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The Hamilton Rating Scale for Depression and Rhythmic Competency: A Correlational Study

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THE HAMILTON RATING SCALE FOR DEPRESSION AND RHYTHMIC COMPETENCY: A CORRELATIONAL STUDY

by

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THE HAMILTON RATING SCALE FOR DEPRESSION AND RHYTHMIC COMPETENCY: A CORRELATIONAL STUDY

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The purpose of this study was to determine whether there was a relationship between a test of rhythmic competency and the psychomotor retardation subtest of the Hamilton Rating Scale for Depression. Twenty-six endogenously depressed inpatient adults participated in a medication-free pretest. Posttests were administered when a) values reached therapeutic blood levels and b) subjects were clinically observed to have improved. Results demonstrated modest correlations between the Hamilton scale and several subtests of the Rhythmic Competency measure; however, based on this study, the Rhythmic Competency Test could not be recommended as an indicator of psychomotor retardation.

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Michael J. Migliore

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TABLE OF CONTENTS

Table Of Contents - Continued

LIST OF TABLES

CHAPTER I

INTRODUCTION

Movement of the body in an even, consistent and graceful manner is an art admired by many. Movement as simple as walking is as individual as one's fingerprints, with each of us having a unique rhythm or tempo by which we move. For some this rhythm may become abnormally slow and in severe cases may be an indicator of a Major Depressive Disorder (Spitzer & Endicott, 1977).

In recent years researchers have devoted much effort to understanding the Major Depressive Disorder by attempting to develop assessment tools as diagnostic indicators. One area given such emphasis is that of Psychomotor Regulation, which historically has been considered paramount for the diagnosis of major depressive disorder. Until recently, assessments tended to be subjective, imprecise, and inaccurate (Greden & Carroll, 1981). The development of such assessments could theoretically help to diagnose the beginning of a severe depressive episode and ultimately shorten the patient's hospitalization where, in a time of a Prospective Payment System and Diagnostic Related Groups (DRGs) (American Occupational Therapy Association, 1983), this could be critical.

In this paper psychomotor retardation will be examined, and an attempt to develop an objective assessment will be made via the use of a rhythm test of competency and a clinical rating scale.

Research Problem

Psychomotor retardation has been observed by Darwin (1872) who described it in individuals who no longer wish for action but remain motionless and passive. Klein and Davis (1969) using the term "deceleration" described patients with psychomotor retardation as

> unable to respond quickly or spontaneously, either in thought or action. Features closely related to this defect are...slow deliberate labored movements...dragging gait or stupor. Not all patients present all of these features and to some extent the number of such features defines the depth of depression. (p. 177)

The research problem was to attempt the correlation of The Hamilton Rating Scale for Depression (Hamilton, 1960), which was an accepted rating scale and clinical tool, with the Rhythmic Competency Test (Weikart, 1982) which was used to assess one's ability to do movements at prescribed tempos.

Significance of the Problem

Clinicians observe many facets of patients' performance on a daily basis whether it be of a cognitive, motor, or psychological basis. It seemed apparent that the more objective data a clinician could gather the more reliable the diagnosis and the more effective the treatment could be made for the patient. The establishment of another reliable tool that would add further objectivity to a clinician's perspective of the patient was needed.

CHAPTER II

REVIEW OF SELECTED LITERATURE

Neurotransmitters

It is appropriate that the literature review be prefaced with a brief discussion of the biochemical processes of the brain. The conduction between nerves depends on the release of specific chemicals called neurotransmitters. These chemical "messengers" defuse across the synaptic cleft to the post synaptic neuron, where they activate specific sites on the cell membrane called receptors. This causes the post synaptic neuron to either excite the neuron and discharge and conduction to the next synapse, or inhibit the neuron firing. Most synapses have between 1,000 and 10,000 presynaptic nerve endings impinging on them, and whether a neuron fires or not is the result of a large number of influences. The importance of the synapse is that it is a complex structure in biochemical terms, being the site where chemicals can exert actions, some of which must be critically balanced. Thus, the neurotransmitter must be synthesized, stored and released, must act on the receptor, and then must be broken down (Lader, 1983).

Catecholamines is a category of neurotransmitters that include dopamine, which is an important neurotransmitter in the basal ganglia, the limbic system and other parts of the brain. Other neurotransmitters in this group are noradrenaline, which is at most sympathetic postganglionic fibers and in the hypothalamus, and

adrenaline, the major hormone of the adrenal medulla (Lader, 1983).

Neuroanatomical networks which conceivably integrate psychic and motor function in patients with affective disorders have not yet been completely mapped (Greden, Carroll, Feinberg, Haskett & Albala, 1979). The limbic system is a complex, ill-defined group of nuclei and tracts that include the septal area, the hippocampus, the hypothalamus, and parts of the rhinencephalon and cerebral cortex. The limbic system is concerned with integrating emotional and motivational behavior, particularly motor coordination in emotional responses (Lader, 1983).

The nigrostriatal circuitry which plays a major role in motor regulation and the limbic system are connected by a specific pathway where dopaminergic neurotransmitters travel (Barbeau, 1974). This pathway is believed to act in the regulation of emotional behavior especially its motor components (Lader, 1983). These connections provide at least partial explanation for long established clinical observations that many motor movements among patients with Parkinson's disease, Huntington's Chorea, and other conditions with extrapyramidal disturbances were exacerbated by stress, affective disturbances, and emotional upheaval (Greden et al., 1979). Barbeau (1974) stated that clinical manifestations also involve the interplay of GABA-ergic, cholinergic and serotonergic systems and translate into akinesia, rigidity, postural difficulties, tremor, speech fluency disturbances, hypermotility and other psychomotor difficulties.

Psychomotor Retardation

A review of the literature for assessment of psychomotor retardation indicated that until recently determination of psychomotor retardation tended to be subjective, imprecise, and inaccurate (Greden & Carroll, 1981), as previously stated. While there were a few tools such as the Dexamethasone Suppression Test or DST (Carroll, et al., 1981) that assisted with the diagnosis of depression, researchers sought others to corroborate information and further specify results. The HRSD was used by psychiatrists for assessing psychomotor retardation as well as overall level of depression. The psychomotor retardation item was rated from 0 = none to 4 = extreme presence. This scale provided a simple way for assessing a patient's condition, however, it should not be used as a diagnostic instrument (Hamilton, 1967).

In a review of new monitoring techniques for psychomotor function, Greden and Carroll (1981) subdivided psychomotor activity into three areas: the expression of the muscles in the face; the regulation of speech; and gross motor motility. Schwartz, Fair, Salt, Mandel and Klerman (1976a, 1976b) and Schwartz, Ahern, and Brown (1979) studied the muscle regions in the face by placing electrodes in certain areas and then recorded electromyography (EMG) activity during happy, sad, angry, and typical day states. These studies suggested that: each distinct imagery task produces a distinct EMG profile; that these profiles may diagnostically differentiate depressed from nondepressed patients; decreases in

EMG activity of resting corrugator muscles during antidepressant treatment may indicate clinical improvement; and baseline corrugator EMG activity may possibly predict clinical response.

Slow delayed speech has been found in patients with retarded depression (Greden & Carroll, 1981). Szabadi, Bradshaw and Besson (1976) noted that speech time which is the silent interval between phonation was elongated among patients with depression and shortened with clinical improvement. Four control subjects and four unmedicated depressed patients were measured on a counting task, a tapping test, nurses' rating of motility and talkativeness, and the Hamilton Rating Scale for Depression (Hamilton, 1960). Results indicated that phonation and pause times were constant in the normal controls over a two-month period, however, pause times were significantly longer for the unmedicated depressed patients. Following a course of amitriptyline, 100-150 mg a day, pause times were not elongated. Greden et al. (1979) replicated the Szabadi group findings using bipolar as well as unipolar depressives.

