

THE EFFECTS OF SWEAT THERAPY ON GROUP
THERAPEUTIC FACTORS AND FEELING STATES

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CHAPTER ONE

INTRODUCTION

Sweat therapy combines group sweating with group psychotherapy. Traditional sweating practices commonly occur in a group setting and often seem very similar to the process and goals of modern group work. The sweating process appears to cause several physical and psychological effects that seem complementary to group work process. Preliminary investigations with sweat therapy have been positive. This study investigates the effects of sweat therapy on group therapeutic factors and feeling states.

Sweating practices have been used throughout the world to help people gain more physical, mental and spiritual health. Examples of different forms of group sweating include the American Indian sweat lodge ceremony, the Finnish sauna, the Russian banya, the Jewish shvitz, the Islamic hammam, and the Japanese mushi-buro. References to group sweating have been cited as old Celtic and Teutonic practices, important in tribes of Africa, Melanasia, Australia, New Guinea, Polynesia, and was practiced by the Aztecs (Vogel, 1970). Group sweating reached its grandest scale in ancient Rome with gigantic structures such as the Diocletian bath, which had a capacity for 6,000 people (Aaland, 1997). One of the oldest examples of a sweat house was recently discovered in Central America. At the center of a Mayan village, archeologists uncovered the remains of what they conclude is the earliest known Mayan sweat house that dates back to 900 B.C. (Wilford, 2001). Today, few modern health clubs are without a sauna or steam room. Bikram Yoga, which combines group sweating with yoga, is becoming increasingly popular and can be found available across the U.S. (McGrane, 2002).

Sweating practices cause several prominent acute physiological effects that have many health benefits and few risks. Hannuksela and Ellahham (2001) completed a meta-analysis using 271 studies completed in the last forty years to examine the physiological effects of sauna bathing. The acute physiological effects include an increase in skin and rectal temperature, sweating, skin blood flow, heart rate, cardiac output, cardiac stroke volume, and systolic blood pressure; and a decrease in diastolic blood pressure, and blood flow to internal organs and muscles. This meta-analysis also found that sauna bathing decreases pulmonary congestion and increases the vital capacity, tidal volume, minute ventilation, and forced expiratory volume of the lungs. Sauna use activates the sympathetic nervous system, the rennin-angiotensin-aldosterone system, and the hypothalamus-pituitary-adrenal hormonal axis. Many hormonal changes have been identified as occurring during sauna use, however, these changes reportedly return to normal levels within a few hours and there are no permanent effects (Hannuksela & Ellahham).

Sauna bathing is beneficial for the prevention and treatment of some lung, heart, and skin problems (Hannuksela & Ellahham, 2001). It promotes deeper sleep, pain relief, muscle relaxation, and has been helpful in treating insomnia, arthritis, and as an adjunct to cancer treatment (Berger & Rounds, 1998). However, it is contraindicated during high-risk pregnancies and for patients with unstable angina pectoris, recent myocardial infarction, severe aortic stenosis, decompensated heart failure, and cardiac arrhythmia (Hannuksela & Ellahham, 2001).

Group sweating has significant social and cultural meanings for people. Much of the work on understanding the psychosocial significance of group sweating has been

completed through descriptive research in the form of ethnographies, drawing on participant observation and personal interviews. Examples include sauna culture in Austria (Gilbert & Prinz, 1986), the hammam in Morocco (Staats, 1994), and the shvitz in the United States (Poulos, 1999). Mikkel Aaland provides a comprehensive overview of the different forms of group sweating, both past and present, used in cultures throughout the world in countries including Russia, Japan, Finland, Mexico, Turkey, Greece, and the United States (1978). These works provide rich descriptions of the cultural importance of group sweating. Physical and mental health, spirituality, and close interpersonal interaction and relaxation are common themes reported for people using the American Indian sweat lodge ceremony (Walkingstick-Garrett & Osborne, 1995), the Finnish sauna (Norden & Prinz, 1986), the Russian bania (Aaland, 1997), and the Islamic hammam (Staats).

The results from several investigations suggest that group sweating has a positive and significant impact on emotional well-being. From the results of research on the psychological effects of sweating procedures, sweating promotes positive effects on sleep, mood and affect, and on hyperactivity. For example, in an experiment with five men, Putkonen & Elomma found that post-sauna sleep was deeper and caused 72% more delta wave sleep than in control recordings (1976). Frankva and Franek (1990) found significant positive effects of sauna baths on immediate mental states for both men and women (N = 100). These effects included improvements in mental satisfaction, energy, relaxation, frustration, and anxiety. Investigating the use of heat treatment for people with anorexia nervosa, Gutierrez et al. report that sauna use has positive effects on hyperactivity, depression, and stress relief (2002). One of the most consistently reported

psychological effects of sweating procedures is that they have a positive effect on positive mood states, especially relaxation and stress relief (Colmant & Merta, 2000; Covalt, 1954; Gutierrez, Vazquez, & Beumont, 2002; Frankva & Franek, 1990; Kuusinen & Markuu, 1972; Sorri, 1988; and Sudakov, Sinitchkin, & Khasanov, 1988).

Sweat therapy combines group sweating with group psychotherapy. The effectiveness of group psychotherapy rests on a solid research foundation (Yalom, 1995). Our best understanding of how group therapy works is with the concept of group therapeutic factors. This concept has evolved over the past 100 years to include between 10 to 12 therapeutic factors. Presently, the most commonly recognized lists of group therapeutic factors are those proposed by Yalom (1995) and Bloch & Crouch (1985). As is found in process research with individual therapy, an emphasis has emerged on the importance of the therapeutic alliance in group therapy which is conceptualized to be analogous to group cohesiveness. The most common technology used in studying therapeutic factors is based on direct and indirect assessment of participants' perception of their experience. Exemplars of this strategy include the Therapeutic Factors Inventory (direct) and the Critical Incidents Questionnaire (indirect) (MacNair-Semands, 2000; Bloch, Reibstein, Crouch, Holroyd, & Themen, 1979). It is recommended that researchers combine these methods with practical variables including absenteeism and group dropout rates (2000).

Results from preliminary research with sweat therapy have been positive, however, as is true with the great majority of the research on the psychological effects of sweating, there is a strong need for replication, with larger samples, better control, and a more effective measurement strategy. To date, only one randomized controlled study has

investigated the baseline effects of combining group sweating with group counseling on interpersonal and intrapersonal outcomes. Colmant et al. investigated the effects of sweat therapy on group dynamics and affect (in press). According to the results, group sweating appeared to accelerate and intensify group counseling processes (Colmant, Eason, Winterowd, Jacobs, & Cashel, in press). Overall, the investigators found that sweat group participants reported more therapeutic factors that had an impact on their group counseling experience, rated sessions as more beneficial, and interacted with stronger group cohesion than non-sweat participants. Therapeutic factors in sweat groups were greater in terms of overall frequency and in the quality of process variables compared to non-sweat groups by self-report and observational measures. It appeared that group sweating promoted the operation of therapeutic factors and served as a stand-alone therapeutic feature. Experiencing the heat was frequently identified by group members as exerting beneficial effects, specifically relaxation, stress relief, and feelings of accomplishment.

There were several limitations in the Colmant et al. (in press) study that are addressed in the present study including number of participants, instrumentation, and control. A main limitation was the small number of participants involved ($N = 24$). Another limitation was based on the instruments used to assess therapeutic factors, (CIQ & GCS). The Critical Incidents Questionnaire (CIQ) is an indirect measure of participant perception and the Group Cohesiveness Scale (GCS) is an observational measure designed to focus on group cohesion. An instrument with psychometric support that directly assesses the presence of all of Yalom's therapeutic factors was not used.

The present study attempts to replicate the Colmant et al. (in press) pilot study on the effects of sweat therapy on group therapeutic factors and feeling states with a larger sample (N = 85), better control including comparable session times between sweat and non-sweat groups, and a more effective measurement strategy by including more sensitive and comprehensive measures (Therapeutic Factors Inventory, Exercise Induced Feeling Inventory, & Subjective Exercise Experiences Scale) and a repeated measures design (pre – during –post – 2 hr post –next day post) with feeling state measures.

Purpose of the Study

The primary purpose of this study was to examine the efficacy of sweat therapy (the combination of group counseling with group sweating) as a group counseling technique by investigating the effects of sweat therapy on group therapeutic factors with a group of college students. The second purpose of this study was to explore the effects of sweat and non-sweat group counseling conditions on feeling states to investigate one aspect of how group sweating functions. The feeling states investigated include Revitalization, Tranquility, Positive Engagement, Physical Exhaustion, Positive Well-Being, Psychological Distress, and Fatigue.

Significance of the Study

If the hypotheses in this study are supported, the significance of this study has important implications for the field of counseling psychology, practitioners and those they serve, multicultural principals, and for future research.

Group treatment is a fundamental aspect of the work of counselors and psychologists. This study may help advance the fields of counseling and psychology by identifying a route toward improving the efficacy of group counseling.

Investigating members' perception of therapeutic factors in group is important because of its association with improved mood and outcome. If group sweating causes a greater activation of the therapeutic factors, then sweat therapy may be especially helpful for groups for whom developing a therapeutic climate is difficult. Furthermore, if group members like it more and get more out of it than typical group counseling, then offering sweat therapy may be a way to attract more people to make use of group counseling services. It would be especially attractive to individuals who are interested in participating in an activity that causes relaxation, stress relief and boosts positive feeling states.

It is important to expand the relevance of interventions to cultures other than just Anglo Euro-Americans (Sue & Sue, 2003). This is frequently advocated to be achieved by identifying and researching indigenous means of helping. Every ethnic group throughout the world has important traditions involving group sweating. This study not only identifies a secular way of incorporating a tradition that most cultures have an important connection to, but by doing so, may encourage others to both, study indigenous forms of healing and to identify other methods of helping that have strong multicultural relevance.

This study may open up other questions and provide a strong rationale for future research in many areas. Improving our understanding of the changes in feeling states produced by group sweating will promote better direction for research on sweat therapy for therapeutic or preventative mental health purposes. If group process is improved by group sweating, are outcomes such as character change and symptom relief also improved? Is less time needed in sweat therapy groups compared to standard groups? Is

sweat therapy better used with certain populations and problems than others? What is the relationship between the neurobiological effects of intense heat exposure and the psychological effects?

Research Questions

1. What differences exist in how college students in the sweat therapy and the non-sweat group counseling conditions perceived group therapeutic factors at the end of each session and at the end of the group experience?
 - a) What differences exist in how college students in the sweat therapy and non-sweat group counseling conditions rated the usefulness of the groups?
 - b) Are there differences in the frequencies of therapeutic factors identified by college students in the sweat therapy and non-sweat group counseling conditions?
 - c) What differences exist in how college students in the sweat therapy and non-sweat group counseling conditions perceived the degree to which group therapeutic factors are present in a given group?
 - d) Is sweating a significant therapeutic factor identified by the sweat therapy participants?
 - e) Are there differences in group member absenteeism for the sweat therapy group participants and non-sweat group counseling participants?
2. What differences exist in how college students in the sweat therapy and group counseling conditions felt emotionally at five time points at session 4, including before the session, during the session, just after the session, two hours after the session, and the day after the session?

a) What differences exist in the feeling states of college students in the sweat therapy and the non-sweat group counseling conditions in terms of positive engagement, revitalization, physical exhaustion, and tranquility?

b) What differences exist in the feeling states of college students in the sweat therapy and non-sweat group counseling conditions in terms of positive well-being, psychological distress, and fatigue?

Research Hypotheses

1. The sweat therapy group participants will perceive a greater availability of therapeutic factors and report sessions to be more beneficial than regular group counseling participants.

a) Sweat therapy participants will report that sessions are more useful than non-sweat participants.

b) Sweat therapy participants will report a greater overall frequency of therapeutic factors than non-sweat participants.

c) The sweating process will be one of the top three most frequent therapeutic features identified by sweat therapy participants.

d) Sweat therapy participants will report the presence of a greater degree of group cohesion and interpersonal learning than non-sweat participants.

e) Participants in the sweat groups will have less participant absenteeism and group dropouts than participants in the non-sweat groups.

2. Sweat therapy group participants will report significant higher scores on positive feeling state subscales than non-sweat participants.

- a) Sweat therapy participants will report a greater degree of positive engagement, revitalization, and tranquility than the non-sweat participants during the session, just after the session, 2 hours after the session, and the day after the session .
- b) Sweat therapy participants will report a greater degree of positive well-being than the non-sweat participants during the session, just after the session, 2 hours after the session, and the day after the session.

Limitations of the Study

Interactions of Different Treatments

When participants receive more than one treatment, it is difficult to determine which treatment caused the effect. The sweat group condition included both group sweating and group counseling. The effects of group sweating alone (no group counseling) were not investigated.

Differences in Counselors

There were six group counselors in this study. Four counselors facilitated both sweat and non-sweat groups and three facilitated either a sweat or a non-sweat group. Although counselors were closely matched based on their level of training, personality or skill characteristics may play a role in between-group differences.

Disadvantages of Self-Reports

One limitation is the use of self-report measures in this study. It allows for the possibility of subjects intentionally or unintentionally giving incorrect responses for the sake of maintaining social desirability. The possibility exists for faking good or bad.

Hypothesis Guessing

Hypothesis guessing occurs when participants try to figure out what the researcher wants and then attempt to either comply or rebel against these presumed expectations.

Participants were aware that there was both a sweat and non-sweat condition and the measures themselves defined aspects of therapeutic factors and feeling states.

Experimenter Expectancies

Expectancies on the part of the experimenters and/or group counselors may have been communicated to participants in subtle ways and influenced results by participants deciding to comply with or rebel to these expectancies.

Experimenter Bias

Two of the experimenters served as coders for the Critical Incidents Questionnaire and may have unintentionally favored the sweat participants when classifying responses.

Assumptions

1. It was assumed that the effects of different counselors played a minimal role in between-group differences regarding measured therapeutic factors and feeling states.
2. It was assumed that participants completed the measures honestly.
3. It was assumed that the instruments and methods used to collect and analyze data, accurately measured therapeutic factors and feeling states.
4. It was assumed that the effects of experimenter bias were minimal.
5. It was assumed that the participants were a sample representative of the general college student population.

Definition of Terms

Sweat therapy: Sweat therapy is the combination of intense heat exposure with psychotherapy or counseling (Colmant & Merta, 1999; 2000; & Colmant, Eason, Winterowd, Jacobs, & Cashel, In Press).

Group Sweating: is social interaction while experiencing psychophysiological reactions to heat exposure. Examples include the American Indian sweat lodge, the Finnish sauna, the Russian bania, and the Islamic hammam.

Therapeutic factor: is an element of group therapy that contributes to improvement in a patient's condition and can be a function of the action's of the group therapist, the other group members, and the patient himself (Crouch, Bloch, & Wanlass, 1994). For the purpose of this study, therapeutic factors will be identified using the Critical Incidents Questionnaire and measured by the Therapeutic Factor Inventory (Bloch, Reibstein, Crouch, Holroyd, & Themen's, 1979; Lese & MacNair-Semands, 2000).

Instillation of Hope: Member recognizes other members' improvement and that the group can be helpful; member develops optimism for his or her own improvement (Bloch & Crouch, 1985; Yalom, 1995).

Universality: Member perceives that other members share similar feelings or problems (Bloch & Crouch, 1985; Yalom, 1995).

Imparting Information: Advice giving by therapist or other members (Yalom, 1995). Bloch and Crouch refer to this therapeutic factor as Guidance (1985).

Altruism: Member gains a positive view of himself or herself through extending help to others in group (Bloch & Crouch, 1985; Yalom, 1995).

The Corrective Recapitulation of the Primary Family Group: Member experiences the opportunity to reenact some critical familial incident with members of the group in a corrective manner (Yalom, 1995).

The Development of Socializing Techniques: Group provides members with an environment that allows the members to interact in a more positive manner (Yalom, 1995). Bloch and Crouch fold this description into their factor of Learning from Interpersonal Action (1985).

Imitative Behavior: Member learns through the observation of others' learning experiences (Yalom, 1995). Bloch and Crouch refer to this therapeutic factor as Vicarious Learning (1985).

Interpersonal Learning: a learning process arising from the experience of interaction and emphasizing the acquisition of new, more adaptive ways of relating to others (Yalom, 1995). Bloch and Crouch refer to this therapeutic factor as Learning from Interpersonal Action (1985).

Group Cohesiveness: Feeling of togetherness provided and experienced by the group. Group cohesion refers to the attraction that members have for their group and for the other members. The members of a cohesive group are accepting of one another, supportive, and inclined to form meaningful relationships in the group. Bloch and Crouch refer to this therapeutic factor as Acceptance (1985).

Catharsis: Member releases feelings about past or here-and-now experiences; this release leads to member feeling better (Bloch & Crouch, 1985; Yalom, 1995).

Existential Factors: Member ultimately accepts that he or she has to take responsibility for his or her own life (Yalom, 1995).

Self-Understanding: Member gains insight into his or her behaviors or cognitions (Bloch & Crouch, 1985).

Self-Disclosure: Member reveals personal information to other group members (Bloch & Crouch, 1985).

Positive Engagement: is a feeling state characterized by the extent to which one feels enthusiastic, happy, and upbeat. For the purpose of this study, positive engagement will be measured by the Exercise-Induced Feeling Inventory (Gauvin & Rejeski, 1993).

