking, not by whether the practitioner intends to evaluate his/her practice or conduct research. Bloom et al. (1995) described nicely that the process of conducting single subject designs can be paralleled with the practice process. This investigator believes that this study gives support for the use of single subject designs in conducting a practice evaluation in social work practice and obtaining empirical knowledge for clinical practice. Single subject designs have some general and methodological limitations (Kazdin, 1982). However, there is no perfect research design. Each research design is a different way to ask a research question (Anastas & MacDonald, 1994; Kazdin, 1982; Tyson, 1992; Videka-Sherman & Reid, 1988). Therefore, this investigator believes the single subject design is a valid, useful research methodology, especially suited to an applied research field.

Single subject designs have been strongly associated with evaluation of the intervention with behavioral and cognitive-behavioral orientations. This may be due to the historical fact that this method was developed through research on operant conditioning (Kazdin, 1994). However, single subject designs should not be restricted to these areas and can be used as a general treatment evaluation. In fact, there have been a few attempts to apply this design to evaluate other types of interventions such as psychoanalysis and paradoxical intervention (Fonagy & Moran, 1990; Kolko & Milan,

1983). In this study, single subject design was used to evaluate Dosa therapy which is an experientially oriented therapy. Therefore, this investigator believes that this study also attests to a broader utility of single subject designs.

The present study used a task analysis approach to examine an underlying mechanism which operates during the treatment with Dosa therapy. A task analysis approach was developed as a means of process research. Although it was expected to augment efforts of outcome research to develop effective practice models, research that adopted this approach was limited in social work (Reid, 1988). This study attests to the utility of a task analysis approach as a means to investigate the therapeutic process. Originally a task analysis approach was used to examine the process of a cognitive, affective task (Greenberg, 1984). In this study, this approach was used to investigate the process of the Dosa task which involves motor control processes. Therefore, this study suggested the possibility of using a task analysis approach with a task other than one that is cognitive or affective.

Directions for Future Research

In the present study, the effectiveness of Dosa therapy was examined with individuals with anxiety problems. The questions which ask if Dosa therapy works for individuals with anxiety problems were examined by using the single subject design. The results provided support for the positive effect of Dosa therapy. As discussed as a limitation of this study, the research design used in this study does not allow the investigator to separate out factors which are specific to Dosa therapy from common

factors. In order to further the understanding of the effectiveness of Dosa therapy, this is another question to be answered.

Another possible direction will be systematic replication of this study. By changing conditions such as client characteristics, settings, or target problems, the investigator can tell to what extent Dosa therapy is effective. As discussed earlier, by accumulating the data from systematic replication, the investigator may be able to tell if Dosa therapy is effective, for whom, or with what type of problem.

The clinical anxiety scale (Hudson, 1992; Westhuis & Thyer, 1989), discussed above, is useful for measuring general anxiety. However, this scale does not provide the information regarding the key components of anxiety, which are behavioral, cognitive, and somatic/physiological. If a scale was used which measures these all components of anxiety, the data would provide the information regarding which component is more influenced by the intervention with Dosa therapy. In other words, it may be possible to expect, eventually, what type of anxiety would respond more to the intervention with Dosa therapy. This will be an interesting question to explore in the future.

In the present study, the therapeutic process of Dosa therapy was analyzed by using a task analysis approach. The Dosa process was focused on for analysis. A performance model, which described how the Dosa task was carried out, was developed and the internal operations model was inferred from the performance model. This is only a beginning to understand how the Dosa process influences a person's psychological functioning. The process of how a person perceives their experiences of Dosa control may be a variable which provides the information to link the experience in Dosa control to change in psychological functioning. By analyzing the person's perception during the

Dosa practice, the effect of Dosa control on psychological functioning will be further understood.

APPENDICES

PPENDIX A

ADVATISEMENT OF PARTICIPANT RECRUITMENT

All MSW Students

The investigator plans to conduct a clinical study on the effectiveness of a psychotherapy called Dosa therapy. Dosa therapy was developed in Japan and has not been used in the U. S. In Japanese, Dosa means motor action. This is a body-oriented therapy and uses bodily movement to bring about a change in psychological functioning. Dosa therapy has been used with individuals with various problems and has been found to be effective for issues and problems which include anxiety, difficulties in public speaking, obesessive-compulsive problems, tension, and difficulties in interpersonal relationships.