A series of studies by Kupfer, et al. (1972) and Kupfer, Weiss, Foster, Detre, Delgado & McPartland (1974) advanced the concept of recording patient activity patterns with motor activated electric equipment. Among their findings, they reported that unipolar depressed patients exhibited significantly more motor activity before treatment than bipolar depressed patients; also as unipolar and bipolar depressed patients improved, the initial motility differences between them disappeared; and activity levels tended to increase with mania and decrease with depression. Using a

wristwatch like a monitor to measure motility, Greden (1983) reported improved psychomotor functioning in a 33 year old bipolar melancholic female in a baseline, treatment, baseline study. The patient demonstrated progressive increases in total motility with more sustained active periods during the daylight hours.

Music and Physiological Tests

The use of music as a diagnostic tool has interfaced with a growing number of sciences, including psychiatry, medicine, biology, physics and of course music therapy (Eagle & Miniter, 1984). Researchers have examined the effects of music which produced physiological changes in including muscle tension (Sears, 1957), galvanic skin response (Peretti & Swenson, 1974; Zimny & Weidenfeller, 1963), heart rate (Barger, 1979; Zimny & Weidenfeller, 1963) and brain wave production (Furman, 1978) while others (Viscencio & Gerber, 1979) studied the effects of hemodialysis on pure-tone thresholds and blood chemistry. In their study on the effects of music, progressive muscle relaxation (PMR) and imagery on adrenal corticosteroids, Rider, Floyd and Kirkpatrick (1985) suggested a connection between music, PMR, and imagery and health to be very likely a mechanism involving a (neural) hypothalamic-frontolimbic loop and a (neuroendocrine) hypothalamic-immunologic loop.

Recently, Sutton (1984) described the development and implementation of a Music Therapy Physiological Test used for analyzing physical movements. He found it to be both as valid (r=.95) and as

reliable (r=.96) as routine physical therapy evaluation of gross and fine motor movements. He suggested that with the rehabilitation population music therapists often encounter discrete physiological behaviors requiring definition.

Rhythm, Tempo and Measurement

Rhythm is the subject of vast theoretical and experimental literature in many fields, including psychology, physiology, physical education and the arts. While a complete review of the literature is not intended by this work, several concepts, beginning with the definition of rhythm are in order. There is general agreement that rhythm is the periodic succession or regular recurrence of events in time which constitute the organization of temporal relationships (Smoll, 1973). In another article (Schwanda, 1968) offered the definition of rhythmic accuracy as "the ability to be in a specific point in space at a specific point in time." Rhythmic ability is the ability to maintain a steady tempo (Schwanda, 1968). In her book on teaching movement and dance, Weikart (1982) combined the concepts of rhythm as the capacity to utilize time, and movement as employing space and labeled this rhythmic competency. She stated that "An individual who is rhythmically competent is able to (a) accurately identify the beat in a musical selection and (b) match the beat through the physical task of walking to it." (Weikart, 1982, p. 5). For purposes of this paper the rhythmic competency definition of Weikart was used.

Theories of Rhythm

Rhythm is both a perceptual and motor function. The perceptual side is evident when one simply listens to a symphony concert for example. Yet these same concert goers may be tapping their toes or hands to the beat of the piece being performed. Thus the motor side is demonstrated. The debate as to the acquisition of rhythm has spawned three major types of theories: the instinctive, the physiological and the motor (Lundin, 1967).

Carl Seashore (1947) believed that rhythmic responses were inherited. He stated that:

> subjective rhythm was deeply ingrained in all, since we have an irresistible tendency to group successions of sound. Further the instinctive tendencies to act in rhythmic groupings was a biological principle of preservative value. (p. 127)

Seashore (1947) believed that a series of sounds uniform in time and stress inevitably became divided, and if one did not have the capacity to perceive these groupings he could not learn an ultimate appreciation for nature and art forms. Heinlein (1929) had previously reported that he studied rhythm responses in children of kindergarten age by asking them to walk in time to music on a runway that electrically recorded their steps, while at the same time recording the beat of the music. Only one of eight subjects showed coordination between the walking movements and the musical beat. Weikart (1982) using 464 first through third graders found only 55% could match the beat prior to any training.

The second theory of rhythm was the physiological. This advanced the thought that the bodily processes were the essential

elements of rhythm, which were the sense of time (Lundin, 1967). Processes of the heartbeat, breathing, and a regular gait were the models for measure. In 1921, Jaques-Dalcroze, who was a proponent of the school of eurhythmics, suggested that music at a tempo greater than the normal heart rate was considered fast, while that considerably below it was taken as slow. Brown (1979) stated that 60-80 bpm could represent an ideal, average or neutral speed of movement with which all others are compared.

The motor theory presented the concept that man perceived rhythms on the basis of a complex neuromuscular system that could be trained to make those responses. Ruckmick (1913) supported this with results of his study which showed subjects' muscular movements to be an essential part of the rhythmic response, and not limited to any particular set of muscles. This indicated that rhythmic response involved the whole body. Coffman (1949) also showed that both eighth graders and college students who received training made "remarkable improvement" over those who received no training. More recently, Weikart (1982) questioned whether rhythmic competency could be attained naturally by youngsters through maturation. She tested 464 first-through-third graders finding that only 55% could match the beat before training, and only 22% could walk to the beat before training. Following a three-month training period 100% of those tested could accurately match the beat and 77% could walk to the beat. She concluded that most children and adults could be successful in rhythmic movement if they experience a sequence of interrelated and increasingly complex rhythmic coordination

activities.

Rhythmic accuracy has been measured via either verbal responses or various motor responses, including finger tapping (Buck, 1936; Seashore, R., 1926), foot-tapping (McCristal, 1933) and locomotor patterns (Ashton, 1953; Lemon & Sherbon, 1934; Simpson, 1959). The first half of this century was used by researchers to debate not only what rhythm was but also how to measure it in a valid and reliable (Seashore, C., 1919; Kwalwesser & Dykema, 1930) manner.

More recently, Schwanda (1968) studied rhythmic abilities and movement performance, and Thackaray (1969) studied children's rhythmic abilities and their measurement, while Smoll (1973) developed what he termed A Rhythmic Ability Analysis System. Darrow (1984) compared rhythm responsiveness of normal and hearing impaired students on beat identification, tempo change, accent as a factor in meter discrimination, melodic rhythm duplication, rhythm pattern duplication, and rhythm pattern maintenance. Results indicated that hearing impaired subjects performed as well or better than normal hearing subjects with regard to beat identification, tempo change accent as a factor in meter discrimination, and rhythm pattern maintenance.

Few studies (Brown, 1979; Hevner, 1936) have used music tempo as a diagnostic tool. Tempo was defined for the purpose of this paper as the speed at which rhythmic competency may take place. Music therapists could be in a favorable position to assess whether or not a patient was rhythmically competent if a diagnostic tool was available that measured response or nonresponse to a given

tempo. Dorhout (1980) examined the music tempo perception differences in school-aged boys and girls. He found that tempo receptive ability seemed to increase with maturation. He also reported that tempo perceptive ability does not differ between boys and girls, but does seem to improve with specialized musical activities. Nielzen and Cesarec (1982) used the same piece of music played at a slow tempo (94 bpm) and a faster tempo (120 bpm) to demonstrate significant perceptual differences between manic and normal subject groups. The manic subject group experienced the faster tempo piece to have greater gaiety and attraction, whereas the normal subjects experienced the faster tempo piece to have more tension and less attraction. Nielzen and Cesarec (1982) concluded that temporal relations are important in the psychopathology of mania.

Stein (1977) used music tempo to assist in diagnosing 16 patients previously diagnosed as schizophrenic. She found that these patients made consistent errors when asked to imitate tempos of music at various speeds. Using a flashing light metronome, she found that errors were greater with slow music, decreased as the music became faster, but tempi faster than that again produced errors. Seven of the 16 cases were reviewed and diagnosed as characteristic of mania. These seven patients were treated with lithium carbonate and within one to two weeks, they behaved and spoke at a normal pace and eventually became outpatients. Up until the time their cases were reviewed all 16 patients were on as much as 2400 mg of phenothiazines daily. Several of the patients spontaneously compared their dislike for slow music to their perception

of the world around them which they also found intolerably slow. Stein (1977) suspected that these aspects pointed to a fault in their perception in tempo that resulted in erroneous imitation. In reviewing Stein's data, Greden et al. (1979) suggested that tempo errors may be a psychomotor feature of mania and might also exist for depressives, and that these findings could potentially be applied diagnostically and longitudinally in clinical trials.