Revitalization: is a feeling state characterized by the extent to which one feels refreshed, energetic, and revived. For the purpose of this study, revitalization will be measured by the Exercise-Induced Feeling Inventory (Gauvin & Rejeski, 1993).

Physical Exhaustion: is a feeling state characterized by the extent to which one feels fatigued, tired, and worn-out. For the purpose of this study, physical exhaustion will be measured by the Exercise-Induced Feeling Inventory (Gauvin & Rejeski, 1993).

Tranquility: is a feeling state characterized by the extent to which one feels calm, relaxed, and peaceful. For the purpose of this study, tranquility will be measured by the Exercise-Induced Feeling Inventory (Gauvin & Rejeski, 1993).

Positive Well-being: is a feeling state characterized by the extent to which one feels strong, great, positive, and terrific. For the purpose of this study, positive well-being will be measured by the Subjective Exercise Experiences Scale (McAuley & Courneya, 1994).

Psychological Distress: is a feeling state characterized by the extent to which one feels crummy, awful, miserable, and discouraged. For the purpose of this study,

psychological distress will be measured by the Subjective Exercise Experiences Scale (McAuley & Courneya, 1994).

Fatigue: is a feeling state characterized by the extent to which one feels exhausted, fatigued, tired, and drained. For the purpose of this study, fatigue will be measured by the Subjective Exercise Experiences Scale (McAuley & Courneya, 1994).

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

The main rationale for this study is that people have been using group sweating to promote mental and physical health for thousands of years and the activity seems to fit well with the process and goals of group psychotherapy. Results with preliminary research on sweat therapy have been positive but more research is needed to better understand both the psychological effects of sweating procedures and how group sweating effects group process. This literature review focuses on four areas: The Cultural Validity of Group Sweating; Psychological Effects of Sweating; Group Therapeutic Factors; and, Sweat Therapy and Group Therapeutic Factors. In the Cultural Validity of Group Sweating, the cultural meaningfulness and social significance of group sweating to people throughout the world, past and present is discussed. Secondly, a review of the empirical research on the psychological effects of sweating procedures is presented. Next is a review of research on group therapeutic factors. The history of the therapeutic factor as a concept is given, as well as a review of the present state of the relationship between group therapeutic factors and process and outcome research with group psychotherapy. Measurement issues are also reviewed. Lastly, the preliminary research with sweat therapy and group therapeutic factors is reviewed to support the rationale for the present study.

The Cultural Validity of Group Sweating

The National Center for Complementary and Alternative Medicine (NCCAM) is 1 of the 27 institutes and centers that make up the National Institute of Health (NIH).

NCCAM is encouraging psychologists to study complementary and alternative therapies with a view toward acquiring the evidence needed to determine whether these approaches should be added to standard psychological practice (Dittmann, 2004). However, many, if not most of the practices and systems being evaluated by the NCCAM are ancient cultural practices or what the World Health Organization terms as “Traditional Medicine”. Traditional Medicine (TM) is a comprehensive term to refer both to TM systems such as traditional Chinese medicine, Indian ayurveda and Arabic unani medicine and to various forms of indigenous medicine (WHO, 2002).

Complementary and Alternative Medicine (CAM) has gained popularity over the past decade. CAM is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine (NCCAM, 2004). The percentage of the population which has used CAM at least once is 48% in Australia, 70% in Canada, 42% in the USA, 38% in Belgium and 75% in France (WHO, 2002). In 2000, nearly 16 percent of the community hospitals in the USA offered CAM services, up from 11 percent in 1999 (White House Commission, 2002).

Since the criteria for placing a practice under the umbrella of CAM is whether or not it is empirically supported by scientific research, it is common that lists of CAMs often include innovative techniques juxtaposed ancient practices and alongside practices that are basic to human functioning. For example, lists of alternative medicine commonly include Magnet Therapy, Acupuncture, and Meditation. These three examples of course vary greatly in their cultural meaningfulness and social significance. Magnet therapy is a recent innovative approach used mostly in the United States. Acupuncture has been used for thousands of years among multiple Asian cultural groups

and in the last decade is gaining in popularity in many Western countries. Meditation is universal and transcends culture and time as it is found throughout the world, throughout time.

The cultural meaningfulness and social significance of a practice can be appreciated from both within and among cultural groups. Culture refers to a system of shared beliefs, values, customs, behaviors, and artifacts that members of a society use to cope with their world and with one another, and that are transmitted from generation to generation through learning (Bates & Plog, 1990). Specific beliefs, values, customs, behaviors and artifacts vary in terms of cultural validity, that is, the degree of meaningfulness and social significance that they have is variable. The concept of cultural validity asks: What is a practice used for and how widely is it used? The cultural meaningfulness and social significance of a practice can be appreciated by its prevalence and by the degree to which it is used to promote healing and well-being from both within and among cultural groups. Colmant and Eason (2004) introduce three types of cultural validity for evaluating and categorizing Traditional, Complimentary and Alternative Medicine practices. The three types are a trilogy called TOP Validity: Transcendental, Omnicultural, and Perennial validity. A practice with strong omnicultural validity means that the practice is present in many cultures. The virtue of omnicultural validity is that it indicates the degree to which a practice has basic human appeal rather than culturally-defined appeal alone. A practice with strong perennial validity means that it has stood the test of time. The virtue of perennial validity is that it indicates a utility of the practice. Transcendental practices (TP) are fundamental to the human experience. These practices are fundamental in that they are basic to being human and can be found present in

cultures throughout the world integrated with rich historical symbolism and rituals. One aspect of these practices is that they are both contemporary and ancient. Like Jung's concept of the Archetype, these practices transcend culture and time. TPs are rooted in the unconscious and are structured by underlying psychobiological features. These practices are both the result of and in turn influence the evolution of society. While they continue to reappear throughout the ages in different forms, often reflecting their respective cultural time and place, their essence remains central. TP's are grounded in human unconscious and neurobiology, yet often represent the height of human intelligence, creativity, and wisdom. In specific forms, these practices have been cultivated for the purpose of promoting psychological growth and healing. Examples of transcendental practices include art, dance, music, prayer, sport and exercise, interpersonal interaction, writing and group sweating.

Sweating practices have been used throughout the world to help people gain more physical, mental and spiritual health. Examples of different forms of group sweating include the American Indian sweat lodge ceremony, the Finnish sauna, the Russian banya, the Jewish shvitz, the Islamic hammam, and the Japanese mushi-buro. References to group sweating have been cited as old Celtic and Teutonic practices, important in tribes of Africa, Melanisia, Australia, New Guinea, Polynesia, and was practiced by the Aztecs (Vogel, 1970). Group sweating reached its grandest scale in ancient Rome with gigantic structures such as the Diocletian bath, which had a capacity for 6,000 people (Aaland, 1997). One of the oldest examples of a sweat house was recently discovered in Central America. At the center of a Mayan village, archeologists uncovered the remains of what they conclude is the earliest known Mayan sweat house that dates back to 900 B.C.

(Wilford, 2001). Today, few modern health clubs are without a sauna or steam room. Bikram Yoga, which combines group sweating with yoga, is becoming increasingly popular and can be found available across the U.S. (McGrane, 2002).

“Sweat bathing” is the more common term used to classify different forms of activities using sweating (Aaland, 1997; Vogel, 1970). While, to bathe, is one reason many people participate in sweating activities, there are several other prominent biopsychosocial effects. Colmant and Merta (2000) contend that the term “group sweating” does better to include the main elements of people sweating together which seem to be social interaction while experiencing psychophysiological reactions to heat exposure. Much of the work on understanding the cultural validity of group sweating has been completed through descriptive research in the form of ethnographies, drawing on participant observation and personal interviews. Examples include sauna culture in Austria (Gilbert & Prinz, 1986), the hammam in Morocco (Staats, 1994), and the shvitz in the United States (Poulos, 1999). The most comprehensive overview of the different forms of group sweating, both past and present, used in cultures throughout the world was completed by Mikkel Aaland. Aaland spent three years traveling the world studying different forms of sweating in countries including Russia, Japan, Finland, Mexico, Turkey, Greece, and the United States to complete his 1978 book titled, Sweat: The Illustrated History and Description of the Finnish Sauna, Russian Bania, Islamic Hammam, Japanese Mushi-Buro, Mexican Temescal, and American Indian Sweat Lodge. These works provide rich descriptions of the cultural importance of group sweating. Physical and mental health, spirituality, close interpersonal interaction and relaxation are common themes reported for people using the American Indian sweat lodge ceremony

(Walkingstick-Garrett & Osborne, 1995), the Finnish sauna (Norden & Prinz, 1986), the Russian bania (Aaland, 1997), and the Islamic hammam (Staats). According to the Finnish Sauna Society (2004), the common purposes among different cultures using sweating procedures include religious ceremonies, healing illnesses, bodily cleaning, relaxation, and social life.

This review discusses the cultural validity of group sweating by describing its use around the world including three major ancient cultures (Mayans, Greeks, and Romans), the Russian bania and the Islamic hammam. An overview of the American Indian sweat lodge and the Finnish sauna is also provided. An emphasis is placed on the American Indian sweat lodge and Finnish Sauna because these two specific forms of group sweating have had a direct influence on the development of sweat therapy. In no way is the disproportionate depth of reviews (including leaving many forms out all together) intended to reflect any superiority of one form of group sweating over another.

The Ancients

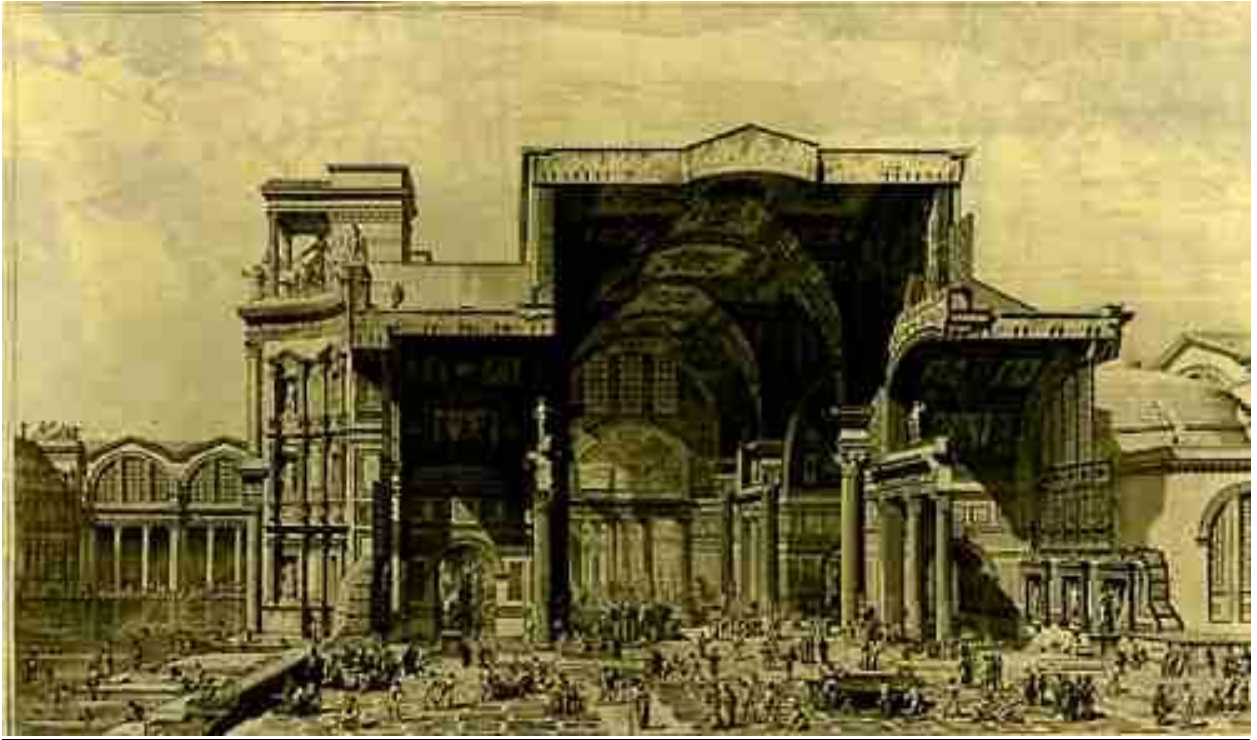


Figure 1. Rome 305 AD. The Diocletian bath had a capacity for 6,000 bathers. Reproduced with permission from Mikkel Aaland.

As described above, one would be hard pressed to find a culture or time in which group sweating was not common practice. A substantial amount of archeological work has focused on the ancient Mayans, Greeks and Romans. We know that group sweating was a common form of social and recreational activity in these three cultures and that there are links from these cultures to subsequent ones (Aaland, 1997).

Before Rome's baths, there was the Mayan sweat house. At the center of a Mayan village, archeologists recently uncovered the remains of what they conclude is the earliest known Mayan sweat house that dates back to 900 B.C. (Wilford, 2001). According to archeologist, Dr. Hammond from Boston University, the placement of the sweat house at the central plaza reflected its importance in community life. (2001). Dr.

Hammond said, “The sweat houses probably had several purposes: the simple cleansing of the body, the purging of nasty things in the body and opening of communications with the supernatural” (Wilford, 2001, p. 5). Dr. Hammond said that the sweat house, though small and simple, bore clear ancestral resemblances to the swank bathhouses found at sites of such classic Maya cities as Tikal and Piedras Negras in Guatemala. Reportedly, the house also seems similar to later sweat lodges of American Indian cultures in what are now the United States and Canada (Wilford, 2001). While the Mayans likely influenced the later American Indian sweat lodge, the Greeks and Romans influenced the Islamic hammam, Russian banya and Finnish sauna. Aaland describes how the Greeks and Romans influenced others (1997, *Mass Bathing: The Roman Balnea and Thermae* section, ¶ 5):

The thermae, from the Greek word for "heat," became the pet project for all Roman emperors following Agrippa. Each tried to out-do his predecessor, making his bath more spacious, more splendid, more popular. Principle baths, named in honor of the emperors who had them built, were: Nero in 65 AD, Titus in 81 AD, Domitian in 95 AD, Commodus in 185 AD, Caracalla in 217 AD, Diocletian in 305 AD, and Constantine in 315 AD.

To insure their popularity, and the emperor's notoriety, entrance fees were ridiculously low, if not free. Without generating enough revenue to maintain themselves, the thermae had to be subsidized. Emperors, of course, enjoyed their own baths, and some were said to have bathed seven or eight times a day.

The thermae sprung up everywhere in the Roman Empire, from sandy African deserts to the snowy Alps, and as far north as England. Pompeii has one

of the best preserved thermae. A sign announcing its opening is still legible on a wall: "There will be a dedication of the baths and the public is promised a slaughter of wild beasts, athletics, awnings to shade the sun, and perfumed sprinklings."

Some of the thermae were large enough to accommodate thousands of bathers. The Diocletian bath had a capacity for 6,000 bathers (see Figure 1). Such mass bathing could have only been possible with significant advances in Greek and early Roman technology.

Roman engineers devised the hypocaust method to heat bath air to temperatures exceeding 210 degrees F. (100 degrees C.)--so hot that bathers had to wear special shoes to protect their feet from the blistering floor. They accomplished this by heating the marble floor, raised on pillars, with a log fire. Hot air was channeled through earthenware pipes in the walls. It took two or three days to heat a thermae, but that mattered little, as the baths were kept perpetually hot.

For washing and bathing, aqueducts large enough to gallop a horse through brought cool running water over long distances, even to the arid reaches of the Empire where it was most needed. Meanwhile, architects were busy developing the vaulted ceiling. Cast from concrete in one rigid mass, they could span vast areas to enclose thousands of bathers.

The Romans either adopted, or at least tolerated, local customs so bathing rituals usually varied from province to province in the vast Empire and some of

the baths survive even today. However, we infer by their design that the concept of a thermae was an all-encompassing recreational center.

When the splendor of the Roman Empire receded into the boot of Italy, the architectural remains of the Greek baths and the balnea inspired the smaller and more modest hammams of Islam. However, not until Muhammed himself enthusiastically recommended sweat baths around 600 AD did the Islamic hammam begin to proliferate (Mass Bathing: The Roman Balnea and Thermae).

Islamic Hammam



Figure 2. The Cagaloglu hammam, built in the 1500s, is the oldest functioning hammam in Istanbul. This 19th century drawing shows the harara (hot room) where the bather sweats, washes and is massaged. Reproduced with permission from Mikkel Aaland.

As explained above, the Islamic hammam developed as the Roman Empire receded. Middle easterners quickly adapted the Roman baths to their own ways (see Figure 2). The hammam gained religious significance and became an annex to the mosque, used to comply with the Islamic laws of hygiene and purification. While the

Romans built enormous central baths, the Arabs preferred several small baths throughout their cities, comparable to the Roman balnea. They still followed a progression through a series of hot rooms as in the thermae, but with different emphasis. As the Islamic faith spread, so did the hammam, which accounts for many still standing in Iran, Turkey, Syria, Asia Minor, and across North Africa from Egypt to Morocco (Aaland, 1997). Although the Islamic hammam can be found throughout the Middle East, it has never become widely popular elsewhere. Like the Roman baths, the hammam became a place to socialize.

Through participant observation, Staats investigated the use of the hammam with Moroccan women (1994). Staats describes the hammam as an important social outlet and a “cultural common denominator among Moroccan women” (p 7). The hammam is used for special occasions such as religious feasts, weddings, and after the birth of a child. It is used as a place to exchange information and “where women relax completely and reveal much about themselves” (p. 9, 1994).