In this study, Dosa therapy will be used with female American students to examine the effectiveness of Dosa therapy with a non-Japanese population. Female American students who have worries regarding classes, relationships, and outside responsibilities, or anxiety about a specific thing or situation are being recruited.

The student investigator, Noriko Kubota, who is working on her Ph.D., is a certified clinical psychologist in Japan with a Master's of Social Work degree from the Uniterd States. She will administer Dosa therapy individually free of charge. Therapy sessions will be held once a week for one hour for eight sessions. Sessions will be held at Baker Hall. She will be supervised by an experienced social work clinician.

Individuals who are interested in this free therapy opportunity or who want further information about this study may contact Noriko Kubota at 517-655-6015 between 8am and 9pm or by e-amil at kubotano@pilot.msu.edu.

APPENDIX B

CONSENT FORM FOR SCREENING INTERVIEW

Consent Form

This study is designed to investigate the effectiveness of a type of body-oriented psychotherapy. This psychotherapy is called Dosa Therapy and was developed in Japan. Dosa means motor action in Japanese and uses bodywork to bring about changes in a person's psychological functioning. Dosa therapy has been used successfully for individuals with anxiety problems, obsessive-compulsive problems, excessive tension, and difficulties in interpersonal relationships and in public speaking. In this study, the researcher will examine the effectiveness of Dosa therapy for American students who have an anxiety-related issue/concern.

The purpose of this screening session is (1) for you to receive more information about Dosa therapy and the investigator/therapist, so that you will have sufficient information to decide whether you want to participate in this study, and (2) for the investigator/therapist to obtain detailed information regarding the issue you want to work on. This screening session will last approximately one hour; you will be asked to answer the questionnaires which take approximately 10 minutes and provide information about the issue you want to solve. Based on the information obtained today, the investigator will decide whether you will be a good candidate for this study and report the results to you within a week.

If you decide to participate in this study, we will start the individual sessions immediately. Your participation in this study will last approximately four months; this timeframe includes therapy sessions and an observation period before the therapy begins. The observation phase will take 3 or 4 weeks prior to therapy. We will meet for half an hour once a week. You will be asked to answer the questionnaires and to provide information regarding your anxiety status. The questionnaires will take approximately ten minutes. This information will be used to establish a baseline so that change due to therapy will be measurable. The number of therapy sessions will be seven or eight, ending our sessions on the final week of the semester. We will meet for one hour once a week. The first half of the hour will be spent in discussion and completion of questionnaires. The second half of the hour will be spent for the Dosa exercise to induce change in your issue. The follow-up session will be held once after winter break to complete those questionnaires that you originally filled out.

All interviews will be tape-recorded and all therapy sessions will be videotaped. They will be used to obtain information about the therapy process. They will not be shared with anyone. However, if the therapist is concerned about any part of the therapeutic process, the audio or visual tape may be shared with the social work supervisor of this project. All audio and visual tapes will be destroyed at the completion of the study.

Your participation is voluntary. You may choose not to participate at all, may refuse to participate in certain procedures or answer certain questions, or may discontinue your participation at any time without penalty.

All results will be treated with strict confidence and you will remain anonymous in any report of research findings. Within these restrictions, aggregated group results may be made available to you at your request.

The therapist will work hard to provide an effective therapeutic experience, however, beneficial effects through Dosa therapy are not guaranteed. MSU students can receive counseling services free of charge at the MSU Counseling Center, 207 Student Services Building, 355-8270.

Any questions or concerns about this study may be directed to Noriko Kubota (516-655-6015, kubotano@pilot.msu.edu) or Dr. Rena Harold (432-3733). Any questions about participants' rights as human subjects of research may be directed to the chairperson of the University Committee on Research Involving Human Subjects (UCRIHS): David E. Wright (355-2180).

Please indicate your voluntary agreement to participate by signing below.

Consent

I understand that I am freely participating in this study by Noriko Kubota under advice of Jo Ann McFall and Dr. Rena Harold, School of Social Work. I understand that I am free to decline to answer any question during the session. Furthermore, I understand that my responses will be held in strict confidence and my responses will not be singled out or reported in any way that may be identifiable.

Signed:_____ Date:_____

APPENDIX C

CONSENT FORM FOR THE THREE-WEEK BASELINE GROUP

Consent Form

This study is designed to investigate the effectiveness of a type of body-oriented psychotherapy. This psychotherapy is called Dosa Therapy and was developed in Japan. Dosa means motor action in Japanese. This therapy uses bodywork to bring about changes in a person's psychological functioning. Dosa therapy has been used successfully for individuals with anxiety problems, obsessive-compulsive problems, excessive tension, and difficulties in interpersonal relationships and in public speaking. In this study, the researcher will examine the effectiveness of Dosa therapy for American students who have an anxiety-related issue and concern.