An attempt to use clicks of a metronome to establish a tool to identify psychomotor function was done by Migliore (1984). It was hypothesized that depressed patients with psychomotor retardation would have more difficulty in replicating the tempos given than depressives without psychomotor retardation, normal subjects, and subjects in other diagnostic categories. Subjects were asked to listen to 5 tempos, one from a very slow (40-58 bpm), slow (72-76 bpm), moderate (96-104 bpm), fast (120-132 bpm), and very fast (138-200 bpm) range. They were then asked to replicate the tempos given by adjusting the metronome dial. Migliore reported no significant differences in accuracy between pre- and post-medication trials with depressed subjects, and no significant differences between depressed subjects and normal subjects or subjects in other diagnostic categories. In his discussion, Migliore (1984) concluded that depressed subjects could cognitively process the tempo from the metronome; however, by only being asked to manipulate the dial and not to demonstrate the beat via body movement, the test as it stood was not strong or accurate enough to measure psychomotor function. He suggested that a correlation be made with a long-

standing tool such as The Hamilton Rating Scale for Depression (Hamilton, 1960) and rhythmic movement. The purpose of the present study was to investigate the relationship between movement and rhythmic ability and item #8, psychomotor retardation, from The Hamilton Rating Scale for Depression in adults diagnosed as having a Major Depressive Disorder.

Hypotheses

The hypotheses in null form were that:

1. There would be no significant correlations between mean pre-medication Hamilton scores and mean pretest patting scores at the slow (56 bpm), medium (120 bpm), or fast tempos (168 bpm).

2. There would be no significant correlations between mean posttest Hamilton scores and mean posttest patting scores at the slow, medium or fast tempos.

3. There would be no significant correlations between mean pre-medication Hamilton scores and mean pretest stamping scores at the slow, medium, or fast tempos.

4. There would be no significant correlations between mean posttest Hamilton scores and mean posttest stamping scores at the slow, medium, or fast tempos.

5. There would be no significant correlations between mean pre-medication Hamilton scores and mean posttest marching scores at the slow, medium, or fast tempos.

6. There would be no significant correlations between mean posttest Hamilton scores and mean posttest marching scores at the

slow, medium, or fast tempos.

7. There would be no significant differences between mean pre- and posttest patting scores at the slow, medium or fast tempos.

8. There would be no significant differences between mean pre- and posttest stamping scores at the slow, medium or fast tempos.

9. There would be no significant differences between pre- and post-marching scores at the slow, medium, or fast tempos.

CHAPTER III

DESIGN AND METHODOLOGY

Subjects

Twenty-six endogenously depressed patients, 17 female and 9 male, newly admitted to the inpatient program of the Clinical Studies Unit (CSU) of the Adult Psychiatric Hospital at The University of Michigan were asked to participate in the research study. Subjects ranged in age from 21 to 80 years old. Initial diagnosis was given within 24 hours of admission by the attending psychiatrist. Admission to the hospital was on a voluntary basis. The majority of patients came to the CSU by referral from physicians while others came by way of the Emergency Room at the Medical Center. The CSU offered a multidisciplinary team approach to diagnosis and treatment. The team included a psychiatrist, nurse, activity therapist, social worker and a psychologist.

All subjects were given informed consent forms which educated them as to the general goals of the study as well as the possible risks involved. Consent was obtained from each subject before the study began. It was the policy of the CSU to withdraw subjects from all psychotropic medication and keep them drug free for a two-week period before testing. Blood tests were used to determine when the subject was drug-free. According to Greden et al. (1979) this allowed a more accurate assessment of the true clinical status

of the subject unmodified by drugs. Historically the drug-free period has enabled the CSU staff to conduct many research studies. This study was approved without modification by the Committee on Human Use at The University of Michigan (see Appendix A). Subjects were excluded from the study if they received electroconvulsive therapy during the treatment phase of the hospitalization.

Instruments

The Hamilton Rating Scale for Depression (Hamilton, 1960) is a 17-item scale widely used as a standard rating instrument for depression (Appendix B). For this study only item #8 psychomotor retardation was used. It is rated

0 = absence of psychomotor retardation;

1 = mild, i.e., slight flattening of affect, fixity of expression;

2 = moderate, i.e., monotonous voice, delay in answering questions;

3 = severe, i.e., retardation prolongs interview to a marked degree. Slowness of movement and gait, with diminished associated movement;

4 = extreme, i.e., depressive stupor.

Psychiatrists were trained by rating several actual case presentations of inpatients and then comparing and discussing scores with senior psychiatrists. Inter-rater reliability measures kept at the CSU demonstrated a statistic of r=.88.

Materials

The Rhythmic Competency Test (Weikart, 1982) was used to determine whether subjects could consistently match a beat from a metronome. The test consisted of 3 movements. The first movement was patting hands on knees, the second was standing and marching in place, and the third was marching across the room and back. Two raters independently scored the movements as:

0 = incompetent, i.e., never match the beat;

1 = inconsistent, i.e., match the beat for part of the movement;

2 = competent, i.e., match the beat for all of the movement.

Each subject was also given The Rhythmic Competency Survey (Selinsky, 1984) which was designed to assess music and/or movement experience. Each subject was tested at three tempos, 56, 120, and 168 beats per minute (Migliore, 1984), using a Franz metronome model LM-FB4 with flashing light.

Setting

Testing took place in the Adult Psychiatric Hospital gym which is approximately 20' x 40'. The subject and the experimenter sat close together at a 90° angle while the raters sat 10' away and out of the periphery vision of the subject.

Procedure

The Hamilton Scale was completed on each subject each week by his/her psychiatrist, who was trained to administer and score the

Scale. Each subject was asked to answer questions about items such as work and interest and sleep. The psychiatrist then rated the subjects based on the answers given. The Hamilton score closest to the date that the Rhythmic Competency Test was completed on was used as the correlate.

Inpatient subjects with signed informed consent were notified and scheduled by the research nurse as to the time of testing. All testing took place in the morning in the Adult Psychiatric Hospital gym. Each subject was given a brief explanation as to the purpose of the study and then given the RCS. The subject was then given the Rhythmic Competency Test. They were told that they would hear beats or clicks from a metronome (Seashore, Lewis, & Saetveit, 1939) and to try to match it by patting their hands on their knees for about 30 seconds. Next they were asked to stand and march in place to the same beat. After this they were asked to march across the room again to the same beat. The subject was then asked to do the same three movements to each of the other two tempos. The order of tempo presentation was counterbalanced.

Once the subject began medication treatment and reached therapeutic blood levels, they were scheduled for and given a posttest in the same manner as the pretest. The therapeutic blood levels of tricyclic antidepressants at posttest had to be in the .04 to .40 micrograms/ml range, for lithium carbonate blood levels had to be between .6 and 1.2 ng/ml, and for monoamine oxidase inhibitors there had to be 40% inhibition of monoamine oxidase (Liberman-Lampear, 1984).

Data Collection and Analysis

Two observers who were trained and tested independently rated the subjects on their Rhythmic Competency. The test was dated and matched with the Hamilton score for that week. Pairwise correlations were computed for all raters on each subtest. These reliability estimates were judged sufficiently high so that interrater scores were averaged for each subject in order to get one score for the pretest and one for the posttest for each subtest. The data were also analyzed by use of One-way Analysis of Variance and Analysis of Variance with Repeated Measures. Level of significance for rejection null hypotheses was set at .05.