Russian Bania

There are several forms of sweating procedures indigenous to Russia including the use of structures modeled after the Islamic and Roman models with hypocaust heating, models similar to the Finnish sauna and portable sweat lodges such as is used by American Indians. When group sweating began in Russia is unknown and it is likely that people in northern Asia and Russia have always had some form of group sweating. Aaland asserts that Russians are even more enthusiastic about sweating than the Finns and that if it were not for the repressive Soviet Government, the bania would be a household term instead of sauna (1997). As with the Finns and American Indians, the

bania was used for many purposes and have included rituals regarding birth, marriage, and death. Today, the Russian bania can be found in many major cities in the U.S. and the world. Russian Jews began their own traditions using the bania known as shvitz. Poulos (1999) investigated the practice of shvitz among a group of men who belong to a Midwestern Jewish community center in the U.S., drawing on participant observation and interview data. Poulos emphasized the importance of the ritual for promoting interpersonal intimacy (1999).

American Indian Sweat Lodge Ceremony



Figure 3. Crow sweat lodge. Reproduced with permission from Mikkel Aaland.

The sweat lodge ceremony is nearly universal among American Indian tribes from coast to coast and in Alaska, across Canada and in Mexico today (Colmant & Merta, 2000). Figure 3 shows a plains-style sweat lodge. Evidence of American Indians using the sweat lodge ceremony dates back as early as 400 B.C. (Quattrin & Cremin, 1988).

Traditionally, the American Indians used the sweat lodge for many purposes including basic bathing, socialization, evening warmth, celebration, a cleansing of the body and mind, and preparation for war, hunting, marriage, or passage into adulthood (Quinn & Smith, 1992). Ross and Ross (1992) of the Canadian Center for Quality Improvement identified the sweat lodge as being a native custom designed to promote health. After their sweat lodge experience, they made the following observations (Ross and Ross, 1992, p. 297):

In addition to the therapeutic value of an evening in a wilderness setting -- sweating and cleansing -- there was camaraderie, nourishing food and drink. In the dark heat of the sweat lodge, the ritual eased the worries of some and enhanced the self-esteem of others. During the process, people shared their worries, they testified about their difficulties, and they expressed their appreciation for the good things of life. The blessings of human relationships were especially acknowledged.

The building of group cohesion through the use of the sweat lodge has been reported by many prominent Native Americans. Fools Crow spoke of the importance of socialization and friendship in the shared sweat lodge (Mails, 1991). Rolling Thunder spoke of the healing properties of laughing and enjoying one another's company in the sweat lodge (Mails, 1991). Boyd (1974) reported that after the sweat lodge experience with Rolling Thunder, "All of us who had done this together seemed to be of one mind" (p.137). Lake (1987) emphasized:

The sweat lodge becomes a type of counseling center and place for group therapy; marriage and family problems are analyzed and remedied, personal problems

discussed, inter-family conflicts are resolved, and problems involving fears, anxieties, and depressions are dealt with in a group way. (p. 8).



Figure 4. Inside American Indian sweat lodge in 2000 used at a substance abuse residential treatment center in Gallup, New Mexico.

The sweat lodge has become part of many therapeutic procedures conducted by medicine people for physical ailments, such as psoriasis (a chronic inflammatory skin disease) and diabetes (Young, Ingram, & Swartz, 1989). While employed as a therapist on the Navajo Nation for two years, the author observed that Navajo Social Service and Department of Health agencies as well as local correctional facilities used the sweat lodge routinely. Its use included the treatment of a wide array of problems, from physical ailments to problems of adolescent delinquency and substance abuse. Figure 4 shows a group of Navajo men at a substance abuse residential treatment center relaxing inside a sweat lodge in between rounds Hall (1986), who surveyed 39 native alcohol treatment programs at random, found that half of the programs offered sweats on site or provided

access to them. Hall (1986) attributed the popularity of the sweat to the fact that it is not necessarily religious, its use is flexible, either in conjunction with AA or without, with residents or outpatients, and to the fact that it produces powerful physical and mental experiences. Traditionally, for the Navajo, every family had a sweat lodge, tucked out of sight of the dwellings for privacy, and many still do. Some extended families have separate sweathouses for men and women; otherwise the two use the same sweathouse at different times. Some Navajo people reported to the author that they participate regularly in the sweat lodge to keep their lives in balance and harmony. Although there are many variations in how ceremonies are conducted, Native Americans seem to regard certain factors as fundamental to the sweat lodge experience. Walkingstick-Garrett and Osborne (1995) explain:

Though techniques for the sweat lodge ceremony vary from tribe to tribe, the ceremony serves an important function through purification and healing for all who participate in it. From the skin, bodily toxins and negative energy are released. Similarly, from the mind and spirit, toxins such as anger, frustration, hurt, or anxiety are released. Ways of dealing with various situations, with others, and with oneself are talked about within the framework of the Universal Circle represented by the sweat lodge and its sacred Ceremony. (p.35).

An important function of the sweat lodge ceremony is providing group counseling (Colmant & Merta, 1999). Several writers in the field have drawn similarities between modern group work and the sweat lodge ceremony (Lake, 1987; Mails, 1991; Quinn & Smith, 1992; Ross & Ross, 1992; Walkingstick-Garrett & Osborne, 1995). Colmant and Merta (1999) found that 9 of Yalom's (1995) 11 therapeutic factors of group therapy

appeared to be readily apparent in the ceremony. These factors included instillation of hope, universality, imparting of information, altruism, development of socializing techniques, imitative behavior, group cohesiveness, catharsis, and existential factors. Other therapeutic features identified as prominent in the ceremony were that the ceremony was used much like an experiential group activity, promoted moral-cognitive development, and fortified cultural identity (Colmant & Merta, 1999).

Many non-American Indian groups have also made use of the sweat lodge ceremony and it is becoming increasingly popular in mainstream culture. In their paper advocating the potentials of sweat lodges for adventure education programs, Quinn and Smith (1992) described a number of groups sponsored by various growth and educational movements of the 1980's that used the American Indian sweat lodge experience. They explain that "sweats" were used for improving group cohesiveness and interpersonal bonding (1992). Several popular movie stars report regularly using the sweat lodge and a 1997 Newsweek article lists "de-stressing at Native American sweat lodges" as a trendy thing to do (Hamilton, 1997, p. 59). An Internet search in 1999 found 3659 web pages using the term "sweat lodge" (Colmant & Merta, 2000). In July, 2004 there were 55,400. Information offered includes everything imaginable, from the history and legends of the sweat lodge to how one can participate in a ceremony or buy their own portable sweat lodge that advertises to be designed in the Native American tradition by using recycled earth friendly materials.

The problem with using the sweat lodge ceremony with non-Indians is that the sweat lodge ceremony is a sacred ritual to American Indians. In the author's experience, American Indian representatives require that sweat lodges be built and ceremonies be

facilitated by only American Indian people qualified to do so. Many American Indian representatives strongly object to non-American Indian groups proposing to use the sweat lodge ceremony. It is such a central part of the religious beliefs of American Indians that, according to Hirschfelder and Molin (1992), “it is inconceivable that an Indian could practice his religious life in the traditional Indian way without having access to a sweat lodge” (p. 287).

Colmant and Merta (1999) recommended that what has better potential for widespread use with non-Indians, is to combine the sweating process with psychotherapy while leaving aside all other sacred ritualistic aspects of the ceremony. They go on to explain that with non-Indians, a sweat therapy session could take place in a sauna or sauna-like structure rather than a sweat lodge. Modern group work formats could be adjusted to be integrated with the sweating process to accommodate select populations (Colmant & Merta, 1999).

Finnish Sauna

When it comes to group sweating, it is hard to match the social and cultural importance that it has in Finland. In turn, it is also hard to match how much influence group sweating in the form of sauna has influenced the world. According to the Finnish Sauna Society, there are about 1.6 million saunas in Finland, yielding a ratio of approximately one sauna for every three Finnish citizens (2004). In addition to public saunas, there is a sauna in practically every home. Most researchers agree that Finns always had some form of sweat bath, as did most peoples around the world (Aaland, 1997). Evidence of the Finns using the sauna dates back over two thousand years (Konya & Berger, 1973).

There are many striking similarities of the cultural meaningfulness of the sauna to the Finns and the sweat lodge to the American Indians. For the Finns, the sauna served many purposes, including bathing, medical, socialization, and spirituality. The sauna has been part of Finnish people's lives literally from cradle to grave. Traditionally in Finland, the sauna is a part of many main life transitions including birth, marriage, and death. Many middle aged people today in Finland report having been born in the sauna (Leimu, 2002). For example, the long time Finnish president *Urho Kaleva Kekkonen* was born in a smoke sauna in 1900. Savusauna's smoke contained tannic acid that sterilized surfaces (Aaland, 1997). After a birth, the sauna was assigned to the mother as her resting place for several weeks. There were strict rules, strongly influenced by the spiritual tradition for the baby's first sauna. It was believed that the baby's first sauna determined the basic features of the child's future personality. The sauna was also the place where the dead were prepared for their last journey. In old times, the sauna was known as the Finnish cure or the poor man's pharmacy. It was also the hospital where folk healers practiced their art. In addition to being used as an infirmary where women gave birth, it was used during blood cupping, blood letting and minor operations were performed by the barber, surgeon or village pharmacist (Aaland, 1997).

The sauna was used for ritual and ceremony for mental, spiritual, and physical cleansing. "These stubborn people," wrote an astonished Swedish economist in 1776, "even connect the sauna with their theology and think the sauna building is some kind of shrine" (Aaland, 1997, History of the Nordic bath section, ¶ 13). The sauna was important in marking transitions from the everyday to the sacred (Leimu, 2002). Many ancient Finnish myths and legends often include the sauna. Several writers state that,

traditionally, one was expected to behave in the sauna as one would in a church (Aaland, 1997; Law, 1978; Leimu, 2002). Negative emotions, such as greed and anger were thought to die in the heat of the sauna (Law, 1978). The wood and rocks were given spiritual significance as Law (1978, p. 19) writes, “The casting of the steam from the heated stones was an important ritual, because it represented the loosening of the spirit from the sacred stones”.

Close interpersonal interaction is a main purpose of sauna use. For Finnish people, sauna is a place for fun and relaxing with friends and family (Aaland 1997; Konya & Berger, 1973, Leimu, 2002). Traditionally for the Finns, the sauna was a place of community bonding. During the nineteenth century, it was common for Finns of both sexes to take their sauna together in public saunas. This practice remained common in rural communities at the beginning of the twentieth century but gradually ceased by the 1950s. In some cases, the whole population of a small village took the sauna jointly. In large country manor houses, all workers took the sauna together. Leimu writes that, “saunas were like the village tavern or English pub where people from a village or part of a town could get together and exchange news” (2002, p. 80). According to Leimu, this gradually declined as Finnish culture became less agrarian and more industrialized (2002). With the modernization of Finnish society came the emphasis of the notion of the nuclear family and it is still common today for both sexes of the same family to take their sauna together. Sauna use is a main activity for sharing quality family time in Finland.

In addition to being thousands of years old, the Finnish sauna can also be found worldwide. A web-search using Google with the term “sauna” produced 6,710,000 web

pages. According to the International Sauna Society, there are more than five million people in Germany and twelve million in Japan who use the sauna regularly. The Finnish sauna can be found in health clubs and hotels around the world. The three main reasons for the worldwide presence of sauna seem to be; 1) the centrality of the sauna in Finnish culture as described above; 2) the Finns took the sauna with them as they emigrated; and, 3) the high quality of sauna manufacturing by the Finns.

Wherever the Finns went, so did the sauna. This was true during both peacetime and wartime. The Finnish military found the sauna essential. They used tents with special sauna heating units as means of delousing the soldiers and boosting morale. Finnish athletes routinely bring saunas with them to the Olympics. Finns bringing saunas around the world helped boost their popularity but it was after World War II that the sauna greatly proliferated. During the war, a group of sauna devotees composed of Finnish journalists, doctors and architects convened to consider ways of furthering the sauna's cause. Known as Friends of the Finnish Sauna (Suomalaisen Saunan Ystävät), and later as the Sauna Society of Finland (Sauna Seura r.y.), their task was to research the climatic conditions inside the sauna, to determine the best ways of construction, and to perform tests to the sauna's physiological effects (Aaland, 1997). International demand for saunas rose after WWII but the Finns were reluctant to sell their ritual. Selling saunas internationally was first started by the Swedes and Germans. The Finns watched while the Swedes and Germans attempted to replicate Finnish standards. As German and Swedish sauna manufacturing rose, eventually, a contingent of young, worldly Finns jumped into the international sauna business (Aaland, 1997). Much credit for the success of the Finnish sauna industry can be attributed to the Finnish Sauna Society whose

engineers and draftsmen have imposed strict standards on sauna companies. Their stamp of approval is found only on saunas that comply with their careful specifications.

According to the Finnish Sauna Society, the FS sign guarantees that the sauna product was designed by a Finn, was manufactured in Finland, is of high practical and technical standard, and is pleasing in appearance and suitable in a Finnish sauna setting. Today, over half of the world's sauna sales are in Finland and there are few places in the world where Finnish companies are not selling saunas (2004). Figure 4 depicts men and women sweating together in a sauna in California in 1997.



Figure 4. Finnish sauna in California 1997. Reproduced with permission from Mikkel Aaland.

The Psychological Effects of Sweating

Research attempting to measure the psychological effects of sweating is rare, especially when it comes to randomized controlled studies. Searching the following data

bases (PsychInfo, Eric, Medline), there were no research investigations on the psychological effects of sweating procedures prior to the 1970s. And since the 1970s, the investigations undertaken have been a hodgepodge of different topics rather than a coherent, solid accumulation of knowledge concerning the psychological effects of sweating procedures. Since there is such a wide variability in the literature on the psychological effects of sweating procedures, this review presents a summary in chronological order. The scientific study of sweating procedures has been almost entirely focused on the Finnish sauna as opposed to other forms, such as the American Indian sweat lodge, Russian bania, Turkish hammam, etc.

In 1954, Dr. Covalt, a physician, wrote “Sauna Baths – A Preliminary Report”. In it, he reported an absence of the sauna in medical literature. His literature review conducted through the Library of Congress resulted in ten reports: Six from Germany; three from Switzerland; and, one from Sweden (Covalt, 1954). These reports, spanning from 1938 to 1950, investigated the physiological effects of sauna bathing. Covalt, calling for a replication of European findings in the United States, conducted a study with five healthy women taking weekly saunas for twelve weeks. In addition to reporting the results of basic measures of body weight, blood pressure, and body temperature, Covalt reported that the sauna caused the women to experience a sense of well-being.

The next study on the psychological effects of sweating does not appear until 1972. Kuusinen and Markuu investigated the immediate aftereffects of the Finnish sauna on psychomotor performance and mood with 20 males. The results indicated that the effects of sauna bathing on performance that required rapid and adequate psychomotor adjustment did not differ from those of merely washing oneself. Slight differential

effects on mood were discovered with decreases in anxiety and hostility (Kuusinen & Markku, 1972).

In another 1970s experiment, this time with five young healthy males, the participants were exposed to a 90° C sauna as three ten-minute sessions separated by rest periods at room temperature in between (Putkonen & Elomma, 1976). During the subsequent night their EEGs were recorded and the recordings compared to their sleep-EEGs taken without a preceding sauna bath. The results were that the post-sauna sleep was deeper; during the first third of the recording period, or the first two hours, there was 72% more delta wave sleep than in the control recordings (1976).

No experimental studies were found to have occurred in the 1980s. Sorri (1988) wrote a psychoanalytic view of sauna bathing and described it as follows (p.236):

Sauna bathing is a pleasant and relaxing experience that combines psychic, physical and social pleasures. A person's inner feelings about sauna bathing, its essential components are mainly unconscious. The sauna bath reduces the aggressive behavior and enables bathers to forget the commonplace pressures of everyday life. The sauna evokes memories of childhood development, awakening feelings of maternal warmth and paternal power in the bather. The sauna is a positive mental health resource, even though its effects are transitory.

Frankva and Franek (1990) found significant positive effects of sauna baths on immediate mental states for both men and women (N = 100). These effects included improvements in mental satisfaction, energy, relaxation, frustration, and anxiety. Limitations of this study included that all the participants were regular sauna users (1 year minimum) and the absence of a comparison group.

In 2000, Colmant and Merta completed the first investigation into combining group counseling with group sweating with four adolescent boys with disruptive behavior disorders. They suggested that one way in which intense heat exposure is complementary to the counseling process is that “sweat therapy” offers physiological and psychological stress whereby the patient is provided psychosocial support to learn better coping (2000). The heat during sweat therapy was described as a dynamic force. They explained that, for the first ten minutes the average participant will likely experience the heat as pleasurable but this gradually changes to an effort of endurance as time passes. When the experience changes to an effort of endurance, those with problems of frustration tolerance are especially challenged (Colmant, 2003). Similarities between anxiety/anger provoking situations and sauna are that body temperature rises, heart rate is increased, sweating is induced, and negative self-talk begins, thus, people with problems of aggression or anxiety who have difficulty remaining calm and/or prosocial when in a physiologically escalated state may especially benefit from sweat therapy. Recent research supports that those with higher neurotic personality traits have greater difficulty coping with heat stress (LeBlanc, Ducharme, Pasto, & Tompson, 2003).