Your participation in this study will last approximately four months including three preliminary sessions, eight therapy sessions and one follow-up session. During the preliminary sessions, you and the therapist/investigator will meet for half an hour once a week for three weeks. You will be asked to answer questionnaires and to provide information regarding your issue/concern. The questionnaires take approximately ten minutes to complete. This information will be used to establish a baseline so that change due to therapy will be measurable. The number of therapy sessions will be eight. You and the therapist/investigator will meet for one hour once a week for 8 weeks. In therapy sessions, the first half of the session will be spent for interview and the second half will be spent for relaxation exercise. The follow-up session will be held one month after therapy ends. In the follow-up sessions, you and the therapist/investigator will meet for half an hour and you will be asked to answer the questionnaires to see how well the therapy results will have maintained. Your total involvement will be 15 weeks.

All interviews will be tape-recorded and all therapy sessions will be videotaped. They will be used to obtain information about the therapy process. They will not be shared with anyone. However, if the therapist is concerned about any part of the therapeutic process, the audio or visual tape may be shared with the social work supervisor of this project. All audio and visual tapes will be destroyed at the completion of the study.

Your participation is voluntary. You may choose not to participate at all, may refuse to participate in certain procedures or answer certain questions, or may discontinue your participation at any time without penalty.

All results will be treated with strict confidence and you will remain anonymous in any report of research findings. Within these restrictions, aggregated group results may be made available to you at your request.

The therapist will work hard to provide an effective therapeutic experience, however, beneficial effects through Dosa therapy are not guaranteed. MSU students can receive counseling services free of charge at the MSU Counseling Center, 207 Student Services Building, 355-8270.

Any questions or concerns about this study may be directed to Noriko Kubota (516-655-6015, kubotano@pilot.msu.edu) or Dr. Rena Harold (432-3733). Any questions

about participants' rights as human subjects of research may be directed to the chairperson of the University Committee on Research Involving Human Subjects (UCRIHS): David E. Wright (355-2180).

Please indicate your voluntary agreement to participate by signing below.

Consent

I understand that I am freely participating in this study by Noriko Kubota under the supervision of Jo Ann McFall and Dr. Rena Harold, School of Social Work. I understand that I am free to decline to answer any question during the session. Furthermore, I understand that my responses will be held in strict confidence and my responses will not be singled out or reported in any way that may be identifiable.

Signed:_____ Date:_____

APPENDIX D

CONSENT FORM FOR THE FROUR-WEEK BASELINE GROUP

Consent Form

This study is designed to investigate the effectiveness of a type of body-oriented psychotherapy. This psychotherapy is called Dosa Therapy and was developed in Japan. Dosa means motor action in Japanese. This therapy uses bodywork to bring about changes in a person's psychological functioning. Dosa therapy has been used successfully for individuals with anxiety problems, obsessive-compulsive problems, excessive tension, and difficulties in interpersonal relationships and in public speaking. In this study, the researcher will examine the effectiveness of Dosa therapy for American students who have an anxiety-related issue and concern.

Your participation in this study will last approximately four months including four preliminary sessions, seven therapy sessions and one follow-up session. During the preliminary sessions, you and the therapist/investigator will meet for half an hour once a week for four weeks. You will be asked to answer questionnaires and to provide information regarding your issue/concern. The questionnaires take approximately ten minutes to complete. This information will be used to establish a baseline so that change due to therapy will be measurable. The number of therapy sessions will be seven. You and the therapist/investigator will meet for one hour once a week for 7 weeks. In therapy sessions, the first half of the session will be spent for interview and the second half will be spent for relaxation exercise. The follow-up session will be held one month after therapy ends. In the follow-up session, you and the therapist/investigator will meet for half an hour and you will be asked to answer the questionnaires to see how well the therapy results will have maintained. Your total involvement will be 15 weeks.

All interviews will be tape-recorded and all therapy sessions will be videotaped. They will be used to obtain information about the therapy process. They will not be shared with anyone. However, if the therapist is concerned about any part of the therapeutic process, the audio or visual tape may be shared with the social work supervisor of this project. All audio and visual tapes will be destroyed at the completion of the study.