The following was the order of all analyses performed:

1. Pretest Inter-Rater Reliability Correlation for Patting.
2. Pretest Inter-Rater Reliability Correlation for Stamping.
3. Pretest Inter-Rater Reliability Correlation for Marching.
4. Posttest Inter-Rater Reliability Correlation for Patting.
5. Posttest Inter-Rater Reliability Correlation for Stamping.
6. Posttest Inter-Rater Reliability Correlation for Marching.
7. Nine One-way ANOVAs with repeated measures to compare pretest mean movement scores for patting (3), stamping (3), and marching (3) at the slow, medium, and fast tempos with posttest mean movement scores.
8. One-way ANOVA comparing mean pre- and posttest Hamilton scores.

9. Correlation of pretest Hamilton scores with slow, medium, and fast tempos for patting, stamping and marching.

10. Correlations of posttest Hamilton scores with slow, medium, and fast tempos for patting, stamping, and marching.

11. Correlations of pretest Hamilton scores with type of movement collapsed across all tempos.

12. Correlations of posttest Hamilton scores with type of movement collapsed across all tempos.

13. Correlations of pretest Hamilton scores with type of movement collapsed across all tempos.

14. Correlations of posttest Hamilton scores with type of movement collapsed across all tempos.

15. One-way ANOVA comparing mean movement scores across all tempos for the pretest.

16. One-way ANOVA comparing mean movement scores across all tempos for the posttest.

17. One-way ANOVA comparing mean patting, stamping, and marching scores across all tempos for the pretest and posttest.

18. One-way ANOVA comparing mean tempo scores across all movements for the pretest.

19. One-way ANOVA comparing mean tempo scores across all movements for the posttest.

20. Three correlations of music experience with mean patting (1), stamping (1), and marching (1) scores collapsed across tempos on the pretest.

22. Three correlations of music experience with mean patting (1), stamping (1), and marching (1) scores collapsed across tempos on the posttest.

CHAPTER IV

RESULTS

Results for the pretest were obtained from inter-rater reliability correlations. Table 1 shows the correlation scores between Raters 1 and 2 for patting at slow, medium and fast tempos, indicating a high reliability significant at < .01.

Table 1

Pretest Inter-Rater Reliability Scores for Patting

	Rater 1	P
Pat, Slow, Rater 2	.93	< .01
Pat, Medium, Rater 2	1.00	< .01
Pat, Fast, Rater 2	.84	< .01

Table 2 shows the correlation scores between Raters 1 and 2 for stamping in place at slow, medium and fast tempos, indicating a high reliability significant at < .01.

Table 2

Pretest Inter-Rater Reliability Scores for Stamping

	Rater 1	P
Stamping, Slow, Rater 2	.77	< .01
Stamping, Medium, Rater 2	.82	< .01
Stamping, Fast, Rater 2	.85	< .01

Table 3 shows the correlation scores between Raters 1 and 2 for marching at slow, medium and fast tempos, indicating a high reliability significant at < .01.

Table 3

Pretest Inter-Rater Reliability Scores for Marching

	Rater 1	P
Marching, Slow, Rater 2	.89	< .01
Marching, Medium, Rater 2	.94	< .01
Marching, Fast, Rater 2	.89	< .01

Results for the posttest were obtained from inter-rater reliability correlations. Table 4 indicates the correlation scores between Raters 1 and 2 for patting at slow, medium and fast tempos.

Table 4

Posttest Inter-Rater Reliability Scores for Patting

	Rater 1	P
Patting, Slow, Rater 2	.60	< .01
Patting, Medium, Rater 2	-.05	N.S.
Patting, Fast, Rater 2	.74	< .01

Patting at the slow tempo was significant at < .01 and patting at the fast tempo was significant at < .01. Patting at the medium tempo was not significant. Thus, the reader is advised that data analyses between the medium tempo and patting may be unreliable.

Table 5 shows the correlation scores between Raters 1 and 2 for stamping at slow, medium, and fast tempos indicating a high reliability significant at < .01.

Table 5

Posttest Inter-Rater Reliability Scores for Stamping

	Rater 1	P
Stamping, Slow, Rater 2	.86	< .01
Stamping, Medium, Rater 2	.89	< .01
Stamping, Fast, Rater 2	.66	< .01

Table 6 shows the correlation scores between Raters 1 and 2 for marching at slow, medium and fast tempos indicating a higher reliability significant at < .01.

Table 6

Posttest Inter-Rater Reliability Scores for Marching

	Rater 1	P
Marching, Slow, Rater 2	.67	< .01
Marching, Medium, Rater 2	.90	< .01
Marching, Fast, Rater 2	.87	< .01

Table 7 shows the means and standard deviations of patting, stamping, and marching at tempos slow, medium and fast for the pre- and posttest.

Table 7

Means and Standard Deviations of All Movements at All Tempos

	PRE				POST			
Tempo	Slow		Medium		Fast		Slow		Medium		Fast	
Movement	m.	s.d.	m.	s.d.	m.	s.d.	m.	s.d.	m.	s.d.	m.	s.d.
Patting	1.75	.51	1.88	.43	1.48	.73	1.83	.34	1.94	.16	1.69	.53
Stamping	1.52	.68	1.61	.61	1.52	.64	1.69	.49	1.80	.51	1.54	.58
Marching	1.60	.62	1.35	.78	1.19	.78	1.39	.71	1.60	.66	1.21	.84

A series of One-way Analyses of Variance with repeated measures were used to determine whether there were significant differences between the mean movement scores patting, stamping and marching at the slow, medium, and fast tempos for the pretest vs. the posttest. There were no significant differences between mean pre- and posttest patting scores at the medium tempo. There were no significant differences between mean pre- and posttest patting scores at the fast tempo.

There were no significant differences between mean pre- and posttest stamping scores at the slow tempo. There were no significant differences between mean pre- and posttest stamping scores at the medium tempo. There were no significant differences between pre- and posttest stamping scores at the fast tempo.

There were no significant differences between mean pre- and post marching scores at the slow tempo. There were, however, significant differences between mean pre- and posttest marching scores at the medium tempo ($p < .0009$). There were no significant

differences between mean pre- and posttest marching scores at the fast tempo.

A One-way Analysis of Variance (ANOVA) was used to compare the mean Hamilton Rating Scale for Depression Item #8, psychomotor retardation scores (Hamilton scores) from pre- to posttest.

Table 8

Mean Pre- and Posttest Hamilton Scores

	Mean	s.d.	f	prob
Pretest	1.34	1.00	13.73	.005
Posttest	.50	.58		

Table 8 shows a significant difference ($p < .005$). Hamilton scores were correlated with patting across tempos on the pretest as shown in Table 9. Significant relationships were found on the pretest between the Hamilton Score and the slow ($p < .05$) and the fast ($p < .05$) tempos, but not at the medium tempo.

Table 9

Pretest Hamilton Scores Correlated with Patting Across Tempo

Patting	Hamilton Correlation	P
Slow	-.482	< .05
Medium	-.319	N.S.
Fast	-.468	< .05

There were no significant correlations between the Hamilton scores

and the stamping scores on the pretest. There were also no significant correlations between the Hamilton scores and the marching scores on the pretest. Hamilton scores were correlated with patting, stamping, and marching on the posttest. There were no significant correlations between Hamilton scores and posttest scores for patting, stamping or marching at any of the three tempos. The Hamilton scores were correlated with type of movement collapsed across all tempos for both the pretest and posttest. There was a significant negative correlation between the Hamilton score and the patting score ($p < .01$) for the pretest but not for stamping or marching. There were no significant correlations between Hamilton score and movements for the posttest.

The Hamilton scores were correlated with tempo collapsed across type of movement for the pretest. Table 10 shows that there were significant negative correlations between the pretest Hamilton scores and the medium tempo ($p < .05$) and the fast tempo ($p < .05$) but not at the slow tempo.

Table 10

Pretest Hamilton Scores Correlated with Tempo

	Hamilton Correlation	P
Slow	-.379	N.S.
Medium	-.392	< .05
Fast	-.457	< .05

A One-way ANOVA was used to compare mean movement scores across

all tempos for the pretest. Table 11 shows that there were no significant differences.