LeBlanc, Ducharme, Pasto, and Tompson (2003) investigated the relationship of personality traits to people’s responses to warm and cold environments with 20 young healthy adults. The personality measure used was the Big Five Personality Inventory (BFPI). Higher scores on each of the five scales are related to higher self-reported levels of extraversion, agreeableness, conscientiousness, neuroticism and openness. For both the cold and the hot environments, the researchers found that people who scored high for neuroticism (tendency to be anxious, fearful, sensitive, and self-critical) had both a higher

discomfort rate and a lower autonomic nervous system (ANS) response. In other words, when in the cold environment (10° C) they reported it to be highly uncomfortable and shivered less than normals. In the hot environment (40° C), they found it highly uncomfortable and sweated less.

Since 1997, Dr. Emilio Gutierrez, a clinical psychologist at the University of Santiago in Spain, has been investigating the use of heat treatment for people with anorexia nervosa (AN). Three types of heat treatment that Dr. Gutierrez and his colleagues are investigating include continuous exposure to a warm environment, wearing a thermal vest, and sauna. Heat treatment was developed with the specific aim of helping patients to control strenuous exercising and other manifestations of hyperactivity. Excessive activity is a recurrent characteristic observed in people with AN since the first modern descriptions of the illness (Gutierrez et al. 2002).

The main instigation for the development of heat-treatment for hyperactivity was an extrapolation from animal research where the effect of ambient temperature (AT) on the behavior of rats exposed to restricted feeding schedules has been investigated. This research describes decrease in feeding behavior and the "self-starvation" observed in rats when the animals are simultaneously exposed to a restricted feeding schedule and given free access to an activity wheel (Routtenberg & Kuznesof, 1967). Because of the numerous parallels with behavioral features of AN patients (such as hyperactivity, hypothermia, self-starvation, and weight loss), this animal model has been proposed as a potentially useful analogy of AN (Epling & Pierce, 1996). In this research, it is suggested that hyperactivity in rats (wheel running) serves a compensatory function in support of thermoregulatory homeostasis, impaired by loss of weight brought about by

the interaction between restrictive food schedule and physical activity (Sherwin, 1998). However, the interaction between restricted feeding and activity in the rats is heavily dependent on ambient temperature. Just running the experiment 6 °C above standard temperature is sufficient to inhibit excessive running in the rats. Accordingly, they do not lose weight, do not self-starve, and survive the experiment (Lambert, 1993). In warmer temperatures, Rats improve their meal efficiency and gain weight in spite of the experimental conditions of restricted feeding and free access to the running wheel (Morrow et al. 1997).

Gutierrez et al. (2002) also found sauna use suspiciously not listed in the medical literature as a weight loss strategy used in AN. They explain that the absence of sauna use in AN is unusual because it is very effective at causing rapid fluid loss like other commonly used weight loss methods in AN such as diuretic and purgative abuse. These researchers speculate that sauna use may prevent people from developing the full-blown syndrome and may accelerate their recovery. The researchers describe their successful clinical experience and case study using a sauna with AN. They report that as activity receded, the patients did not report anxiety, depression, or other unpleasant experiences, but on the contrary they repeatedly emphasized the calming and relaxing effect of heat. These psychological changes were followed by a progressive normalization of eating. Furthermore, those changes were maintained during follow-up after the discontinuation of sauna use (2002). However, Gutierrez et al. have not yet produced a randomized controlled study using sauna for patients with AN. In an interview with Dr. Emilio Gutierrez in July 2004, he made the following comments (Colmant, 2004):

Colmant: Can you say more about your plans for a study using a sauna with people with AN? One of the things I am curious about is if you are planning a randomized controlled study using a sauna?

Dr. Gutierrez: Of course, this is the study I am most interested to perform. However, I can't give you a definite answer at the moment. Actually, I am in Vancouver to check out this possibility. I know that there would be a lot of difficulties to perform the 'first' study with sauna and AN patients. The ethics committee could pose a lot of difficulties. Four years ago, I managed to send Prof. Peter Beumont in Sydney, an infrared sauna. This was a very expensive enterprise and the sauna is still there. Regretfully, after the death of Prof. Peter Beumont, I think that this sauna cabin will never be used. It is easier to do trials with new drugs, no matter how ineffective they happened to be, or how feeble the theoretical foundation could be. A problem with the sauna is that, in comparison with drugs, it seems half mysterious, half esoteric. Probably, we will need to move slowly and accumulate more direct and indirect evidence about the beneficial, preventative, protective effect of heat, and their risks too. An important clue in this respect will be what Anu Vähäsoini will find in her study in Finland about the current practice of sauna use by real AN patients. The whole idea about the role of heat in the treatment of AN will then be more ample than just performing a one-shot study (sauna, or whatever other device). Probably our next step after the first randomized trial with thermal vests here in Vancouver, will be a dose-response study with this strategy of heat application.

One of the most consistent descriptions of the effects of sauna is that it causes feelings of relaxation and stress relief (Colmant & Merta, 2000; Gutierrez, Vazquez, & Beumont, 2002; Sorri, 1988; and Sudakov, Sinitchkin, & Khasanov, 1988). Specific descriptions concerning the use of intense sweating in counseling include that intense heat exposure creates an altered state of consciousness for the participant, creates a challenging activity in which to improve coping, and requires no movement and therefore lends itself well to process facilitation.

Some writers have described the sweating experience as creating an altered state of consciousness (ASC) for the participant. An ASC is defined as a transient state characterized by time distortion, disinhibition from social constraints, altered sense of self, or a change in focused attention. Typical examples of activities thought to cause an ASC include dreaming, endurance running, meditation, daydreaming, hypnosis, and various drug-induced states (Dietrich, 2003). Michael Winkelman, an anthropologist from the University of Arizona, describes group sweating as a shamanic practice used worldwide to promote ASCs (2000). Barbara Kerr, Ph.D. is a professor of counseling psychology at Arizona State University and a recipient of the American Psychological Association Presidential Citation. She is a leader in the fields of Gender and Giftedness, Spiritual Intelligence, Creativity, and Counseling Gifted Students. In her most recent book, Letters to a Medicine Man: The shaping of spiritual intelligence, she wrote extensively about her experience using the American Indian sweat lodge (2002). In an interview in February, 2004 Dr. Kerr made the following comments about the role of the heat in the sweat lodge in psychological healing:

Eason: What is the role of the heat in the sweat lodge in psychological healing, from your perspective?

Dr. Kerr: It's just a vehicle. I think that the heat moves people into an altered state much more rapidly than other techniques. It raises arousal level and when people are in high state of arousal, when they are a bit frightened and uncomfortable they tend to be more open to interpretations that will help resolve that arousal. They can attribute their resolution of the arousal to that interpretation, so that in the sweat lodge, within 5 minutes, people are sweating and hot and kind of scared and in that state, they are looking - remember it is dark, so in that state of almost no stimulation except the heat and the closeness, they are looking for a way of resolving their anxiety and fear. Often, the particular prayers and interpretations that are made give the person a way out, a way out of that state of fear and arousal, so that if something as simple as telling a story of Atomi and the 49 warriors, there is an interpretation-at the end of the story- it says: and so we realize that Atomi's warriors of fear and doubt are merely illusions. This statement of fear and doubt are illusions if it is timed exactly right, the person has a euphoria sometimes, a catharsis where they recognize not only the fear of the sweat lodge, the fear of the heat and darkness. Somehow it generalizes to their other fears and they recognize their fears are illusionary in their lives.

Eason: Fear becomes a very powerful emotion.

Dr. Kerr: In a way we turn fear back on itself, we turn Atomi's warriors and get them into retreat by showing the illusionary nature of fear. We also show we have control. We have power to control our fear. People learn that the singing and

drumming also helps that and they learn a number of ways of managing their fear. In therapy of course, there are procedures like Gestalt techniques that are very confrontive that do the same thing. They raise arousal level to the point the people are just casting around looking for some way for resolving this horrible state that they are in, in fear. And when an interpretation comes around they will often grab at it.

Eason: You mentioned singing and dancing, are they other ways, that you are aware of that you think have the same power that heat, singing and dancing have?

Dr. Kerr: Yes. I think any kind of rigors that we expose ourselves to, again within a safe environment, that essentially make our brain chemicals and our body more ready for change. That is why fasting tends to put people in very receptive states, fasting, various kinds of deprivation and rigors such as running, dancing, these kinds of things. Of course, the dancing is changing heart rate and that sort of thing. So, some rigors sort of just prepare us to be more receptive and some rigors that we encounter just flip the consciousness. One thing I am very interested in looking at is the flip from sympathetic to parasympathetic, there seems to be some sort of move from sympathetic to parasympathetic response that seems to be a very fertile and fruitful time for change to occur.

Conceptualizing the sweating experience as an altered state of consciousness, however, creates additional assumptions and many complexities in terms measurement. The existence of ASCs is still considered controversial and research with ASCs is typically conducted with complex neurological instruments that are costly and require highly specialized training such as in electrophysiological and neuroimaging.

Conceptualizing the sweating experience simply as a form of exercise is more parsimonious, makes sense and seems to have better practicality.

In a study with 24 college students exploring the effects of sweat therapy on group dynamics and affect, the researchers attempted to measure the effects of the sweating experience using the Critical Incidents Questionnaire (CIQ) and the Positive and Negative Affect Scale (PANAS) (Colmant, Eason, Winterowd, Jacobs, & Cashel, in press). For both the men and women's sweat groups, statements classified as Experiential Features on the CIQ indicated that the sweating process promoted relaxation, a relief from stress, and/or a feeling of accomplishment. In fact, the sweating process was noted by participants as one of the most important aspects of their experience as the sweating process was the second most frequently identified factor by women after Acceptance/Cohesion and ranked third for men after Acceptance and Interpersonal Action. Relaxation, stress relief, and/or a feeling of accomplishment were not reported as benefits by any of the non-sweat participants on the CIQ.

These findings, however, were not supported by the results with the PANAS. Participants completed the PANAS at the end of each session. The PANAS measures positive and negative feelings and emotions. It consists of ten positive adjectives and ten negative adjectives. Positive Affect (PA) reflects the extent to which a person feels enthusiastic, active, and alert. In contrast, Negative Affect (NA) is a general dimension of subjective distress and unpleasurable engagement that, "subsumes a variety of aversive mood states," (Watson et al., p. 1063). Participants are asked to rate the adjectives based on how they feel using a five-point Likert scale (1 = Very Slightly or Not At All, 5 =

Extremely). The PANAS is scored by totaling one score for the ten positive adjectives and one score for the ten negative adjectives.

No differences were found between sweat and non-sweat groups in the experience of affect. Timing of administration of the PANAS may have been problematic. In this study, participants were tested immediately after each session and were compared for affect measured after the second session to affect measured after the seventh session. Since measures were not taken before each session, acute changes in affect were not ascertained. Colmant et al. (in press) recommended that it will be important for future researchers to measure subjects' response at multiple times: before-sweat, during-sweat, and post-sweat. From clinical experience with sweat therapy, people often report feeling their best about an hour after the experience, report sleeping better, and experiencing noticeable positive effects into the following day. In addition, the PANAS may not be sufficiently sensitive to effects of the sweating experience on affect. The domains of the PANAS have been criticized as too restrictive and containing items irrelevant to intense physical activity (McAuley & Courneya, 1994; Gauvin & Rejeski, 1993). Measures of acute exercise-induced changes in affect may be more sensitive to the sweating experience.

McAuley and Courneya (1994) and Gauvin and Rejeski (1993) argue that existing measures of mood and affect such as the POMS and the PANAS do not do well to measure the stimulus properties of the subjective experiences unique to physical activity. McAuley and Courneya argue that the PANAS is problematic from both a conceptual and theoretical perspective as a result of it being a single-item affect scale that presumes that affect is simply bipolar and unidimensional (1994). From their research, the stimulus

properties of physical activity include Revitalization, Tranquility, Positive Engagement, and Physical Exhaustion (Gauvin & Rejeski, 1993) and Positive Well-Being, Psychological Distress, and Fatigue (McAuley & Courneya, 1994). The Exercise Induced Feeling Inventory (EIFI) measures Revitalization, Tranquility, Positive Engagement, and Physical Exhaustion (Gauvin & Rejeski, 1993). The Subjective Exercise Experiences Scale (SEES) measures Positive Well-Being, Psychological Distress, and Fatigue (McAuley & Courneya, 1994). Both the EIFI and the SEES were designed to (a) be employed during activity if necessary, (b) be capable of being used in multiple administrations, and (c) be sufficiently sensitive to experiences unique to physical activity (Gauvin, L. & Spence, 1998).

Thinking about intense heat exposure through use of a sauna, steam room, or sweat lodge as a form of exercise provides a useful analogy. The definition of “Exercise”, according to the American Heritage Dictionary, includes “activity that requires physical or mental exertion, especially when performed to develop or maintain fitness” (1976, p. 459). The sweating experience produces profound physiological changes and perceptions of physical symptoms. Both exercise and sauna cause the stimulation of the sympathetic nervous system and the activation of the hypothalamus-pituitary-adrenal hormonal axis and both cause an increase in noradrenaline (E. Guiterrez, personal communication, July13, 2004). However, there does seem to be some notable differences between exercise and the effects of sweating procedures. Unlike in typical exercise activities, sauna causes an increase in β -endorphins and does not increase the concentration of adrenaline in the blood stream (E. Guiterrez, personal

communication, July 13, 2004). Sauna also causes muscle relaxation, whereas, typical exercise activities require muscle tension and the movement of large muscle groups.

In recent years, there has been a growing recognition of the role of physical activity in the maintenance and promotion of mental health, psychological well-being, and health-related quality of life (Gauvin & Spence, 1998). Gauvin and Spence explain that, in this regard, a focal point for researchers has been to study the outcomes of acute bouts of physical activity on transient psychological states (1998). They report that, “the literature shows that acute vigorous physical activity results in decreased state anxiety and depression and improved feelings of energy, calmness, and hedonic tone,” (Gauvin & Spence, 1998, p. 325). Furthermore, other researchers have demonstrated that single bouts of physical activity can dampen the reactivity associated with psychosocial stressors that may contribute to the etiology of cardiovascular disease (Blumenthal et al. 1991).

A unique feature of sweating compared to other forms of exercise is that it does not require movement. The fact that sweating does not require movement makes it especially conducive to being combined with counseling and psychotherapy. A noteworthy difference between sweat therapy and experiential activities used in adventure therapy such as ropes is that in ropes, processing mainly takes place after the challenging activity and in the sweat therapy sessions, processing takes place during the challenging activity. In ropes, therapist facilitated processing typically takes place initially with goal-setting and presentation of activities, immediately after an activity in the form of debriefing, and at the end of the session to provide consolidation of learning, evaluation of the group, and closure (Blanchard, 1993). In sweat therapy sessions,

therapist facilitated processing takes place while the participants face the challenging activity of enduring the heat. This provides the opportunity for the therapist and other group members to better enter into an individual's psychology while they struggle. This opportunity can be especially advantageous when working with people who often minimize, deny, or have poor insight. For example, a question stated in the present tense such as, "What are you thinking about right now?" often produces more elaborate information than one asked in the past tense. Few rigorous physical activities are conducive to therapist facilitated processing while an individual is engaged in the activity due to the individual's attention being required to safely perform the necessary movements. Another advantage to group sweating being a strenuous physical activity that does not require movement is that many people often excluded from participating in activities like ropes, rock climbing, or backpacking because of ambulatory problems can participate in sweat therapy. Heart problems and acute respiratory diseases are of the few conditions that might make intense sweating medically contraindicated.

In summary, the previous literature on the psychological effects of sweating procedures is sketchy and includes a wide variety of topics. There is a lack of randomized controlled studies and many of the studies were conducted with a small number of participants and lacked adequate comparison groups. However, there have been some interesting findings that have important implications for therapeutic and preventive mental health purposes. These findings include that sweating promotes positive effects on sleep, mood and affect, and on hyperactivity, specifically for people with anorexia nervosa. One of the most consistent descriptions is that sweating facilitates relaxation and stress relief. Preliminary research with sweat therapy finds the process of

group sweating to be complementary to group counseling. There is a strong need for replication of studies to better solidify these findings. Utilizing measures of acute exercise-induced changes in affect offers a pragmatic approach at this point in the development of investigating the psychological effects of sweating procedures.

Group Therapeutic Factors

It has long been established that group therapy is an effective modality of treatment. The process of group therapy is thought to include a number of elements distinguishable from one another by virtue of their specific effects on the group member. These elements are known as therapeutic factors. A therapeutic factor has been defined as “an element of group therapy that contributes to improvement in a patient’s condition and can be a function of the action’s of the group therapist, the other group members, and the patient himself” (Crouch, Bloch, & Wanlass, 1994, p. 269). Although the knowledge base on therapeutic factors is not conclusive, emerging findings point to the importance of some therapeutic factors over others.

Over the past thirty years, a large number of controlled studies of psychotherapy outcome have been performed. The research evidence demonstrates that, overall, psychotherapy is an effective endeavor: approximately two-thirds of patients who receive psychotherapy are “moderately” to “much” improved (Yalom, 1995). One particularly rigorous review of 475 controlled studies concluded that the average person who receives psychotherapy is better off at the end of it than 80 percent of people who do not, and that the outcome of group therapy is virtually identical to that of individual therapy (Smith & Glass, 1980). Martin Seligman found similar results on the effectiveness of psychotherapy using a questionnaire with 7000 respondents (1995). Recent research has

also found that group and individual treatments have equivalent outcomes (Holmes & Kivlinghan, 2000; Shechtman 2003). Based on their review of 730 group psychotherapy studies, Barlow, Burlingame, and Fuhriman (2000) report that the group format consistently produced positive effects with a number of disorders using a variety of treatment models. It is this overwhelming evidence for the overall effectiveness of group psychotherapy that has influenced the switch of emphasis from “Does it work” toward a fuller understanding of the necessary conditions for effective psychotherapy. What is known about how group therapy works is based on the concept of therapeutic factors.