Your participation is voluntary. You may choose not to participate at all, may refuse to participate in certain procedures or answer certain questions, or may discontinue your participation at any time without penalty.

All results will be treated with strict confidence and you will remain anonymous in any report of research findings. Within these restrictions, aggregated group results may be made available to you at your request.

The therapist will work hard to provide an effective therapeutic experience, however, beneficial effects through Dosa therapy are not guaranteed. MSU students can receive counseling services free of charge at the MSU Counseling Center, 207 Student Services Building, 355-8270.

Any questions or concerns about this study may be directed to Noriko Kubota (516-655-6015, kubotano@pilot.msu.edu) or Dr. Rena Harold (432-3733). Any questions

about participants' rights as human subjects of research may be directed to the chairperson of the University Committee on Research Involving Human Subjects (UCRIHS): David E. Wright (355-2180).

Please indicate your voluntary agreement to participate by signing below.

Consent

I understand that I am freely participating in this study by Noriko Kubota under the supervision of Jo Ann McFall and Dr. Rena Harold, School of Social Work. I understand that I am free to decline to answer any question during the session. Furthermore, I understand that my responses will be held in strict confidence and my responses will not be singled out or reported in any way that may be identifiable.

Signed:_____ Date:_____

APPENDIX E

QUESIONNAIRE FOR ANXIETY PROBLEM AND BACKGROUND INFORMATION

Questionnaire for Anxiety Problem and Background Information

1. Anxiety Problem

(1) The issue or problem you want to work on with me in Dosa therapy

On a scale from 1 to10, with 1 meaning no trouble at all and 10 meaning you are very disturbed by this issue/problem, where would you put yourself today?

1 2 3 4 5 6 7 8 9 10

No trouble at all Very disturbed

(2) Have you ever had therapy before for this problem or any other concern?

Yes[ ] No[ ]

If yes,

a. What was the issue at the time you sought therapy?

b. What type of therapy did you have?

c. How long or how many sessions did the therapy last?

d. What was the result of your last therapy experience?

Your issue was

Solved Improved Slightly improved Not changed Worsened

e. How much were you satisfied with that result?

Very satisfied Somewhat Slightly Not at all

(3) What made you interested in participating in this study?

2. Background Information

Name:

Address:

Telephone Number:

E-mail Address:

Are you currently pregnant? Yes[ ] No[ ]

Do you plan to get pregnant in a few months? Yes[ ] No[ ]

Have you ever been diagnosed with a psychiatric disorder/condition?
Yes[ ] No[ ]

If yes,

Diagnosis

Medication

APPENDIX F

CLINICAL ANXIEY SCALE

Clinical Anxiety Scale
(Hudson, 1992; Westhuis & Thyer, 1989)

Date: Name:

This questionnaire is designed to measure how much anxiety you are currently feeling. It is not a test, so there are no right or wrong answers. Answer each item as carefully and as accurately as you can by placing a number beside each one as follows.

1 = Rarely or none of the time
2 = A little of the time
3 = Some of the time
4 = A good part of the time
5 = Most or all of the time

1.( ) I feel calm.
2.( ) I feel tense.
3.( ) I feel suddenly scared for no reason.
4.( ) I feel nervous.
5.( ) I use tranquilizers or antidepressants to cope with my anxiety.
6.( ) I feel confident about the future.
7.( ) I am free from senseless or unpleasant thoughts.
8.( ) I feel afraid to go out of my house alone.
9.( ) I feel relaxed and in control of myself.
10.( ) I have spells of terror or panic.
11.( ) I feel afraid in open spaces or in the streets.
12.( ) I feel afraid I will faint in public.
13.( ) I am comfortable traveling on buses, subways or trains.
14.( ) I feel nervousness or shakiness inside.
15.( ) I feel comfortable in crowds, such as shopping or at a movie.
16.( ) I feel comfortable when I am left alone.
17.( ) I feel afraid without good reason.
18.( ) Due to my fears, I unreasonably avoid certain animals, objects or situations.
19.( ) I get upset easily or feel panicky unexpectedly.
20.( ) My hands, arms or legs shake or tremble.
21.( ) Due to my fears, I avoid social situations, whenever possible.
22.( ) I experience sudden attacks of panic which catch me by surprise.
23.( ) I feel generally anxious.
24.( ) I am bothered by dizzy spells.
25.( ) Due to my fears, I avoid being alone, whenever possible.