Table 11

Mean Pretest Scores for Movement Type Collapsed Across Tempos

	m.	s.d.	p.
Patting	1.70	.47	.10 N.S.
Stamping	1.55	.53	
Marching	1.38	.62	

Table 12 shows that there was a significant difference ($p = .007$) between type of movement across all tempos on the posttest.

Table 12

Mean Posttest Scores for Movement Type Collapsed Across Tempos

	m.	s.d.	p.
Patting	1.82	.26	.007
Stamping	1.67	.43	
Marching	1.39	.65	

A One-way ANOVA was used to compare mean patting, stamping and marching scores across all tempos for the pre- and posttest. There were no significant differences.

A One-way ANOVA was used to compare mean tempo scores on the pretest and mean tempo scores on the posttest collapsed across movement. Table 13 shows that there were no significant

differences.

Table 13

Mean Pre- and Posttest Tempo Scores Collapsed Across Movement

	m.	s.d.	p.
Slow Pre-	1.62	.57	.29 N.S.
Post-	1.63	.45	.11 N.S.
Medium Pre-	1.60	.50	
Post-	1.74	.35	
Fast Pre-	1.40	.61	
Post-	1.48	.51	

Music experience was correlated with mean pretest scores for patting, stamping and marching at the slow, medium and fast tempos. There were no significant relationships.

Music experience was correlated with mean posttest scores for patting, stamping, and marching at the slow, medium and fast tempos. There was a significant correlation between music experience and patting at the medium tempo (p=.01). There were no other significant correlations found.

The results had the following effects on the hypotheses of the study:

1. There would be no significant correlations between mean pretest Hamilton scores an mean pretest patting scores at the slow (56 bpm), medium (120 (bpm), or fast tempos (168 bpm). This was rejected at the .05 confidence level for the slow and the fast tempos but could not be rejected at the medium tempo.

2. There would be no significant correlations between mean

posttest Hamilton scores and mean posttest patting scores at theslow, medium, or fast tempos. This could not be rejected.

3. There would be no significant correlations between mean pretest Hamilton scores and mean pretest stamping scores at the slow, medium or fast tempos. This could not be rejected.

4. There would be no significant correlations between mean posttest Hamilton scores and mean posttest stamping scores at slow, medium, or fast tempos. This could not be rejected.

5. There would be no significant correlations between mean pretest Hamilton scores and mean pretest marching scores at the slow, medium, or fast tempos. This could not be rejected.

6. There would be no significant correlations between mean posttest Hamilton scores and mean posttest marching scores at the slow, medium or fast tempos. This could no be rejected.

7. There would be no significant differences between mean pre- and posttest patting scores at the slow, medium, or fast tempos. this could not be rejected.

8. There would be no significant differences between mean pre- and posttest stamping scores at the slow, medium, or fast tempos. This could not be rejected.

9. There would be no significant differences between mean pre- and posttest marching scores at the slow, medium or fast tempos. This could not be rejected at the slow and fast tempos but was rejected at the .009 confidence level for the medium tempo.

CHAPTER V

DISCUSSION

The purpose of the study was to investigate the relationship between the Rhythmic Competency Test and the psychomotor retardation subtest of the Hamilton Rating Scale for Depression. It was demonstrated that significant negative correlations existed between the Hamilton scale and several subtests of the Rhythmic Competency Test. However, while statistically significant, the relationships were modest, indicating The Rhythmic Competency Test could not be recommended as an indicator of psychomotor retardation with the endogenously depressed population.

The mean pre-medication Hamilton score indicated a mild to moderate presence of psychomotor retardation. The mean pretest Rhythmic Competency scores demonstrated that the subjects performed well. This indicated that the level of psychomotor retardation did not influence the subjects' motor abilities on the Rhythmic Competency Test. In replicating this study, it is suggested that subjects with a more severe level of psychomotor retardation be tested.

The overall breakdown of mean pre- and posttest scores with tempo showed that the subjects performed best at 120 bpm, followed by 56 bpm, and the 168 bpm. Psychomotor retardation had no statistically significant effect on subjects' ability to do the three movements patting, stamping, and marching with regard to

tempo. Researchers as well as clinicians need to examine this phenomenon with respect to the use of different tempos.

The overall breakdown of mean pre- and posttest scores with movement showed that patting was the easiest task for subjects to perform, followed by stamping, and then marching. While there was a significant correlation between the mean pretest Hamilton score and the mean pretest patting scores ($p < .01$), this accounted for 23% of the variance. Thus, when the subjects were in a depressed state, they did have difficulty with the patting movement, but only from a statistical standpoint.

The results indicated that music experience had no statistical bearing in this study. These subjects (9) without music experience performed as well as those subjects (17) with at least one year of music lessons and/or movement experience. These findings are contrary to findings of other studies (Coffman, 1949; Weikart, 1982).

Further research in Music Therapy and Psychiatry should focus on identifying objective and accurate measurement instruments to give perspicuity to Major Depressive Disorders. It is hoped that this paper will be a starting point.

PLEASE ALLOW 30 DAYS FOR APPROVAL OF THIS APPLICATION

APPENDIX A

QUESTIONNAIRE

THIS APPLICATION MUST BE COMPLETED IN TOTO BEFORE YOUR PROPOSAL CAN BE CONSIDERED.

DATE August 27, 1984

TITLE OF PROJECT RHYTHMIC COMPETENCY

PRINCIPAL INVESTIGATOR AND HIS/HER TITLE: Michael Migliore, RMT/Supervisor Adult A.T.

CO-INVESTIGATOR AND TITLE: John F. Greden, M.D./Director, Clinical Studies Unit
Robert Selinsky, TRS

PHONE NUMBER WHERE PRINICPAL INVESTIGATOR MAY BE REACHED: 764-9160

PRINCIPAL INVESTIGATOR'S DEPARTMENT AND ROOM NUMBER: Psychiatry N2736 011 BOX #

IS THIS APPLICATION: NEW x ANNUAL RENEWAL ___ MODIFICATION ___

PREVIOUS AUTHORIZATION DATE BY THIS COMMITTEE: _____

DOES THIS APPLICATION DIFFER IN ANY WAY FROM A PREVIOUS PROPOSAL:

YES ____ NO ____ IF YES, PLEASE EXPLAIN ANY DIFFERENCES:

GRANTING PERIOD (DATES) None

DEADLINE DATE: _____ GRANT NO. _____

COMPLETE NAME AND ADDRESS OF FUNDING AGENCY: _____

WILL ANY RADIOISOTOPES BE ADMINISTERED TO HUMANS?: YES ___ NO X

IF YES, YOU MUST HAVE APPROVAL OF THE SUBCOMMITTEE ON HUMAN USE OF ISOTOPES.

DATE OF APPROVAL: _____ RADIOISOTOPE TO BE USED: _____

DO YOU PLAN TO USE THE FACILITIES OF: THE UPJOHN CENTER FOR CLINICAL PHARMACOLOGY? _____ THE CLINICAL RESEARCH CENTER? _____

ARE THERE ANY INVESTIGATIONAL DRUGS INVOLVED IN THIS RESEARCH? YES ___ NO X

IF YES, HAD FDA APPROVAL BEEN OBTAINED? YES ___ NO ____

NAMES OF INVESTIGATIONAL DRUGS:

BRIEFLY DESCRIBE HUMAN EXPERIMENT TO BE DONE: (THIS MUST BE COMPLETED ON THIS PAGE) WILL NORMAL HEALTHY SUBJECTS OR OTHER PATIENT CONTROLS BE USED? DESCRIBE THE PATIENT POPULATION TO BE USED IN THESE EXPERIMENTS.

This study will attempt to determine whether a teaching tool can improve the rhythmic competency of psychiatrically depressed adult inpatients.

No normal subjects or no other patients controls will be used.