The most comprehensive historical review of therapeutic factors was published in 1985 by Bloch and Crouch in their book, Therapeutic Factors in Group Psychotherapy. The development of the concept of therapeutic factors can be traced back to 1905 when the physician Joseph Pratt described his ‘class method’ of treating patients with tuberculosis. Although Pratt was a physician and was primarily occupied with the physical treatment of his patients, he recognized that a group approach had special advantages. When a newcomer came into the group, one of the ‘star’ members was generally asked how they personally benefited from Pratt’s treatment. Pratt noticed that this was responded to with great enthusiasm that exerted a powerful influence on the newcomer. Recognizing that encouragement and support were crucial forces in the patient’s recovery, “Pratt pinpointed at least one mechanism in his ‘class method’ that later became established as the factor of ‘instillation of hope’” (Bloch & Crouch, 1985, p. 7).

Very little occurred from 1900 through 1925 and the therapeutic factor was not an identifiable concept although it was recognized implicitly by a minority of therapists

reporting on their clinical experience. It was the application of psychoanalytic theory to group therapy that greatly influenced the concept of a therapeutic factor. Through the late 1920s and 1930s, a few early pioneers like Burrow (1927) and Wender (1936) began identifying forces unique to group therapy. The application of psychoanalytic concepts to group therapy blossomed during and immediately after the Second World War in the USA and Britain (Bloch & Crouch, 1985). For example, Slavson in the 1940s identified five elements – transference, catharsis, insight, reality testing, and sublimation (1985). Unlike Slavson, Foulkes was impressed by the intrinsic therapeutic power of the group process as by incorporating analytic thinking into group, and he began to tease out group-specific therapeutic factors including, acceptance, universality, vicarious learning, guidance, and the activation of the collective unconscious (1985).

Corsini and Rosenberg's review published in 1955 marks a major advancement in the evolution of the concept of therapeutic factors (Bloch & Crouch, 1985). They conducted a factor analysis that included reviewing 300 articles making reference to therapeutic factors. Two hundred twenty statements reflecting therapeutic factors were extracted; identical statements were combined; and finally according to a series of hypotheses, 166 statements were categorized as far as possible. The result was a classification of nine factors plus a miscellaneous category. They are: Acceptance; Altruism; Universalization; Intellectualization; Reality Testing; Transference; Interaction; Spectator Therapy; and Ventilation. The miscellaneous category covers a range of mechanisms, including suggestibility, sublimation, sharing common experiences, and the opportunity for spontaneity. Bloch & Crouch state that Corsini and Rosenberg's work

brought “taxonomic order to the group scene and ushered in a phase of systematic, investigatory research into the subject” (p. 12).

The next major advancement to occur was in 1970. Yalom extended the work of Corsini and Rosenberg in further refining the list of therapeutic factors and integrated them into a comprehensive theory of group psychotherapy in his book aptly titled, The Theory and Practice of Group Psychotherapy. Yalom places a main emphasis on interaction and integrates interpersonal theory of psychiatry formulated by Harry Stack Sullivan. Yalom helped make Corsini and Rosenberg’s list of therapeutic factors less nebulous and added three more factors including Instillation of Hope, Imparting of Information, and Existential Factors.

Yalom (1995) is the single most influential theorist in the group counseling arena. His approach to group counseling is organized around 11 therapeutic factors and how these factors are hypothesized to be perceived as differentially important as a function of (1) type of group, (2) stage of group development, and (3) individual differences among group members (Yalom, 1995). Yalom’s (1970, 1975, 1985, 1995) classification of the therapeutic factors in therapy groups has been the most widely adopted version of this popular concept. The eleven therapeutic factors articulated by Yalom include instillation of hope, universality, imparting information, altruism, the corrective recapitulation of the primary family group, development of socializing techniques, imitative behavior, interpersonal learning, group cohesiveness, catharsis, and existential learning. While this list is not set in cement and there can be a number of pathways to healing through the infinite complexity of the therapy process, Yalom writes, “this list of therapeutic factors

is derived from the best available evidence at this time and constitute the basis of an effective approach to therapy” (Yalom, 1995, p. 4).

The concept of therapeutic factors has great utility for group therapists. The importance of therapeutic factors has been discussed for many types of clients, including those struggling with learning disabilities (Brown, Hedinger, & Mieling, 1995), incest experiences (Randall, 1995), alcohol addiction (Lovett & Lovett, 1991), hearing impairment (Card & Schmider, 1995), obsessive compulsive disorder (Koback, Rock, & Greist, 1995), and grief (Price, Dinas, Dunn, & Winterowd, 1995). Kivlinghan, Coleman, and Anderson (1996) provide a comprehensive review of the research completed between 1976 to 1996 on the perceived value of therapeutic factors for specific types of groups.

Bloch et. al. (1994) point to five studies that show a relationship between a constellation of therapeutic factors and outcome. One concerns long-term outpatient group therapy, another short-term encounter groups, the third long-term institutional therapy of substance abusers, the fourth peer support groups, and the last short-term therapy groups.

Yalom and his colleagues (1985) administered their TF questionnaire on a single occasion to 20 outpatients who had recently terminated or were still in treatment. The sample was chosen by asking therapists to nominate successful patients so that the rank ordering indicated those factors particularly valued by such patients. The three most helpful factors were interpersonal learning, catharsis, and acceptance. Lieberman and his associates (1973) made use of both therapeutic factor and most important event questionnaires with various forms of encounter groups. Those who showed the best

outcome ranked insight, acceptance, advice, and family reenactment as the most important therapeutic factors. Steinfeld and Mabli (1974) administered Yalom's TF questionnaire to fifty male prison inmates, former drug abusers, and "successful" graduates of a group therapy program. The participants rated insight most highly, followed by an existential factor, catharsis (self-disclosure), and feedback. The high ranking of existential factors is thought to be a peculiarity of the type of participants in this study, mostly poor black heroin users (Bloch, Crouch & Wanlass, 1994). Lieberman completed another study in 1990 with self-help groups. In successful self-help groups the factors most emphasized were interpersonal learning, self-understanding, catharsis, and the instillation of hope. Flowers used Yalom's questionnaire with 24 subjects in short-term groups (1987). Most showed improvement on the outcome measure used; three did not. A comparison of TF ratings between subjects revealed high agreement among improvers.

It appears that all therapeutic factors are not considered equal and greater attention has been paid to interpersonal learning and group cohesion. This is especially true for group cohesion as its definition has been further refined to be more closely equated with the therapeutic alliance. Yalom (1995) considered group cohesiveness and interpersonal learning to be "so important and complex" (p.2) that he treated these two factors separately from the remaining therapeutic factors.

One of the most widely recognized group therapeutic factors is interpersonal learning. Yalom (1975) conceptualized this therapeutic factor as interpersonal learning – input or output. Bloch and his associates have labeled this therapeutic factor, learning through interpersonal action (Bloch & Crouch, 1985). The essence of Learning from

Interpersonal Action or Interpersonal Learning is a learning process arising from the experience of interaction and emphasizing the acquisition of new, more adaptive ways of relating to others. Yalom argues that this therapeutic factor is of critical importance to successful group psychotherapy based on the importance of interpersonal relationships, the corrective emotional experience and the group as a social microcosm (1995). While theoretically, Interpersonal Learning is centrally important to group therapy, empirical study of its relationship to outcome has received little attention (Bloch, Crouch & Wanlass, 1994).

Research from both therapy and laboratory groups has demonstrated that group cohesiveness has a plethora of important consequences that have obvious relevance to the group therapeutic process. According to Yalom (1995) it has been shown, for example, that the members of a cohesive group, in contrast to the members of a noncohesive group, will (p.67):

1. Try harder to influence other group members
2. Be more open to influence by the other group members
3. Be more willing to listen to others and more accepting of others
4. Experience greater security and relief from tension in the group
5. Participate more readily in group meetings
6. Self-disclose more
7. Protect the group norms and exert more pressure on individuals deviating from the norms
8. Be less susceptible to disruption as a group when a member terminates membership.

By definition, cohesiveness refers to “the attraction that members have for their group and for the other members” (p. 67, 1995). The members of a cohesive group are accepting of one another, supportive, and inclined to form meaningful relationships in the group. Cohesiveness seems to be a significant factor in successful group therapy outcome. In conditions of acceptance and understanding, patients will be more inclined to express and explore themselves, to become aware of and integrate hitherto unacceptable aspects of self, and to relate more deeply to others. Self-esteem is greatly influenced by the patient’s role in a cohesive group. The social behavior required for members to be esteemed by the group is socially adaptive to the individual out of the group (1995). Yalom goes on to explain that, highly cohesive groups are more stable groups, with better attendance and less turnover and that group cohesion promotes other therapeutic factors (1995). Cohesiveness favors self-disclosure, risk taking, and the constructive expression of conflict in the group – phenomena that facilitate successful therapy.

Group cohesiveness is analogous to the patient-therapist relationship in individual therapy and encompasses the patient’s relationship to the group therapist, the other group members and to the group as a whole. It can be broadly defined as the attractiveness of a group for its members. Bloch, Crouch and Wanlass (1994) cite a 1989 study by Budman and his colleagues as being the most impressive study on group cohesiveness from a design perspective. They investigated the degree of correspondence between cohesiveness in group therapy and the therapeutic alliance in individual therapy, and the relationship between cohesion and outcome. Findings suggested that cohesiveness, while multidimensional in concept, acted as if related to a single underlying factor.

Additionally, cohesion and alliance appeared closely connected. Furthermore, ratings of improvement correlated most strongly with cohesiveness measured early in the group's development. This finding suggests that therapy groups are more productive when group cohesion is quickly established (Bloch, Crouch & Wanlass, 1994).

Group cohesiveness has been the focus of numerous empirical investigations in the broad area of group dynamics. A decade ago, Crouch et. al. (1994) reported a growing consensus on the definition and measurement of group cohesiveness. This consensus has been stimulated by Yalom's formulation that group cohesiveness is the group therapy analogue of the working alliance in individual therapy and by findings that measures of cohesiveness and alliance are substantially related (Marziali, Munroe-Bloom, & McCleary, 1997). The empirical studies in group counseling confirm the importance of group cohesiveness (Kivlinghan, et. al. 2000). Kivlinghan points out that these results also parallel the research in individual counseling showing a positive relationship between working alliance and treatment outcome (2000). Despite differences in measurement, a number of studies have shown that group cohesiveness is positively related to a wide range of treatment outcomes (Braaten, 1989; Budmen, Demby, et. al., 1989; Kapp, Gleser, & Brissenden, 1964; Kivlighan & Lilly, 1997; Mackenzie, Dies, Coche, Rutan, & Stone, 1987; Marziali et al., 1997; Phipps & Zastowny, 1988; Rugel, 1987; Tschuschke & Dies, 1994; Weiss, 1972; Yalom, Houts, Zimberg, & Rand, 1967). Furthermore, group cohesion appears to influence a number of positive group dynamics. Kivlighan (2000) asserts that in this way, group cohesiveness can be seen as a primary condition that allows the group to function.

The most common research strategy in studying therapeutic factors overall relies on the group member as consumer. The participant's views are sought on what the participant found helpful in his/her therapy experience. Yalom emphasizes the importance of this approach as he stated, ". . . the farther we move from the patient's experience, the more inferential are our conclusions" (1995, p. 3). Bloch and Crouch classify two main methods for this approach: direct and oblique (1985).

In the direct form, the participant is asked to rank in order, often using a Likert scale, the degree of helpfulness of different group therapy experiences to assess the various therapeutic factors. An advantage of the direct form is that it assesses a comprehensive list of therapeutic factors. The disadvantage is that it presupposes the presence of a factor and may bias respondents. Currently, the Therapeutic Factors Inventory (TFI) is the only empirically derived and comprehensive assessment of the presence or absence of the 11 therapeutic factors in a particular therapy group and this measure is in its youth with regard to validation (MacNair-Semands, 2000).

The oblique form asks participants to respond to an open ended question revolving around an event occurring during a group session, series of sessions, or over an entire course of treatment which the participant regards as most important or significant for herself. The written response is then categorized in terms of a classification of therapeutic factors. The advantages and disadvantages of the oblique form are opposite the direct form. Since the participant responds to an open ended question and is not provided with statements reflecting therapeutic factors, the method is thought to be less biasing but also less comprehensive. Incidents selected by group members might or might not provide comprehensive descriptions of the therapeutic factors. A common

technique using the oblique form is the Critical Incidents Questionnaire (CIQ; Bloch, Reibstein, Crouch, Holroyd, & Themen, 1979).

In recent years, researchers have called for combining participant perception of therapeutic factors with more practical variables. Practical issues such as group dropout are likely to be significantly influenced by the perceived cohesion as well as the individual variables brought to the group (MacNair & Corazzini, 1994). Discussing the difficulty in measuring therapeutic factors, MacNair-Semands states, “We have been only moderately successful – and at times, given up – studying such therapeutic or curative factors in group research” (2000, p. 255).

An interesting debate has emerged around whether client perception versus observer ratings should be used to gauge such factors. Lieberman (1983) observed that because behavioral observations cannot directly assess insight or the development of a participant’s altered perspective, most investigators have chosen to study the therapeutic mechanisms with a direct inquiry of participants’ personal experiences. Nevertheless, behavioral measures using external criteria have been suggested for use in combination with a direct measure of participant perspective (MacNair-Semands, 2000). MacNair-Semands (2000) asserts that, “finding a balance in measuring group members’ experience and validation of verbal and nonverbal material will be important in our field’s future” (p. 258). MacNair-Semands recommends that the relationship of therapeutic factors to practical variables such as therapeutic outcome, absenteeism, and group dropout be emphasized in future research.

Indeed, Yalom (1995) places strong emphasis on the importance of attendance to successful therapy and its connection to group cohesiveness (1995). He points out that

patients who terminate early receive little benefit and that often get worse (1995). Those who remain have a high likelihood of profiting from therapy. The greater the attraction to the group, the more inclined that person will be to continue to be a member. Although not commonly used to assess cohesion, Yalom (1995) shows that this relationship has been recognized for several decades. For example, a study of twenty-three college student organizations reported a significant correlation between attendance and group cohesiveness (Sagi, Olmstead, & Atalsek, 1955). Yalom and Rand (1966) studied cohesiveness among forty members of five therapy groups and found that the least cohesive members terminated within the first twelve meetings. Another study found that the members with the highest cohesiveness scores at the sixth and at the twelfth meetings attended significantly more meetings over the course of a year (Yalom et al., 1967). A study of sixty-six patients revealed that the twenty two dropouts had less cohesiveness – they were less engaged; they perceived the group as less compatible and less supportive; and they were viewed less positively by other group members (Connelly et al., 1986). The Lieberman, Yalom, and Miles (1973) encounter group study discovered a high correlation between low cohesiveness and eventual dropping out from the group. The dropouts had little sense of belongingness and left the group most often because they felt rejected, attacked, or unconnected. Yalom notes that, brief therapy groups pay an especially high price for poor attendance, and therapists must make special efforts to increase cohesiveness early in the life of the group. Yalom summarizes on the relationship between group cohesion and attendance as follows (1995, p. 62):

The relationship between cohesiveness and maintenance of membership has implications for the total group as well. Not only do the least cohesive

members terminate membership and fail to benefit from therapy, but noncohesive groups with high patient turnover prove to be less therapeutic for the remaining members as well.

Summary: Group Therapeutic Factors

A substantial amount of research supports that group therapy is effective. Our best understanding of how group therapy works is based on the concept of therapeutic factors. This concept has evolved over the past 100 years to include between 10 to 12 therapeutic factors. Presently, the most commonly recognized lists of group therapeutic factors are those proposed by Yalom (1995) and Bloch & Crouch (1985). As is found in process research with individual therapy, an emphasis has emerged on the importance of the therapeutic alliance in group therapy which is conceptualized to be analogous to group cohesiveness. The most common technology used in studying therapeutic factors is based on direct and indirect assessment of participants' perception of their experience. Exemplars of this strategy include the Therapeutic Factors Inventory (direct) and the Critical Incidents Questionnaire (indirect) (MacNair-Semands, 2000; Bloch, Reibstein, Crouch, Holroyd, & Themen, 1979). It is recommended that researchers combine these methods with practical variables including absenteeism and group dropout rates (2000).

Sweat therapy and Group Therapeutic Factors

Does intense heat exposure help or hinder the therapeutic quality of group process? This question gets to the heart of this study. Colmant et al. (in press) and Colmant and Merta (2000) are the only researchers to explore the use of intense heat exposure with counseling or therapy. Their preliminary research with sweat therapy suggests that group sweating promotes group therapeutic factors and offers additional

intrapersonal benefits. My work with sweat therapy research began with investigating the American Indian sweat lodge ceremony.