APPENDIX G

BEHAVIOR RECORD FORM

Behavior Record Form

Behavior to be Observed:		
Date	Number of Times/length of Time Behavior Occurred	Additional Comments

APPENDIX H

EXPERIENCING SCALE

Short Form of Experiencing Scale
(Klein, M., Mathieu, P., Kiesler, D., & Gendlin, D. 1969)

Stage	Content	Treatment
1	External events; refusal to participate.	Impersonal, detached
2	External events; behavioral or intellectual self-description	Interested, personal, self-participation.
3	Personal reactions to external events; limited self-descriptions; Behavioral descriptions of feelings.	Reactive, emotionally involved.
4	Descriptions of feelings and personal experiences	Self-descriptive; associative.
5	Problems or propositions about feelings and personal experiences	Exploratory, elaborative hypothetical
6	Synthesis of readily accessible feelings and experiences to resolve personally significant issues	Feelings vividly expressed, integrative, conclusive or affirmative
7	Full, easy presentation of experiencing; all elements confidently integrated	Expansive, illuminating, confident, buoyant.

Note. Treatment in the table refers to the manner of expression.

APPENDIX I

SELF-EFFICACY SCALE

Self-Efficacy Scale
(Bandura, 1977; Bandura & Jeffery, & Gajdos, 1975)

How certain you are that you can handle your concern/issue effectively now?

10 Completely certain
I know several good ways of handling my concern/issue.
I am sure that I can carry out at least one of the above options to handle my concern/issue.
I am completely sure that I can handle my concern/issue before it gets out of hand.

9

8

7

6

5 Maybe / Maybe not
I have some idea what can be done to handle my concern/issue.
I am not sure if I can carry out one of the options successfully.
It depends on some unforeseen factors that I am not aware of.

4

3

2

1

0 Completely uncertain
I have no idea what helps to cope with my concern/issue.
I am not sure that I am able to do anything to handle my concern/issue.
My concern gets out of hand easily.

APPENDIX J

BELIEF IN PERSONAL CONTROL SCALE

Belief in Personal Control Scale
(Berrenberg, 1987)

This questionnaire consists of items describing possible perceptions you may have of yourself, others, and life in general. Please respond to each of the statements below by indicating the extent to which that statement described your beliefs. For each statement circle the number that best describes your feelings.

1 = Always true
2 = Often true
3 = Sometimes true
4 = Rarely
5 = Never true

1	Getting what you want is a matter of knowing the right people.	1	2	3	4	5
2	My behavior is dictated by the demands of society.	1	2	3	4	5
3	I find that luck plays a bigger role in my life than my ability.	1	2	3	4	5
4	My success is a matter of luck.	1	2	3	4	5
5	Getting what you want is a matter of being in the right place at the right time.	1	2	3	4	5
6	I feel that other people have more control over my life than I do.	1	2	3	4	5
7	There is little that I can do to change my destiny.	1	2	3	4	5
8	I am not the master of my own fate.	1	2	3	4	5
9	Most things in my life I just can't control.	1	2	3	4	5
10	Other people hinder my ability to direct my life.	1	2	3	4	5
11	What happens to me is a matter of good or bad fortune.	1	2	3	4	5
12	Fate can be blamed for my failures.	1	2	3	4	5
13	I am the victim of circumstances beyond my control.	1	2	3	4	5
14	I can control my own thoughts.	1	2	3	4	5
15	I am at the mercy of my physical impulses.	1	2	3	4	5
16	In this life, what happens to me is determined by my fate.	1	2	3	4	5
17	I am the victim of social forces.	1	2	3	4	5
18	The unconscious mind, over which I have no control, directs my life.	1	2	3	4	5
19	I am not really in control of the outcomes in my life.	1	2	3	4	5

APPENDIX K

THERAPY SESSION RECORD FORM

Therapy Session Record Form

Participant:
Session: Date:

Therapist's Procedure	Subject's Dosa Performance/Responses (Therapist's observation)	Subject's kiensthetic sensation, thoughts, feelings (Subject's feedback)

APPENDIX L

QUESTIONNAIRE FOR SOMATIC AWARENESS

Questionnaire for Somatic Awareness
(Cioffi, 1991)

Please write the body sensations you noticed as many as possible while practicing Dosa task.

1. sensation ( ) body part ( )

How clearly did you notice this sensation?

1	2	3	4	5	6	7	8	9	10
Barely				Moderately					Extremely

How did you feel this sensation?