NUMBER OF PATIENTS INVOLVED: 30 SOURCE OF PATIENTS: Clinical Studies Unit-APH/6

COMPENSATION OF PATIENTS: None

SOURCE OF NORMAL SUBJECTS: None

COMPENSATION OF NORMAL SUBJECTS: None

LIST ALL PROCEDURES TO BE DONE FOR THE PURPOSE OF THIS EXPERIMENT THAT WOULD NOT ORDINARILY BE DONE FOR THE TREATMENT OF THE SUBJECTS.

None other than exposure to rhythmic training.

ARE THE COSTS FOR THESE PROCEDURES BORNE BY THE GRANT? N/A

WILL ANY OF THESE STUDIES EXTEND THE PERIOD OF HOSPITALIZATION? No

TOTAL AMOUNT OF BLOOD DRAWN None OVER WHAT PERIOD OF TIME ___

NAME OF ALL DRUGS WITH DOSAGE AND ROUTE OF ADMINISTRATION.

None

WILL THE SUBJECTS BE UNDER THE CARE OF A PHYSICIAN OTHER THAN THE INVESTIGATOR?
Yes

ARE ANY OF THE SUBJECTS PRISONERS? IF YES, PROVIDE NUMBER OF SUBJECTS, COMPENSATION AND CIRCUMSTANCES.

No

ARE ANY OF THE SUBJECTS MINORS? YES___ NO X IF SO, WHAT PROCEDURE WILL YOU USE TO OBTAIN CONSENT FROM PARENT OR LEGAL GUARDIAN?

THE POTENTIAL RISKS OF THE INVESTIGATION TO THE INDIVIDUAL(S) CONSIST OF THE FOLLOWING.

None

THE RIGHTS AND WELFARE OF THE INDIVIDUAL(S) WILL BE PROTECTED AND THE GUARDING OF THE INDIVIDUAL(S) FROM THE RISKS ENUMERATED ABOVE WILL BE ACCOMPLISHED BY:

WHAT IS THE MEDICAL SIGNIFICANCE OF THIS RESEARCH? IF ANY, DESCRIBE THE MEDICAL BENEFIT TO THE PATIENTS INVOLVED.

To determine whether endogenously depressed adults who are psychomotorically retarded can learn and/or improve rhythmic motor functioning after a training period of rhythmic movements while in a medicine free period.

IS THIS A RENEWAL APPLICATION? YES____. NO X
IF YES, WHAT ADVERSE EFFECTS UPON HUMAN SUBJECTS HAVE BEEN ENCOUNTERED IN THE COURSE OF THE INVESTIGATION TO DATE? WERE ANY OF THESE NOT FULLY ANTICIPATED? ARE ALL OF THESE EXPLAINED IN THE CONSENT FORM SIGNED BY SUBJECTS?

PLEASE ALLOW 30 DAYS FOR APPROVAL OF THIS APPLICATION

Michael J Mishlove RMT
INVESTIGATOR(S) SIGNATURE

John J Greden MD
CO-INVESTIGATOR(S) SIGNATURE

August 27, 1984
DATE

ALL INVESTIGATORS MUST SIGN THIS FORM. Robert J Selinsky TRS

YOU MUST ENCLOSE A COPY OF YOUR RESEARCH PROTOCOL WITH THIS APPLICATION.

THE UNIVERSITY OF MICHIGAN
Ann Arbor

September 6, 1984

RE: Rhythmic Competency

INVESTIGATOR: M. Migliore, RMT

Approved without modification

The Committee to Review Grants for Clinical Research and Investigation Involving Human Beings of the University of Michigan Medical Center has met and considered the above named application.

The Committee is composed of fourteen members. Four members of associate professorial to professorial rank represent the Department of Internal Medicine. Four members of professorial rank represent the Departments of Surgery, Anesthesiology, Pediatrics and Obstetrics and Gynecology. Two members of associate professorial rank represent the Departments of Otorhinolaryngology and Psychiatry. Dr. Carl Cohen, Professor of Philosophy and Edward B. Goldman, Hospital attorney serve as representatives of a non-health related discipline. The Reverend Kenneth Phifer serves as the non-University affiliated member. Ann Munro serves as the non-science related representative.

Upon review of the above application the Committee has determined independently that the rights and welfare of the individuals involved in this research are carefully guarded. The methods used to obtain informed consent are appropriate. EACH INVESTIGATOR IS REQUIRED TO INFORM THE COMMITTEE OF ANY CHANGE IN RESEARCH PROTOCOL OR ANY UNANTICIPATED NEGATIVE CHANGE IN THE HEALTH OR BEHAVIOR OF A SUBJECT THAT MAY BE ATTRIBUTABLE TO THE RESEARCH AND TO REPORT THESE PROMPTLY TO THE COMMITTEE. The investigator agrees to retain in his files the written consent form signed by each participant. The investigator agrees to resubmit an application for continued approval of this investigation at intervals no greater than one year from the date of initiation of this research.

Michael D. Migliore, RMT
Investigator's signature

William W. Coon, M.D., Chairman

Peter A. Ward, M.D., Acting Dean
University of Michigan Medical School

Alfred S. Sussman, Ph.D.
Vice President for Graduate Studies and Research
University of Michigan

CURRENT STATUS REPORT------VERSION FOUR----MAY 1, 1982

PATIENT NAME

4444444444444444444444444444444444444444444444444444444444444444444444

THIS FORM SHOULD BE COMPLETED WEEKLY, OR WHEN THERE IS A SIGNIFICANT CHANGE

DATE OF INTERVIEW

THIS IS THE DATE WHEN THE INFORMATION REFERRED TO IN THE DESCRIPTION OF THE PRESENT STATE WAS GATHERED. IT IS ALSO THE DATE REFERRED TO IN THE SECTION ON ITEMS DETERMINED ON DAY OF INTERVIEW. IT WOULD BE BEST IF THE EPISODE FORM WERE FILLED IN ON THE DATE OF THE INTERVIEW. IF IT IS NOT, IT SHOULD BE FILLED OUT WITH REFERENCE TO DETAILED NOTES TAKEN ON THE DATE OF THE INTERVIEW. FORMS FILLED OUT FROM MEMORY ARE OF NO USE, AND SHOULD NOT BE SUBMITTED.

4444444444444444444444444444444444444444444444444444444444444444444444

HOSPITAL ID |__|__|__|__| |__|__|__| |__| 1 8

THIS INFORMATION REFERS TO THE PATIENT'S CONDITION ON (DATE) |__|__| |__|__| |__|__| 9 14

|0|8| 15 16

INTERVIEWER NAME:_____

CODE: |__|__|__|__| 17 20

HAMILTON RATING SCALE FOR DEPRESSION

DEPRESSED MOOD (0-4) |__.__| 21 22
(SADNESS, HOPELESS, GLOOMY, PESSIMISTIC, WEEPING, WORTHLESS.
SEVERELY DEPRESSED PATIENTS MAY "GO BEYOND" WEEPING.) BEHAVIOR: FACIES, POSTURE, WEEPING, VOICE.
0=NOT DEPRESSED; 1=DOUBTFUL, TRIVIAL. BEHAVIORAL EVIDENCE AND FEELING STATES ELICITED ONLY ON DIRECT QUESTIONING.
2=MILD. OCCASIONAL WEEPING. FEELING STATES SPONTANEOUSLY REPORTED;
3=MODERATE. OBVIOUS BEHAVIORAL EVIDENCE. FREQUENT WEEPING. FEELING STATES COMPRISE LARGE PART OF SPONTANEOUS COMMUNICATION.
4=SEVERE. EXHIBITS VIRTUALLY ONLY THESE FEELING STATES IN HIS SPONTANEOUS VERBAL AND NON-VERBAL COMMUNICATIONS.
IN PRESENCE OF SEVERE RETARDATION, JUDGE BY NON-VERBAL BEHAVIOR.