In a descriptive study, Colmant and Merta argued that the sweat lodge ceremony can be seen as a culturally relevant approach to group therapy in working with Navajo youth (1999). This study described the sweat lodge ceremony used at a residential treatment center located on the Navajo Nation and compared the ceremony to modern group work by identifying Yalom's (1995) eleven therapeutic factors of group therapy within the ceremony. Of these factors, those that seemed more readily apparent in the ceremony were Instillation of Hope, Universality, Imparting of Information, Altruism, Development of Socializing Techniques, Imitative Behavior, Group Cohesiveness, Catharsis, and Existential Factors. Other therapeutic features identified as being prominent in the ceremony were that the ceremony is used much like an experiential group activity, promotes moral-cognitive development, and fortifies cultural identity. As is done in experiential group work, the sweat lodge participants were placed in therapeutic groups and were presented with a challenging experience (enduring the intense heat in the sweat lodge) which the leader related to their treatment. Moral-cognitive development was described as being promoted through the practice of prayer and meditation, the development of frustration tolerance, and through discussions of moral reasoning. Greater cultural identity was described as being achieved by the boys being able to participate in a traditional ceremony with their elders where they applied traditional values to contemporary activities.

Observing the worldwide presence of group sweating, Colmant and Merta then completed the first inquiry into the use of a multicultural means of combining group

sweating with group counseling (2000). Four ethnically diverse boys with disruptive behavior disorders residing at a group home participated in twelve sweat therapy sessions using a sauna. Three of the four boys showed improvement in measures of self-esteem and treatment progress in the group home throughout the sweat therapy treatment period. Using the Critical Incidents Questionnaire (Bloch, Reibstein, Crouch, Holroyd, & Themen, 1979), the boys identified experiential group work, catharsis, universality, imitative behavior, and interpersonal learning as prominent therapeutic factors within the sessions. Statements indicating psychological benefits of enduring the heat were identified as an experiential feature. The boys reported that the sweating process helped them relax and relieve stress, left them with a feeling of accomplishment and made statements suggesting the sweating process helped improve their frustration tolerance (Colmant & Merta). Limitations of this pilot study included the small number of participants involved and the lack of a control group.

A third study examined the effects of sweat therapy on group dynamics and affect (Colmant, Eason, Winterowd, Jacobs, & Cashel, in press). Twenty-four undergraduates were separated by sex and randomly assigned to eight sessions of either a sweat or non-sweat group counseling condition. Measures included the Critical Incidents Questionnaire, the Harvard Community Health Plan Group Cohesiveness Scale, and the Positive and Negative Affect Scale. Overall, we found that sweat group participants reported more therapeutic factors that had an impact on their group counseling experience, rated sessions as more beneficial, and interacted with stronger group cohesion than non-sweat participants. Therapeutic factors in sweat groups were greater in terms of overall frequency and in quality of process variables compared to non-sweat

groups by self-report and observational measures (CIQ and GCS). It appeared that group sweating promoted the operation of therapeutic factors and served as a stand-alone therapeutic feature. Experiencing the heat was frequently identified by group members as exerting beneficial effects, specifically relaxation, stress relief, and feelings of accomplishment.

There were several limitations of Colmant et al (in press) study that were addressed in the present study including number of participants, instrumentation, and control. A main limitation of this study was the small number of participants involved (N = 24). Another limitation was based on the instruments used to assess therapeutic factors, the CIQ and the GCS. The CIQ is an indirect measure of participant perceptions of therapeutic factors and the GCS is an observational measure designed to focus on group cohesion. We did not use an instrument with psychometric support that directly assesses the presence of all of Yalom's therapeutic factors such as the Therapeutic Factors Inventory. Currently, the Therapeutic Factors Inventory (TFI) is the only empirically derived and comprehensive assessment of the presence or absence of the 11 therapeutic factors in a particular therapy group (MacNair-Semands, 2000). Differences in absenteeism between sweat and non-sweat groups were not reported on in the Colmant et al (in press) study due to problems with how groups were scheduled. While there was a dramatic difference in the absentee rate for the men's sweat group compared to the men's non-sweat group (3 vs. 25), there was no meaningful difference in the absentee rate between the women's sweat and non-sweat groups (18 vs. 13). However, the women's sweat group was held at the least convenient time (Sunday afternoons) while all the other

groups were held on Tuesday evenings. This problem with control will be addressed in the present study by holding sweat and non-sweat group sessions at more similar times.

Summary

Sweat therapy is the combination of intense heat exposure with psychotherapy or counseling. The above review of literature supports a rationale for research on the effects of sweat therapy on group therapeutic factors and feeling states. Group sweating has had a central place in societies throughout the world for thousands of years. Although separated by oceans, continents and millennia, people have used group sweating for common purposes including physical and mental health, spirituality, and close interpersonal interaction. The use of a sauna offers the most practical means of group sweating for developing sweat therapy as a counseling technique as high quality saunas have been manufactured on a large scale for international use for several generations. Although there is a lack of a coherent, solid accumulation of knowledge concerning the psychological effects of sweating procedures, there have been some interesting findings regarding sweating and psychological well-being that have important implications for therapeutic and preventive mental health purposes. Conceptualizing the sweating experience as a form of exercise offers a pragmatic approach at this point in the development of understanding the psychological effects of sweating procedures.

The usefulness of group counseling and psychotherapy rests on a solid research foundation. Our best understanding of how group therapy works is with the concept of group therapeutic factors. The most common technology used in studying therapeutic factors is based on direct and indirect assessment of participants' perception of their experience. Results from preliminary research with sweat therapy have been positive,

however, as is true with the great majority of the research on the psychological effects of sweating, there is a strong need for replication, with larger samples, better control, and a more effective measurement strategy.

CHAPTER THREE

METHOD

Participants

The 85 participants in this study were college students doing undergraduate or graduate work at Oklahoma State University. There were 51 women and 34 men. The participants' ages ranged from 18 to 32 with a mean age of 21 years. Their average level of education completed was 14 years. The ethnicities of the participants were 60 Caucasian/White, 9 Native American, 7 Hispanic, 6 Asian American and 3 African American. On their prior sauna use, 71 participants reported that they had used a sauna before, 12 reported that they had never used a sauna before, and 2 reported that they were regular sauna users.

Procedure

The principal investigator met with the Head of the School of Applied Health and Educational Psychology (SAHEP) at Oklahoma State University as well as course instructors in SAHEP to inform and solicit their support for this project. Approval by the Institutional Review Board (IRB) for sweat therapy research was first received in February 2002. IRB approval for a continuation with modifications was received in February 2003 and another continuation was received in February 2004. The IRB Application No. for this study is ED0371. See Appendix H. Between 2003 and 2004, the principal investigators recruited participants during course meeting times. The investigators read a brief script to students to explain the study. A sign-up sheet was passed around the class to allow those interested to write their contact information (name, telephone number, & email address). Instructors offered participation in this project as an

alternative way to earn credit toward a course assignment. Some participants volunteered without any additional incentive.

Group counselors interviewed participants to determine their eligibility for participation. The interview included questions regarding students' physical and mental health. It was planned that those who reported that they were pregnant or trying to become pregnant or have an acute heart or lung condition would be ruled out and could not participate. However, no one indicated these conditions being relevant. Only college students who were 18 years old or older were allowed to participate. Participants were informed of the anticipated benefits and risks of being involved in this study. The possible risks of participation include low-level stress exposure including personal and/or interpersonal distress as a result of participating in a group experience. Risks of sweating may involve fatigue and increased heart rate. There are no long-term or permanent negative physiological effects (Hannuksela & Ellahham, 2001). Alcohol intake while sweating can create health risks. Therefore, participants were informed that they were not permitted to drink alcohol prior to or during sweat therapy.

Treatment

Participants were randomly assigned to one of two conditions: (a) Sweat group: Group counseling in a sauna; or, (b) Non-sweat group: Group counseling in a standard office setting. Five participants who had scheduling problems were assigned to a condition based on their availability. These participants were blind to which group time indicated which condition. Of the five, two were assigned to a sweat group and three were assigned to a non-sweat group. Twelve groups were conducted: six sweat groups and six non-sweat groups. The twelve groups included; four coed sweat groups, one

men's sweat group and one women's sweat group matched by four non-sweat coed groups, one men's non-sweat group and one women's non-sweat group. The size of the groups ranged from 6 – 8 participants. There were a total of 46 participants in the sweat condition and 39 participants in the non-sweat condition. The sweat condition included 19 men and 27 women. The non-sweat condition included 15 men and 24 women.

The groups met weekly for six sessions. The purpose of the groups was to facilitate personal and interpersonal growth as well as to help participants become more effective in dealing with daily stressors. The groups were facilitated in the form of Yalom (1995) interpersonal process groups with a focus on the here-and-now and member-to-member interactions. The use of group sweating differed from what is traditionally considered a technique or structured exercise. For the sweat groups, the heat was used as a medium for interpersonal process. We did not use the sweating experience as a leader directed activity to guide individual members to respond in a particular way.

The sweat groups were held at a YMCA or health club in the local community. The non-sweat groups were held at a university counseling psychology clinic. Sweat group participants began by spending four, ten-minute intervals in a sauna interspersed by five-minute breaks. During breaks, the session continued in an adjacent room. Counselors encouraged participants to drink water frequently and to take breaks whenever they felt it necessary. Over time, the sweat therapy groups were encouraged to gradually build up to completing four, fifteen-minute intervals in the sauna. The temperature in the sauna was 145° Fahrenheit.

The group counselors were three female and three male doctoral students in counseling psychology and one female in a master of social work program. Two of the

investigators were also counselors. The counselors attended four training sessions prior to the start of the study. They learned about Yalom's theory of group psychotherapy which served as the theoretical foundation for both group conditions. They were also trained for their particular treatment condition. Each counselor received individual, weekly supervision from one of the two licensed psychologists who were research team members to ensure treatment adherence.

Measures

Measures used in this study included an informed consent form, an intake form, the Critical Incidents Questionnaire (CIQ), the Therapeutic Factor inventory (TFI), the Exercise Induced Feeling Inventory (EFI) and the Subjective Exercise Experiences Scale (SEES). The CIQ was administered at the end of each of the six sessions. The TFI was administered as a post-test at the end of the last session. There were five administrations of the EIFI and the SEES at the fourth session: just before the session began (pre-test), 45-minutes into the session (during), at the end of the session (post), two-hours after the session (2-hours post), and the next day (next day post): PRE, DURING, POST, 2-HR POST, NEXT DAY POST. Participants were asked to take home two sets of the EIFI and the SEES to complete two hours after the end of the session and to complete the NEXT DAY POST by 10:00 AM the following day.

Critical Incidents Questionnaire (CIQ; Bloch, Reibstein, Crouch, Holroyd, & Themen, 1979). The CIQ is useful in understanding the effect of group from each member's perspective, as well as for assessing how specific therapeutic factors influence group effectiveness (DeLucia-Waack, 1997). The researchers identified participant perceptions of therapeutic factors by employing Bloch, Reibstein, Crouch, Holroyd, and

Themen's (1979) system. This involves having participants respond to the following question: "What event (incident, interaction) from this group session was most helpful to you?" "Describe what happened, the feelings you experienced, and how the event was helpful to you." Two of the researchers experienced with the CIQ coded statements using 11 therapeutic factors: Catharsis, Self-disclosure, Learning from interaction with others, Universality, Acceptance (measuring Cohesion), Altruism, Guidance, Self-understanding, Vicarious learning, Instillation of hope, and Experiential group work. Experiential group work was identified as a therapeutic factor in this study for statements indicating psychological benefits received from enduring the heat. The percentage of inter-rater agreement was 90%.

The CIQ included a modification developed by Merta (Colmant & Merta, 2000) to measure the degree of benefit group members perceive receiving from a session. At the top of the CIQ form, participants were asked to rate the statement, "I found this group very useful" on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Lower scores are interpreted to mean that the participant found the session less useful and higher scores are interpreted to mean that the participant found the session more useful. Participants completed the CIQ at the end of each group.

Therapeutic Factors Inventory (TFI; Lese & MacNair-Semands, 2000).

The TFI is designed to provide a comprehensive, empirically-based measure to determine the presence or absence of therapeutic factors in a particular group. The TFI assesses group member perceptions of the degree to which the therapeutic factors described by Yalom (1995) are present in a given group. Scales of the TFI include Instillation of Hope, Universality, Imparting Information, Altruism, Corrective Reenactment of the

Primary Family Group, Development of Socializing Techniques, Imitative Behavior, Interpersonal Learning, Cohesiveness, Catharsis, and Existential Factors. The instrument has nine items per scale, with a total of 99 items. Items are assessed along as seven-point Likert-type scale rated from 1 (strongly disagree) to 7 (strongly agree). An example of a statement used to measure Cohesiveness is, “We cooperate and work together in group.” The TFI has good internal consistency (from .88 for altruism to .94 for cohesion) and test-retest reliability (Lese & MacNair-Semands, 2000; MacNair-Semands & Lese, 2000). The TFI also has good convergent and discriminant validity (Mills & MacNair-Semands, 2003). In this study, the TFI was administered as a post-test.

Exercise-Induced Feeling Inventory (EFI; Gauvin & Rejeski, 1993)

The EFI is a 12-item adjective scale designed to measure four feeling states that are especially sensitive to the stimulus properties of exercise, namely, positive engagement, revitalization, physical exhaustion, and tranquility. Respondents rate current feelings on a 5-point intensity scale ranging from “Do not feel” to “Feel very strongly.” The adjectives within the Positive Engagement subscale are: enthusiastic, happy, and upbeat. The adjectives within the Revitalization subscale are: refreshed, energetic, and revived. The adjectives within the Tranquility subscale are: calm, relaxed, and peaceful. The adjectives within the Physical Exhaustion subscale are: fatigued, tired, and worn-out. Initial psychometric data support the validity and reliability of the EFI (Gauvin & Spence, 1998). Inter-item consistency of the different subscales is high ($\alpha = .80$) (Gauvin & Spence, 1998). Special efforts were devoted to establishing the content validity of the scale for exercise research through the gathering of expert opinions. Factorial validity was strong and consistent across two samples of college students.

Convergent and discriminative validities were also established. Test-retest reliability estimates was reported in excess of .70 (Rejeski, Reboussin, Dunn, King, & Sallis, 1999). Finally, the scale has been shown to be sensitive to exercise manipulations across several studies and samples of adults (e.g., Spence, Gauvin, & Sellers, 1995; Vlachopoulos et al., 1996). Vlachopoulos et. al. (1996) reported further support for the psychometric attributes of the EFI with a sample of adolescents 11 to 15 years old. The EIFI was designed to be amenable to multiple administrations and to be used to rate feeling states during the activity itself (EFI; Gauvin & Rejeski, 1993) There were five administrations of the EFI at the fourth session: Pre, During, Post, 2-hr Post, Next Day Post.

Subjective Exercise Experiences Scale (SEES; McAuley & Courneya, 1994)

The SEES was developed specifically to measure exercise-related affect. The SEES is a 12-item adjective scale requiring the subject to rate current feelings along a 7-point intensity scale ranging from “Not at all” to “Very much so.” The main question asks “How do you feel right now?” The instrument provides three subscale scores that are sensitive to the stimulus properties of exercise, namely, positive well-being, psychological distress, and fatigue. The adjectives within the Positive Well-Being subscale are: great, positive, strong, and terrific. The adjectives within the Psychological Distress subscale are: awful, crummy, discouraged, and miserable. The adjectives within the Fatigue subscale are: drained, exhausted, fatigued, and tired. Scoring of the SEES consists of adding the four items of each dimension providing a range of 4-28. The SEES has been demonstrated to be a valid and reliable measure of affect in various exercise settings (Lox & Rudolf, 1994; McAuley & Courneya, 1994). The SEES has been shown to have high inter-item consistency ($\alpha = .85$), good factorial validity, and appropriate

convergent and divergent validity (Gauvin & Spence, 1998). All three subscales demonstrate impressive reliability (.84 to .92) (McAuley & Courneya, 1994). There were five administrations of the SEES at the fourth session: Pre, During, Post, 2-hr Post, Next Day Post.

Data Analysis

Data analysis in this study focuses on representing findings graphically. The use of statistical inference testing has increasingly come under fire in the last decade. The confusing nature of the complex mathematical formula that underlie many tests of statistical inference leads to their misuse and prevents optimum communication among researchers. This issue has been especially problematic in the field of group work in which the research design often violates basic principles of common tests of statistical inference. By contrast, findings using graphical representation of data are loud and clear and more easily understood. Graphs are more sensitive than all or none decisions of statistical hypothesis tests and may be especially optimal with exploratory research. Graphs are a uniquely powerful means of discovering, interpreting, and promulgating scientific findings.

The most common way, by far, of analyzing and interpreting quantitative data in counseling psychology is with null hypothesis inference testing. Although the problems of the null hypothesis testing strategy have been long known, there has been an accelerating condemnation of this strategy as an appropriate methodology for psychology (e.g., Bakan, 1966; Carver, 1978; Cohen, 1990, 1994; Guttman, 1985; Hunter 1997; Loftus, 1991, 1993; Meehl, 1967; Oakes, 1986; Rozenboom, 1960; Schmidt, 1996; Tracey, 2000). Tracey (2000) describes eleven major problems with null hypothesis

inference testing: 1) the improbability of the null hypothesis, 2) misperception of meaning of rejection of null, 3) misperception of meaning of failure to reject the null, 4) arbitrary basis of discrete decision-making, 5) confusion of significance level and importance, 6) ignoring Type II error, 7) inappropriate confirmatory nature of hypothesis testing, 8) overuse of omnibus testing, 9) bias against non-significant results, 10) confirmatory bias, and 11) failure to account for measurement error.