-20	-10		0		+10		+20
Extremely unpleasant			Neither unpleasant or pleasant				Extremely pleasant

2. sensation ( ) body part ( )

How clearly did you notice this sensation?

1	2	3	4	5	6	7	8	9	10
Barely				Moderately					Extremely

How did you feel this sensation?

-20	-10		0		+10		+20
Extremely unpleasant			Neither unpleasant or pleasant				Extremely pleasant

3. sensation ( ) body part ( )

How clearly did you notice this sensation?

1	2	3	4	5	6	7	8	9	10
Barely				Moderately					Extremely

How did you feel this sensation?

-20	-10		0		+10		+20
Extremely unpleasant			Neither unpleasant or pleasant				Extremely pleasant

4. sensation ( ) body part ( )

How clearly did you notice this sensation?

1	2	3	4	5	6	7	8	9	10
Barely				Moderately					Extremely

How did you feel this sensation?

-20	-10		0		+10		+20
Extremely unpleasant			Neither unpleasant or pleasant				Extremely pleasant

APPENDIX M

QUESTIONNAIRE FOR RELXATION STRATEGY

Questionnaire for Relaxation Strategy

1. Did you notice tension during today's practice? Yes [ ] No [ ]
   If yes, what kind of sensation was it?

   In which body part did you feel it?

   How did you feel about it?

2. Did you notice relaxation during today's practice? Yes [ ] No [ ]
   If yes, what kind of sensation was it?

   In which body part did you feel it?

   When during the process did you notice that relaxation?
   [ ] after it happened
   [ ] while it's happening
   [ ] before it happened

   How did you feel about it?

3. Did that relaxation happen automatically without your doing anything or did you do anything to make that relaxation happen?
   [ ] it happened automatically.
   [ ] I did something to make it happen.

   If you did something, please describe what you did to make relaxation happen.

4. Did you have any sensations or feelings in your body beforehand when relaxation starts? Yes [ ] No [ ]
   If yes, how was it like?

   Which body part?

APPENDIX N

SESSION EVALUATION QUESTIONNAIRE

Session Evaluation Questionnaire
(Stiles, 1980; Stiles, Shapiro, & Firth-Cozens, 1990)

Please place an "X" on each line to show how you feel about this session.

1. This session was
(1) difficult easy.
1----2----3----4----5----6----7
(2) worthless valuable.
1----2----3----4----5----6----7
(3) shallow deep.
1----2----3----4----5----6----7
(4) unpleasant pleasant.
1----2----3----4----5----6----7
(5) empty full.
1----2----3----4----5----6----7
(6) ordinary special.
1----2----3----4----5----6----7
(7) rough smooth.
1----2----3----4----5----6----7
(8) dangerous safe.
1----2----3----4----5----6----7

2. Right now I feel
(1) sad happy.
1----2----3----4----5----6----7
(2) afraid confident.
1----2----3----4----5----6----7
(3) uncertain definite.
1----2----3----4----5----6----7
(4) quiet aroused.
1----2----3----4----5----6----7
(5) slow fast.
1----2----3----4----5----6----7
(6) still active.
1----2----3----4----5----6----7
(7) angry pleased.
1----2----3----4----5----6----7
(8) calm excited.
1----2----3----4----5----6----7

APPENDIX O

QUESTIONNAIRE FOR THERAPY EXPERIENCE

Questionnaire for Therapy Experience

1. What change(s) did you notice during this therapy experience with Dosa therapy?

2. What aspect(s) of Dosa therapy do you think was helpful to you in bringing about the above change?

3. What aspect(s) of the therapist's assistance/attitude do you think was helpful to you in bringing about the above change?

4. On a scale from 1 to10, with one meaning no trouble at all and 10 meaning you are very disturbed by that issue/problem, where would you put yourself today?

1 2 3 4 5 6 7 8 9 10
No trouble at all Very disturbed

5. How do you describe the result of this therapy experience with Dosa therapy?
Your issue is

Solved Improved Slightly improved Not changed Worsened

6.How much are you satisfied with this result?

Very satisfied Somewhat Slightly Not at all

7. Do you have any remaining issue(s) and/or new ones? Yes[ ] No[ ]
If Yes, please describe below.

8. Do you know where you can go for additional help or support for these issues or others that may arise? Yes[ ] No[ ]

If No, would you like a referral for additional help? Yes[ ] No[ ]

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