GUILT FEELINGS (0-4) |__.__| 23 24
PATHOLOGICAL GUILT; NOT RATIONALIZING SELF-BLAME.
0=NOT GUILTY; 1=DOUBTFUL, TRIVIAL. SELF-REPROACH, FEELS HE/SHE HAS LET PEOPLE DOWN;
2=MILD. IDEAS OF GUILT SPONTANEOUSLY EXPRESSED, E.G. STATES THAT HE IS A BAD PERSON, DOES NOT DESERVE ATTENTION.
3=MODERATE. BELIEF THAT ILLNESS MIGHT BE A PUNISHMENT. RUMINATIONS OF PAST ERRORS AND SINS. STATES THAT ILLNESS AND SUFFERING ARE DESERVED.
4=SEVERE. GUILTY DELUSIONS. ACCUSES SELF OF IMPOSSIBLE OR UNLIKELY BLAME. ASKS TO BE KILLED BY STAFF BECAUSE OF DELUSIONAL THOUGHTS. MAY HAVE ACCUSING AND DENOUNCING AUDITORY OR VISUAL HALLUCINATIONS, OR CONVICTION OF IMMINENT EXECUTION. MAY BE CONVINCED THAT HIS/HER PRESENCE IS MAKING OTHER PATIENTS ILL.

SUICIDE (0-4) |__.__| 25 26
(RATE FOR FEELINGS OR BEHAVIOR OF THE PAST WEEK)
0=ABSENT. 1=DOUBTFUL, TRIVIAL. IN RESPONSE TO DIRECT QUESTIONING SAYS LIFE IS EMPTY, NOT WORTH LIVING.
2=MILD. RECURRENT THOUGHTS OF DEATH. WISHES HE WERE DEAD, SPONTANEOUSLY GIVEN OR ELICITED ONLY BY QUESTIONING.
3=MODERATE. INCLUDES (2) TOGETHER WITH ACTIVE SUICIDAL THOUGHTS, OR BEHAVIOR INDICATIVE OF SAME, E.G. ISOLATION, ATTEMPTING TO LEAVE WARD, SUICIDE GESTURE OR THREATS OR DISCUSSIONS WITH OTHER PATIENTS.
4=SEVERE..SERIOUS SUICIDE ATTEMPT.

INITIAL INSOMNIA (0-2) |__.__| 27 28
DIFFICULTY GETTING TO SLEEP.AS PART OF PRESENT ILLNESS:DISTINGUISH FROM HABITUAL INSOMNIA.NOTE WHETHER HYPNOTICS ARE USED.
0=ABSENT; 1=MILD,TRIVIAL,INFREQUENT,LESS THAN 30 MINUTES; 2=OBVIOUS AND SEVERE; MORE THAN 30 MINUTES ON MOST NIGHTS.

MIDDLE INSOMNIA (0-2) |__.__| 29 30
PATIENT RESTLESS AND DISTURBED DURING THE NIGHT; WAKING DURING THE NIGHT.
0=ABSENT. RATE 1 IF HYPNOTICS ARE BEING USED. 1=MILD,INFREQUENT
PATIENT COMPLAINS OF BEING RESTLESS AND DISTURBED DURING NIGHT. IF WAKES TO VOID, UNABLE TO RETURN TO SLEEP QUICKLY.
2=OBVIOUS AND SEVERE. PATIENT WAKES ONCE OR MORE AFTER BEING ASLEEP AND HAS DIFFICULTY SLEEPING AGAIN. ANY GETTING OUT OF BED(OTHER THAN TO VOID) RATES 2. SMOKING OR READING IN BED ON WAKING RATES 2.

DELAYED INSOMNIA (0-2) |__.__| 31 32
WAKING IN EARLY HOURS OF THE MORNING AND UNABLE TO FALL ASLEEP AGAIN. NOT OFTEN PRESENT WITHOUT INITIAL AND/OR MIDDLE INSOMNIA.
0=ABSENT; 1=MILD, INFREQUENT. WAKES EARLIER THAN USUAL, BUT LESS THAN 60 MIN OR INFREQUENTLY OVER 60 MIN.
2=OBVIOUS AND SEVERE. WAKES OVER 60 MIN BEFORE THE USUAL TIME AND IS UNABLE TO RETURN TO SLEEP. THIS MUST OCCUR MORE THAN TWICE PER WEEK, OR THE PATIENT SCORES 1 ON THIS ITEM.

WORK AND INTEREST (0-4) |__.__| 33 34
APATHY;LOSS OF PLEASURE AND INTEREST IN WORK,HOBBIES,SOCIAL ACTIVITIES,RECREATIONS.INABILITY TO OBTAIN SATISFACTION.
0=NO DISTURBANCE; 1=DOUBTFUL, TRIVIAL. FEELS INCAPABLE, LISTLESS, IS LESS EFFICIENT. DISTINGUISH FROM FATIGUE AND LOSS OF ENERGY.
2=MILD. HAS TO PUSH HIM/HERSELF TO UNDERTAKE NORMAL ACTIVITIES. LOSS OF INTEREST,SEES NO POINT, GETS LESS SATISFACTION.
3=MODERATE. CLEARLY DECREASED EFFICIENCY. GETS LESS DONE, E.G. AT WORK OR HOME AND SPENDS LESS TIME AT WORKING, USUAL CHORES OR RECREATIONS. IN HOSPITAL RATE 3 IF PATIENT DOES NOT ENGAGE IN ACTIVITIES SPONTANEOUSLY. MARKED LOSS OF PERSONAL TIDINESS.
4=SEVERE. STOPPED WORKING BECAUSE OF PRESENT ILLNESS. DOES NOT SHAVE,BATHE,ETC. DOES NOT TAKE PART IN WARD ACTIVITIES EVEN WHEN URGED TO.

RETARDATION (0-4) |__.__| 35 36
PSYCHOMOTOR. SLOWING OF THOUGHT, SPEECH AND MOVEMENT. OFTEN SHOWS DIURNAL VARIATION.
0=ABSENT; 1=MILD. SLIGHT FLATTENING OF AFFECT, FIXITY OF EXPRESSION;
2=MODERATE. MONOTONOUS VOICE, DELAYED IN ANSWERING QUESTIONS;
3=SEVERE. RETARDATION PROLONGS INTERVIEW TO A MARKED DEGREE. SLOWNESS OF MOVEMENT AND GAIT, WITH DIMINISHED ASSOCIATED MOVEMENT. ABNORMAL TIME TO COMPLETE SELF-RATINGS.
4=EXTREME. DEPRESSIVE STUPOR. INTERVIEW IMPOSSIBLE.

AGITATION (0-4) |__.__| 37 38
PSYCHOMOTOR. IN MILD FORM CAN BE PRESENT TOGETHER WITH MILD RETARDATION. MAY ALSO HAVE MOTOR AGITATION WITH VERBAL RETARDATION. OFTEN SHOWS DIURNAL VARIATION.
0=ABSENT; 1=MILD. FIDGETY AT INTERVIEW. CLENCHING FISTS OR SIDE OF CHAIR. KICKING FEET;
2=MODERATE. WRINGING HANDS, BITING LIPS, PULLING HAIR, GESTURING WITH ARMS , PICKING AT HANDS AND CLOTHES. RESTLESSNESS ON WARD, WITH SOME PACING.
3=SEVERE. INCLUDES FEATURES OF (2). IN ADDITION PATIENT CANNOT STAY IN CHAIR DURING INTERVIEW. MUCH PACING ON WARD.
4=EXTREME. INTERVIEW HAS TO BE CONDUCTED "ON THE RUN". PULLING OFF CLOTHES, TEARING AT HAIR; PICKING AT FACE. ALMOST CONTINUOUS PACING. PATIENT LOOKS BEWILDERED AND DISTRAUGHT.