Using tests of statistical inference have been especially problematic in the field of group work. Most tests of statistical inference such as ANOVA and MANOVA use mathematical models based on assumptions that make them inappropriate for group work research questions. The independence of observations is a fundamental assumption of normal linear theory models. This simplifying assumption can be traced to the development of ANOVA for use in agricultural research, a context in which independence of observations is readily obtained (Kenny & La Voie, 1985). Hoyle, et al. (2001) explain that independence of observations is not so easily obtained in research with humans, who function in a complex social world, and, in the case of research on groups, “it is inconsistent with many theoretical models and the sampling design indicated by those models” (p. 42). When the independence assumption is violated, inferences drawn from the results of analyses using standard models are highly suspect. The source of the problem is the estimation of variance. Although violating the independence assumption is described as contributing to Type 1 error, Kenny and colleagues have shown that, across a variety of designs, the problem can serve to increase or decrease Type 1 error (Kenny, Kashy, & Bolger, 1998).

In one of the first examinations of how researchers studying individuals in groups address the nonindependence problem, Anderson and Ager (1978) found that about half of the articles in the 1975 volume of the *Journal of Personality and Social Psychology* that reported results of such research used individual-level data without acknowledging the problem nonindependence. In an examination of publication trends in group psychotherapy research, Burlingame et al. (1994) found that almost 90% of group psychotherapy studies published from 1980 to 1992 analyzed individual scores without evaluating the tenability of the independence assumption. Hoyle, Georgesen, and Webster (2001) examined the empirical research on groups published during a 15-year period indicated a modest degree of progress in confronting the challenge of nonindependence in group data. They reported that, authors were slightly more inclined to acknowledge the nonindependence problem in the late 1990s than in the early 1980s. The standard remedy was to use the group mean as the unit of analysis (2001). Using the group mean, of course, reduces the effective sample size considerably; however, this will not cause as drastic a drop in power since the means are much more stable than individual observations and hence, the within group variability will be far less (Stevens, 2002).

A viable alternative to tests of statistical inference is graphical representation of data. In the October 2002 issue of the *American Psychologist*, there was a call for the increased use of graphs in psychological research. Because graphs provide a compact, rhetorically powerful way of representing research findings, recent theories of science have postulated their use as a distinguishing feature of science (Smith, Best, Stubbs, Archibald, & Roberson-Nay, 2002). Studies have shown that the use of graphs in journal articles correlates highly with the hardness of scientific fields, both across disciplines and

across sub-fields of psychology. In contrast, the use of tables and inferential statistics in psychology is inversely related to subfield hardness, suggesting that the relationship between hardness and graph use is not attributable to differences in the use of quantitative data in subfields or their commitment to empiricism (2002). The authors conclude that, “enhanced ‘graphicacy’ among psychologists could contribute to the progress of psychological science by providing alternatives to significance testing and by facilitating communication across subfields” (p.749).

CHAPTER FOUR

RESULTS

Therapeutic Factors

The first purpose of this study was to investigate the effects of sweat therapy on group therapeutic factors. It was hypothesized that the sweat therapy group participants would perceive a greater availability of therapeutic factors, report sessions to be more useful, and have greater attendance than regular (non-sweat) group counseling participants.

Critical Incidents Questionnaire (CIQ)

The CIQ was used to answer the following research question: “What differences exist in the frequencies of therapeutic factors identified by participants in the sweat therapy and non-sweat group counseling conditions?” It was hypothesized that sweat therapy participants will report a greater overall frequency of therapeutic factors than non-sweat participants. It was also hypothesized that the sweating process (coded as Experiential Features) will be one of the top three most frequent therapeutic features identified by sweat therapy participants. To answer this research question, participants’ responses on the CIQ were coded by raters and summed for each participant across the six sessions. Then, the frequencies of therapeutic factors were summed up for each group and across each condition (sweat and non-sweat groups).

Of the 366 forms completed by group participants, 82 could not be classified for therapeutic factors. Analysis of the remaining 284 forms revealed that there was 67% more therapeutic factors identified for the sweat groups than the non-sweat groups (198 vs. 87 respectively, $\chi^2(13) = 7.90, p = .005$). The largest differences between the sweat

and non-sweat groups were for Acceptance (sweat = 88 vs. non-sweat = 27), $\chi^2(13) = 7.40$, $p = .006$, Interpersonal Action (sweat = 40 vs. non-sweat = 14), $\chi^2(13) = 7.70$, $p = .006$], Universality (sweat = 26 vs. non-sweat = 14) and Self-Disclosure (sweat = 18 vs. non-sweat = 12). The frequency scores for Universality and Self-Disclosure across the sweat and non-sweat conditions were not statistically significant (Universality $\chi^2(13) = 2.2$, $p = .12$; Self-Disclosure $\chi^2(13) = .82$, $p = .37$). Other differences were minimal with no other therapeutic factor reflecting more than a difference of three between the sweat and non-sweat groups. Statements reflecting Experiential Features were minimal (sweat = 4 vs. non-sweat = 1). See Figure 1 for a comparison of the frequency of therapeutic factors identified for each condition. See Table 1 for a breakdown of the frequency of therapeutic factors identified for each group.

In summary, results indicated that the sweat participants perceived a greater availability of therapeutic factors than non-sweat participants, especially for Acceptance and Interpersonal Action. Statements reflecting Experiential Features were minimal. These results support the hypothesis that sweat therapy participants would report a greater overall frequency of therapeutic factors than non-sweat participants and do not support the hypothesis that the sweating process (coded as Experiential Features) will be one of the top three most frequent therapeutic features identified by sweat therapy participants.

Figure 1.

Frequency of Therapeutic Factors by condition using the Critical Incidents

Questionnaire

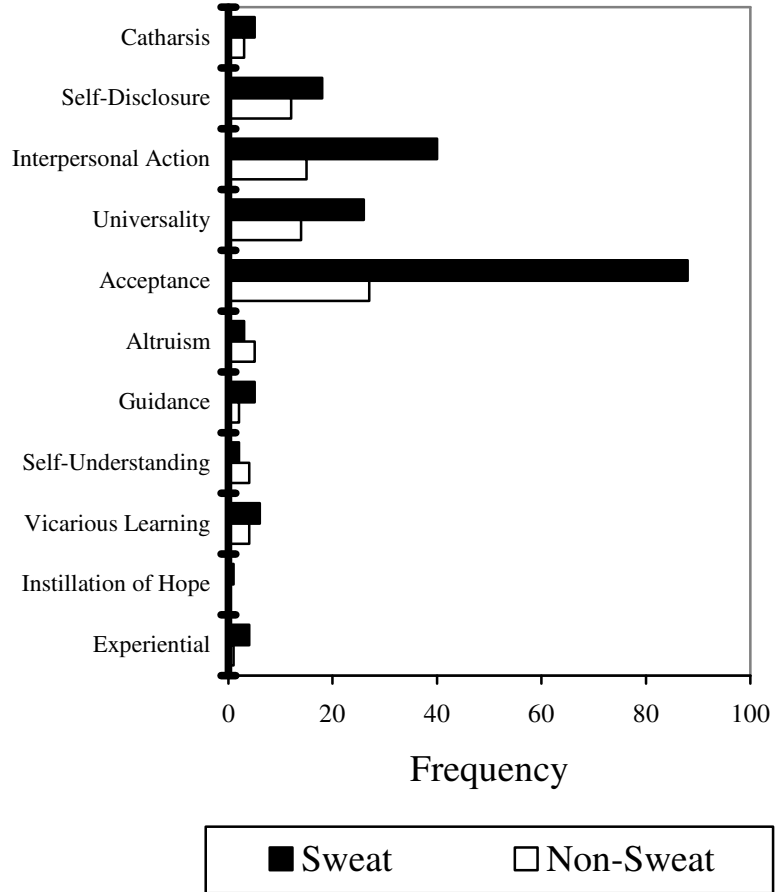


Table 1

Frequency Scores for Therapeutic Factors (CIQ) by Sweat and Non-Sweat Groups

	NON-SWEAT GROUPS						
	Coed	Coed	Women's	Men's	Coed	Coed	
	<u>Grop 1</u>	<u>Group 2</u>	<u>Group 3</u>	<u>Group 4</u>	<u>Group 5</u>	<u>Group 6</u>	<u>TOTAL</u>
1. Catharsis	0	2	0	0	1	0	3
2. Self-Disclosure	2	3	2	1	2	2	12
3. Interpersonal Action	5	2	1	1	2	4	15
4. Universality	7	2	1	1	1	2	14
5. Acceptance	2	5	2	4	3	11	27
6. Altruism	1	1	0	1	1	1	5
7. Guidance	0	0	0	1	0	1	2
8. Self-Understanding	0	0	2	1	0	1	4
9. Vicarious Learning	0	0	1	1	0	2	4
10. Instillation of Hope	0	0	0	0	0	0	0
11. Experiential	1	0	0	0	0	0	1
TOTAL	18	15	9	11	10	24	87

Table 1. (Continued)

	SWEAT GROUPS						<u>TOTAL</u>
	Coed	Coed	Coed	Men's	Women's	Coed	
	<u>Group 7</u>	<u>Group 8</u>	<u>Group 9</u>	<u>Group 10</u>	<u>Group 11</u>	<u>Group 12</u>	
1. Catharsis	0	2	0	0	1	2	5
2. Self-Disclosure	4	7	3	1	0	3	18
3. Interpersonal Action	5	8	8	8	5	6	40
4. Universality	1	7	3	8	5	2	26
5. Acceptance	19	18	14	15	12	10	88
6. Altruism	1	0	0	1	1	0	3
7. Guidance	1	1	0	1	0	2	5
8. Self-Understanding	0	0	1	1	0	0	2
9. Vicarious Learning	3	0	3	0	0	0	6
10. Instillation of Hope	0	0	0	0	0	1	1
11. Experiential	0	0	0	4	0	0	4
TOTAL	34	43	32	39	24	26	198

Therapeutic Factor Inventory (TFI)

The TFI was used to answer the following research question: “What differences exist in how participants in the sweat therapy and non-sweat group counseling conditions perceived the degree to which group therapeutic factors are present?” It was hypothesized that sweat therapy participants would report the presence of a greater degree of group cohesion and interpersonal learning than non-sweat participants. To answer this question, means and standard deviations were calculated for the TFI scales across each condition. Weighted means of means for the TFI scale scores for each

condition were calculated to control for the unequal numbers of participants in each group.

Sweat participants perceived a greater presence of therapeutic factors than non-sweat participants at the end of their group experience. There was a total of 57 TFI forms completed (sweat = 31, non-sweat = 26). The following scores are weighted means of the means for the sweat and non-sweat conditions. The largest differences between participants in the sweat and non-sweat groups were for Cohesiveness (sweat = 53.1 vs. non-sweat = 44.3), Altruism (sweat = 47.1 vs. non-sweat = 39.6), Interpersonal Learning (sweat = 44.9 vs. non-sweat = 38.0), and Catharsis (sweat = 46.2 vs. non-sweat = 40.6). No other difference between the conditions on subscale means was larger than five points. See Figure 2 for a comparison of the TFI weighted mean of the means scores for each condition. See Table 2 for the TFI mean of the means scores and standard deviations.

In summary, results indicated that the sweat participants perceived a greater presence of therapeutic factors than non-sweat participants at the end of their group experience, especially for Cohesiveness, Altruism, Interpersonal Learning, and Catharsis. The hypothesis that sweat therapy participants would report the presence of a greater degree of group cohesion and interpersonal learning than non-sweat participants was supported.

Figure 2.

Weighted Means of the Means for Therapeutic Factor Inventory Scale Scores for Sweat and Non-sweat Group Participants

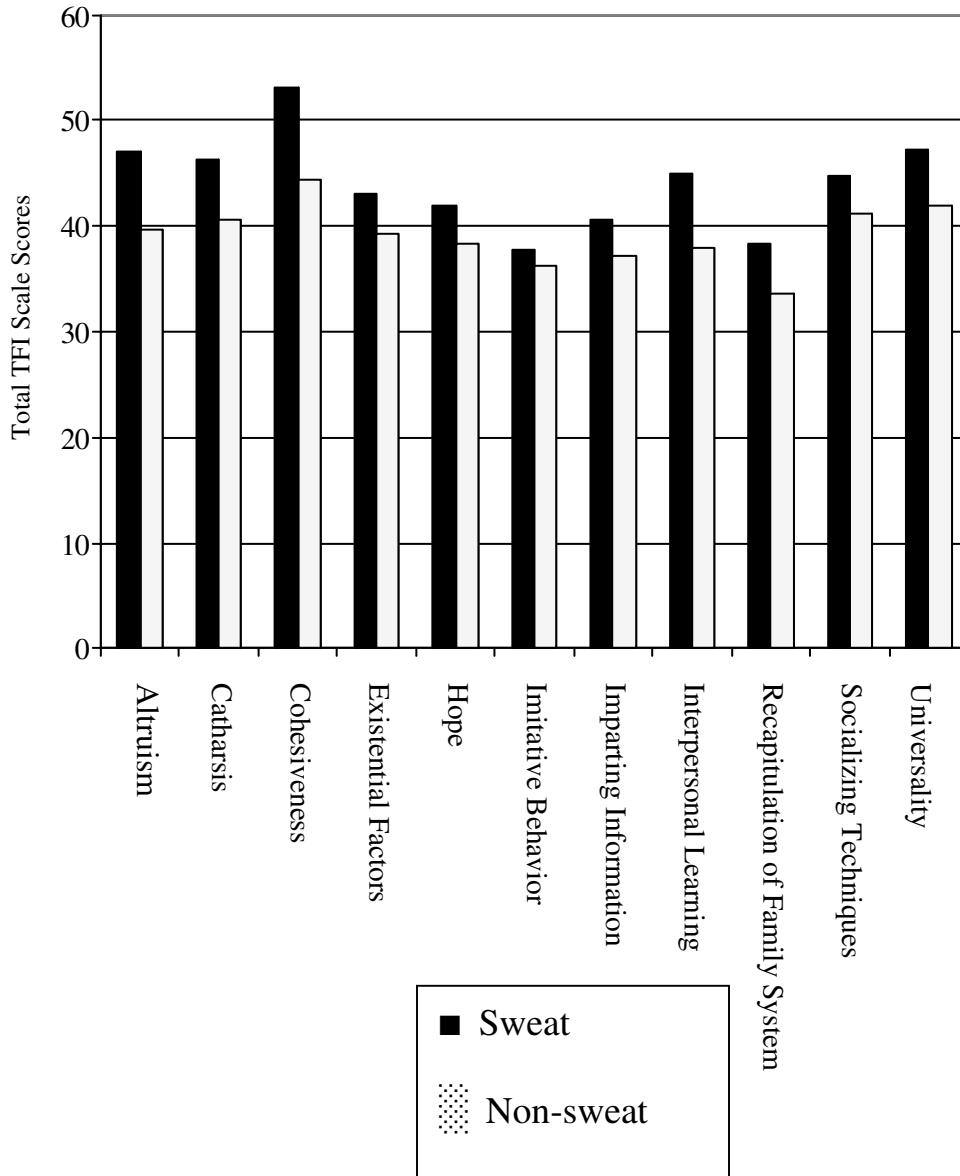


Table 2

TFI Scales Weighted Means of the Means and Standard Deviations for Each Group

	Non-Sweat Groups		Sweat Groups	
	Mean of the Means	SD	Mean of the Means	SD
Altruism	39.6	4.73	47.1	2.97
Catharsis	40.6	3.73	46.2	4.73
Cohesion	44.3	3.60	53.1	4.14
Existential Factors	39.2	2.70	43.0	2.86
Hope	38.4	3.79	41.9	2.38
Imitative Behavior	36.2	5.36	37.7	4.13
Imparting Information	37.1	3.15	40.6	3.53
Interpersonal Learning	38.0	3.25	44.9	3.66
Recapitulation of the Family	33.6	3.76	38.3	5.29
Socializing Techniques	41.1	3.10	44.7	3.75
Universality	42.0	3.87	47.3	2.98

Usefulness

The Usefulness scale was used to answer the following research question: “What differences exist in how college students in sweat therapy and group counseling conditions rate the usefulness of their groups?” It was hypothesized that sweat therapy

participants would report that sessions were more useful than non-sweat participants. To answer this research question, means and standard deviations were calculated for the Usefulness scale across each condition. Weighted means of means for the Usefulness scale scores for each condition were calculated to control for the unequal numbers of participants in each group.

Overall, the Usefulness weighted mean of means for the sweat condition was in the Very Useful range while the Usefulness weighted mean of the means for the non-sweat condition was in the Moderately Useful range. See Figure 3 for a comparison of the weighted mean of the means scores for each condition. See Table 3 for the Usefulness mean scores and standard deviations for each group. The hypothesis that sweat therapy participants would report that sessions were more useful than non-sweat participants was supported.

Figure 3

Weighted means of the means of Usefulness scores for each condition.