ANXIETY (PSYCHOLOGICAL) (0-4) |__.__| 39 40
RATE FEATURES WHICH DEVELOPED WITH ILLNESS, NOT THOSE OF PREVIOUS ANXIOUS DISPOSITION. MANY SYMPTOMS INCLUDED HERE: TENSE, UNABLE TO RELAX OR CONCENTRATE, IRRITABLE, EASILY STARTLED, WORRYING OVER TRIVIA (DISTINGUISH FROM DEPRESSIVE RUMINATIONS);PHOBIC SYMPTOMS;APPREHENSION OF IMPENDING DOOM; FEAR OF LOSS OF CONTROL; PANIC EPISODES
0=ABSENT; 1=DOUBTFUL, TRIVIAL, EXPRESSES FEELING STATES ONLY ON DIRECT QUESTIONING,OR HAS FEW SYMPTOMS AND LOW FREQUENCY.
2=MILD. SPONTANEOUSLY EXPRESSES FEELING STATES. GOOD CONTROL AND NOT INCAPACITATING.
3=MODERATE. BEHAVIORAL EVIDENCY OF ANXIETY (DISTINGUISH FROM AGITATION); SPONTANEOUS EXPRESSION OF FEELING STATES, IN SIGNIFICANT NUMBER AND FREQUENCY.
4=SEVERE. FEELING STATES COMPRISE LARGE PART OF SPONTANEOUS VERBAL AND NON-VERBAL COMMUNICATION. PANIC EPISODES OBSERVED.

ANXIETY (SOMATIC) (0-4) |__.__| 41 42
PHYSIOLOGICAL CONCOMITANTS OF ANXIETY. "BUTTERFLIES", INDIGESTION, STOMACH CRAMPS, BELCHING, DIARRHEA, PALPITATIONS. FAINTING, HYPERVENTILATION, PARESTHESIAS, SWEATING, FLUSHING, TREMOR, HEADACHE, BLURRED VISION,URINARY FREQUENCY.
0=ABSENT. 1=DOUBTFUL, TRIVIAL. MINOR SYMPTOMS ELICITED ONLY BY DIRECT QUESTIONING.
2=MILD. SPONTANEOUSLY DESCRIBES SYMPTOMS, WHICH ARE NOT MARKED OR INCAPACITATING.
3=MODERATE. GREATER NUMBER AND FREQUENCY OF SYMPTOMS THAN (2). ACCOMPANIED BY MORE SUBJECTIVE DISTRESS AND SERVE TO IMPAIR NORMAL FUNCTIONING.
4=SEVERE. SYMPTOMS ARE NUMEROUS, PERSISTENT AND INCAPACITATING MUCH OF THE TIME.

GASTRO-INTESTINAL (0-2) |__.__| 43 44
LOSS OF APPETITE AND DRY MOUTH (DIMINISHED SALIVARY FLOW) ARE MORE COMMON AND CHARACTERISTIC THAN CONSTIPATION. HEAVY FEELINGS IN ABDOMEN ALSO OCCUR. DISTINGUISH FROM GI SOMATIC ANXIETY SYMPTOMS.
0=ABSENT. 1=MILD, INFREQUENT. EATS WITHOUT ENCOURAGEMENT BY STAFF. FOOD INTAKE ABOUT NORMAL BUT WITHOUT RELISH. OTHER SYMPTOMS MINOR.
2=OBVIOUS, SEVERE. MARKED REDUCTION OF APPETITE AND FOOD INTAKE. DIFFICULTY EATING WITHOUT STAFF URGING. OTHER SYMPTOMS VARIABLE.

GENERAL SOMATIC (0-2) |__.__| 45 46
FATIGABILITY; FEELS TIRED OR EXHAUSTED; LOSS OF ENERGY; DIFFUSE MUSCULAR ACHINGS IN BACK OR LIMBS; HEAVY, DRAGGING FEELINGS IN ARMS OR LEGS.
0=ABSENT. 1=MILD, INFREQUENT. FEELINGS NOTED BUT NOT MARKED.
2=OBVIOUS, SEVERE. TIRES VERY QUICKLY; EXHAUSTED MUCH OF THE TIME. SPONTANEOUSLY MENTIONS THESE SYMPTOMS.

GENITAL (0-2) |__.__| 47 48
DIFFICULT TO ASSESS, ESPECIALLY IN ELDERLY. RATE ONLY DEFINITE CHANGE ASSOCIATED WITH ILLNESS.
0=ABSENT. 1=MILD, INFREQUENT. LOSS OF LIBIDO; IMPAIRED SEXUAL PERFORMANCE. INCONSTANT AND NOT SEVERE.
2=OBVIOUS, SEVERE. COMPLETE LOSS OF SEXUAL APPETITE; FUNCTIONAL IMPOTENCE SINCE ONSET OF PRESENT ILLNESS.

HYPOCHONDRIASIS (0-4) |__.__| 49 50
MORBID PREOCCUPATION WITH REAL OR IMAGINED BODILY SYMPTOMS OR FUNCTIONS.
0=ABSENT. 1=MILD. SOME PREOCCUPATION WITH BODILY FUNCTIONS AND PHYSICAL SYMPTOMS. TRIVIAL OR DOUBTFULLY PATHOLOGICAL SCORE 1.
2=MODERATE. MUCH ATTENTION GIVEN TO PHYSICAL SYMPTOMS. PATIENT EXPRESSES THOUGHTS OF ORGANIC DISEASE WITH TENDENCY TO "SOMATIZE" CLINICAL PRESENTATION.
3=SEVERE. CONVICTIONS OF ORGANIC DISEASE TO EXPLAIN PRESENT CONDITION, E.G. BRAIN TUMOR, CANCER.
4=EXTREME. (UNCOMMON IN MEN). HYPOCHONDRIACAL DELUSIONS, OFTEN WITH GUILTY ASSOCIATION,E.G. OF SYPHILIS, WORMS EATING HEAD, ROTTING INSIDE; BOWELS BLOCKED AND WILL NEVER FUNCTION AGAIN; INFECTING OTHER PATIENTS WITH BAD ODOR, ETC.

LOSS OF INSIGHT (0-2) |__.__| 51 52
DENIAL OF "NERVOUS" ILLNESS. ATTRIBUTES ILLNESS TO VIRUS, OVERWORK,CLIMATE,PHYSICAL SYMPTOMS. DOES NOT RECOGNIZE,BREAKS WITH REALITY.
0=ABSENT; 1=DOUBTFUL, MILD, SOME DENIAL; 2=OBVIOUS, SEVERE.
DENIES BEING ILL AT ALL; STRONG CONVICTION THAT ILLNESS IS NOT NERVOUS IN ORIGIN.

WEIGHT LOSS (0-2) |__.__| 53 54
SINCE ONSET OF ILLNESS. ESTIMATED IN ABSENCE OF DEFINITE INFORMATION. 0=ABSENT; 1=DOUBTFUL,TRIVIAL. LESS THAN 5 LBS. 2=OBVIOUS, SEVERE. MORE THAN 5 POUNDS.

INITIAL RATINGS WILL BE MADE ON THE BASIS OF THE INSTRUCTIONS GIVEN; THEN, SUBTRACT POINTS FROM INITIAL RATING AS FOLLOWS
1 POINT IF WEIGHT GAIN ≥ 0.5 KG(1 LB)/WEEK FOR ≥ 2 WEEKS.
2 POINTS IF WEIGHT GAIN ≥ 1.0 KG (2 LB)/WEEK FOR ≥ 2 WEEKS, OR IF WEIGHT GAIN ≥ 0.5 KG (1 LB)/WEEK FOR ≥ 4 WEEKS.

HAMILTON TOTAL |__|__|.|__| 55 57

RATER: ______________

														PRE TEST			No	Yes	TRAINING SES.				POST TRAIN TEST					DISCHARGE TEST								
SUBJECT	DATE	1	2	3	4	5	6	HAND	INT	BPM	120	132	X	PAT	STP	MAR	TRN	TRN	1	2	3	4	DATE	\	PAT	STP	MAR	DATE	INT	BPM	120	132	X	PAT	STP	MAR
								R					56											56									56			
								L					120											120									120			
													168											168									168			
								R					56											56									56			
								L					120											120									120			
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								R					56											56									56			
								L					120											120									120			
													168											168									168			

RHYTHMIC COMPETENCY RAW SCORE DATA SHEET

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