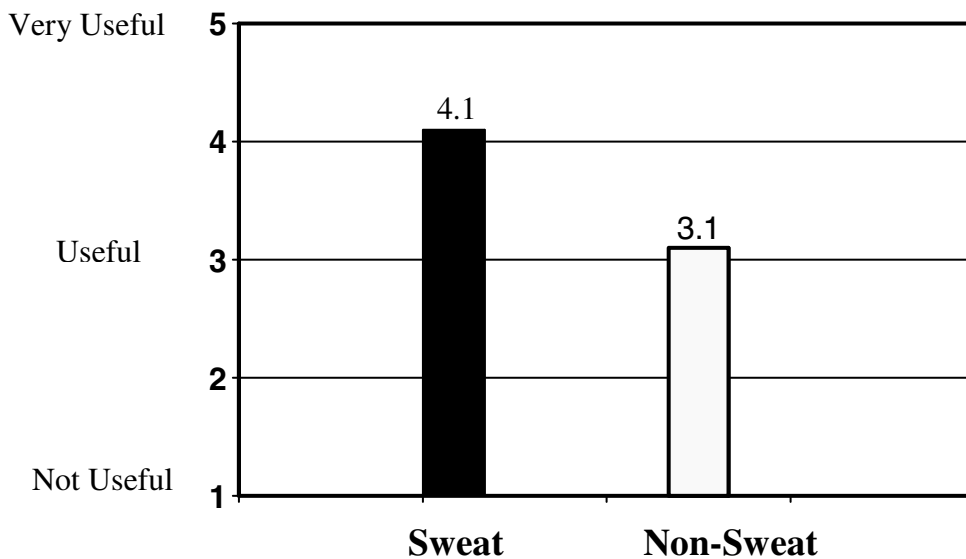


Table 3.

Usefulness Means and Standard Deviations for Each Group

Group Membership	Mean	N	Std. Deviation
Non-Sweat Group 1 (Coed)	3.1	6	.63
Non-Sweat Group 2 (Coed)	2.7	6	.29
Non-Sweat Group 3 (Women's)	2.7	7	.53
Non-Sweat Group 4 (Men's)	3.1	6	.34
Non-Sweat Group 5 (Coed)	3.2	7	.54
Non-Sweat Group 6 (Coed)	3.4	7	.47
Sweat Group 7 (Coed)	4.1	8	.51
Sweat Group 8 (Coed)	4.1	8	.60
Sweat Group 9 (Coed)	3.9	7	.58
Sweat Group 10 (Men's)	4.1	8	.44
Sweat Group 11 (Women's)	3.9	7	.38
Sweat Group 12 (Coed)	4.2	8	.49

Absenteeism & Group Dropouts

For absenteeism, the research question asked, “Are there differences in group member absenteeism for the sweat therapy group participants and non-sweat group counseling participants?” It was hypothesized that participants in the sweat groups will have less participant absenteeism and group dropouts than participants in the non-sweat groups. To answer this research question, a total absentee score for each participant was

derived by summing the number of absences for each participant over the six sessions. Participants were classified as group dropouts for participants who missed all of the last four sessions. Overall, absenteeism was 12% greater in the non-sweat condition. There were 46 sweat participants and 39 non-sweat participants for six sessions. There were 59 absences in the sweat condition with an absentee rate of 21% and 78 absences in the non-sweat condition with an absentee rate of 33%. The average number of absences per person in the sweat condition was 1.2 (SD = 1.2) while the average number of absences per person in the non-sweat condition was 2.0 (SD = 1.8). The difference between the conditions on absenteeism was not statistically significant, $\chi^2(86) = 2.72, p = .10$. See Figure 4 for a comparison of the absentee rate and Figure 5 for a comparison of the number of dropouts. The number of group dropouts for the sweat condition was 1 while the number of group dropouts for the non-sweat condition was 9. See Table 4 for the total number of absences and dropouts for each group. The hypothesis that sweat groups will have less participant absenteeism and group dropouts than non-sweat groups was supported.

Figure 4. Absenteeism

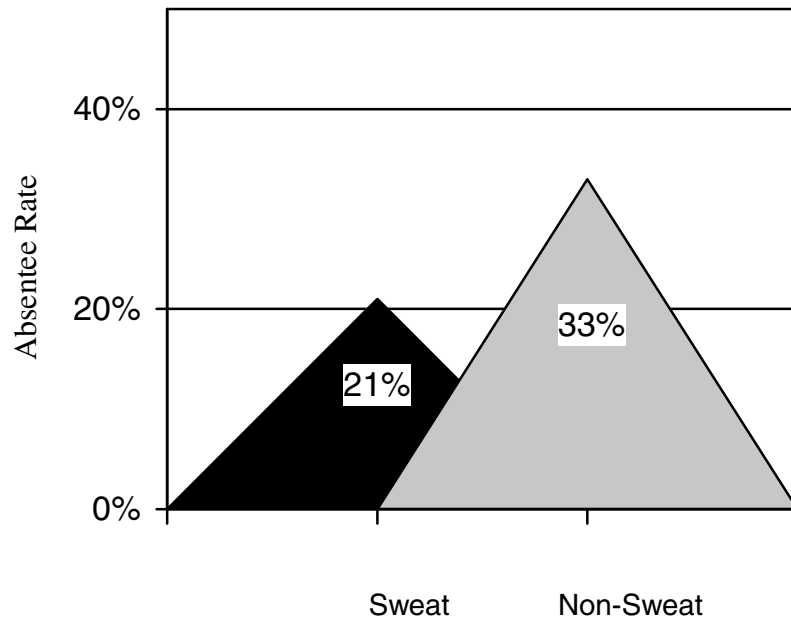


Figure 5. Dropouts

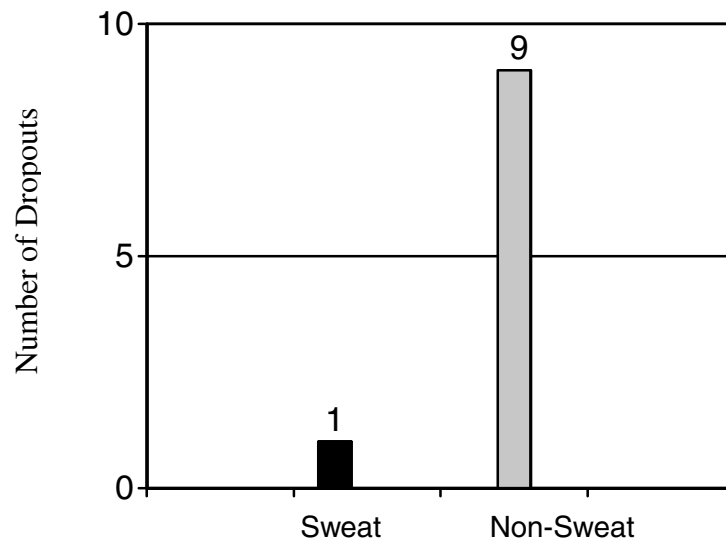


Table 4. Absenteeism & Dropouts

Total Absences and Dropouts for Each Group

Group Membership	n	Total Absences	Total Dropouts
Non-Sweat Group 1 (Coed)	n = 6	9	0
Non-Sweat Group 2 (Coed)	n = 6	5	0
Non-Sweat Group 3 (Women's)	n = 7	22	3
Non-Sweat Group 4 (Men's)	n = 6	11	2
Non-Sweat Group 5 (Coed)	n = 7	21	3
Non-Sweat Group 6 (Coed)	n = 7	10	1
Sweat Group 7 (Coed)	n = 8	9	0
Sweat Group 8 (Coed)	n = 8	4	0
Sweat Group 9 (Coed)	n = 7	9	0
Sweat Group 10 (Men's)	n = 8	8	0
Sweat Group 11 (Women's)	n = 7	12	0
Sweat Group 12 (Coed)	n = 8	17	1

Feeling States

The second purpose of this study was to investigate the effects of sweat therapy on feeling states. The research question was, “What differences exist in how college students in the sweat therapy and group counseling conditions felt emotionally during session 4, including before the session, during the session, just after the session, 2 hours after the session, and the day after the session?” It was hypothesized that sweat therapy group participants would report higher scores on positive feeling state subscales on the SEES and EIFI than non-sweat participants at the four time points after baseline. To answer this question, means and standard deviations were calculated for the feeling states scales across each condition at each of the five time points. Weighted means of means for the feeling states scales for each condition were calculated to control for the unequal numbers of participants in each group. The positive feeling states subscales were positive well-being, positive engagement, revitalization, and tranquility. Overall, the differences in feeling states between the two conditions for the five time points ranged from slight to moderate. See Table 5 for means and standard deviations of feeling state subscales for each condition across the five time points. The largest differences between the two conditions were at two hours post session with participants in the sweat condition reporting less fatigue, more revitalization, and less physical exhaustion than the participants in the non-sweat condition.

Table 5

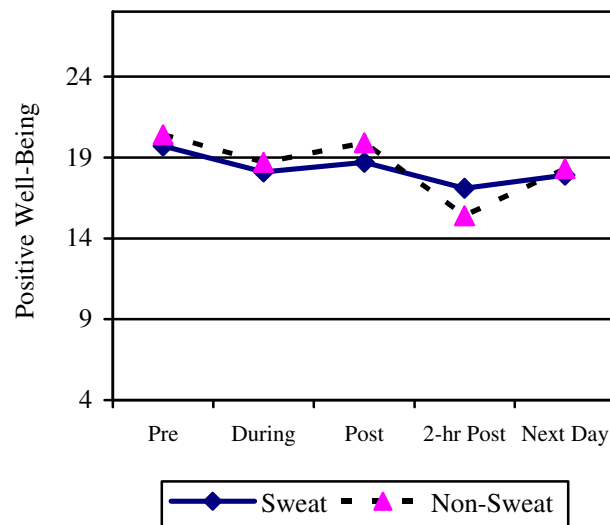
Group means and standard deviations for feeling states (SEES and EIFI) subscales

	Assessment time				
	Pre	During	Post	2-hr Post	Next Day
SEES					
Positive Well-Being					
Sweat	19.7(2.1)	18.1(2.4)	18.7(1.8)	17.1(2.6)	18.0(2.1)
Non-Sweat	20.5(1.7)	18.6(2.4)	18.9(2.6)	15.4(1.1)	18.4(1.1)
Psychological Distress					
Sweat	8.6(1.6)	8.5(3.0)	7.3(1.4)	8.0(1.8)	7.6(1.6)
Non-Sweat	7.7(2.1)	7.3(1.8)	7.2(.96)	8.9(1.7)	7.5(1.6)
Fatigue					
Sweat	15.2(3.2)	13.1(3.9)	14.1(3.9)	12.7(2.6)	9.7(2.2)
Non-Sweat	15.0(1.5)	13.9(3.7)	12.7(4.6)	18.8(2.2)	11.1(2.1)
EIFI					
Positive Engagement					
Sweat	7.3(1.2)	6.7(1.5)	7.2(1.7)	5.6(.91)	6.7(1.0)
Non-Sweat	8.2(.97)	7.9(.83)	7.4(1.0)	6.1(1.2)	7.0(1.0)
Revitalization					
Sweat	5.4(1.5)	5.8(1.6)	7.5(1.6)	6.0(1.2)	6.5(1.1)
Non-Sweat	5.7(1.1)	6.0(1.3)	6.2(1.0)	4.1(1.1)	7.0(1.2)
Physical Exhaustion					
Sweat	5.8(1.2)	5.7(1.4)	6.8(1.9)	5.2(1.3)	4.1(.9)
Non-Sweat	6.1(1.0)	5.8(1.8)	6.0(1.1)	8.9(1.5)	5.1(.94)
Tranquility					
Sweat	6.6(1.1)	7.3(1.6)	8.3(1.4)	7.5(1.9)	7.5(1.3)
Non-Sweat	6.9(1.1)	6.6(1.2)	7.4(1.0)	6.8(.57)	7.5(.78)

Subjective Exercise Experiences Scale (SEES)

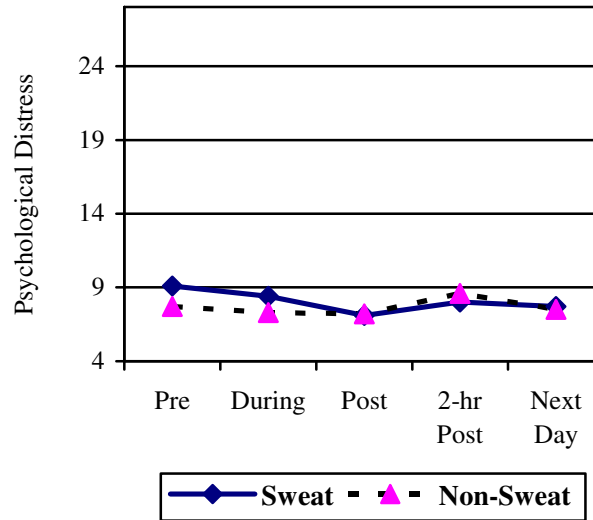
The adjectives within the Positive Well-Being subscale are: great, positive, strong, and terrific. Both conditions were high for positive well-being, as measured by the SEES, at baseline. There was a gradual decrease for both conditions from baseline through post-session (see Figure 6). The sweat condition was slightly higher than the non-sweat condition for positive well-being at two hours post-session (weighted means of means: sweat = 17.1 vs. non-sweat = 15.4). By the next day, both conditions were similar on positive well-being.

Figure 6. Positive Well-Being Weighted Mean of the Means SEES



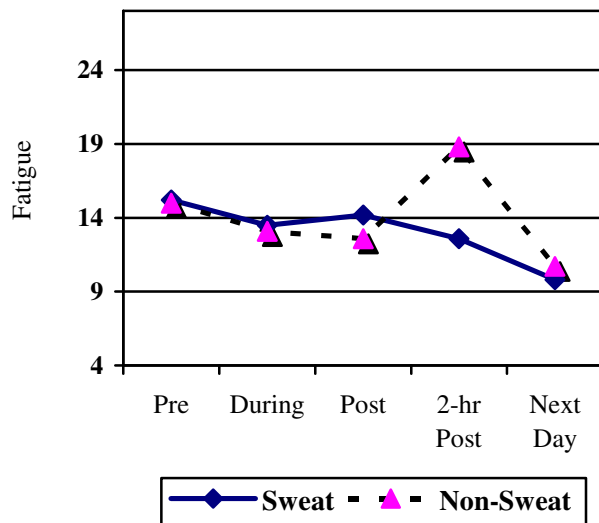
Participants in both conditions remained low on psychological distress over time (see Figure 7). The adjectives within the Psychological Distress subscale are: awful, crummy, discouraged, and miserable.

Figure 7. Psychological Distress Weighted Mean of the Means SEES



The adjectives within the Fatigue subscale are: drained, exhausted, fatigued, and tired. Both conditions resulted in moderate fatigue from baseline to immediately post-session (see Figure 8). At two hours post-session, the non-sweat condition resulted in an increase in fatigue while the sweat condition began to decrease in fatigue (weighted means of means: sweat = 12.6 vs. non-sweat = 18.8). Fatigue was lowest for both conditions at next day post-session.

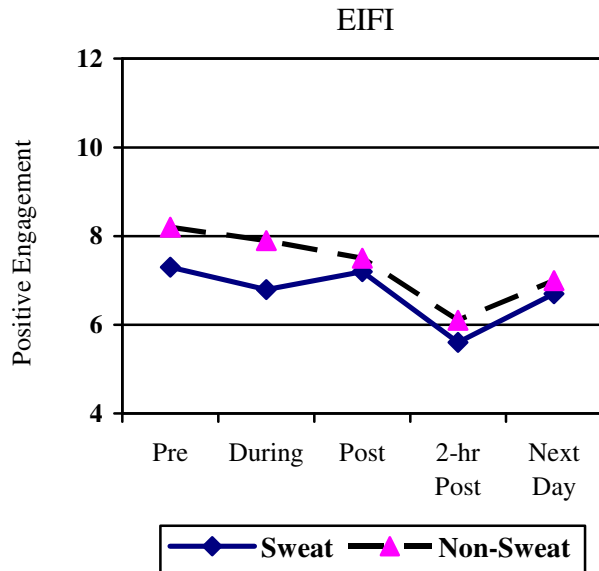
Figure 8. Fatigue Weighted Mean of the Means
SEES



Exercise Induced Feeling Scale (EIFI)

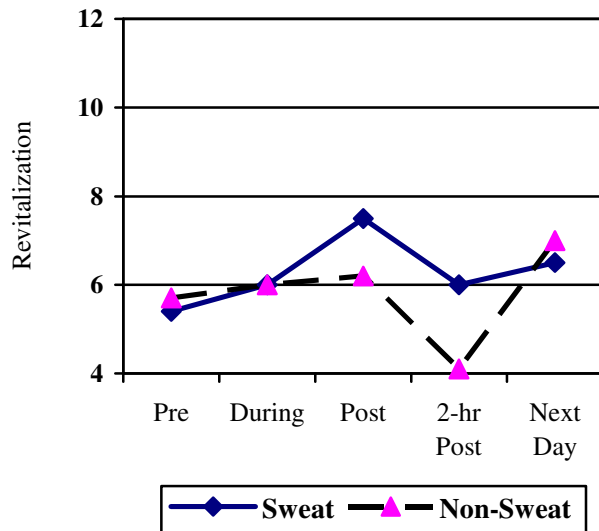
The adjectives within the Positive Engagement subscale are: enthusiastic, happy, and upbeat. Positive engagement was moderate for both conditions at baseline. Both conditions resulted in a slight decline in positive engagement from baseline to during session. At immediately post-session, the non-sweat participants' positive engagement continued to gradually decline while the sweat participants positive engagement slightly increased. Participants in both conditions were lowest on positive engagement at two hours post-session and increased to slightly below baseline at next day post-session (see Figure 9).

Figure 9. Positive Engagement Weighted Mean of the Means



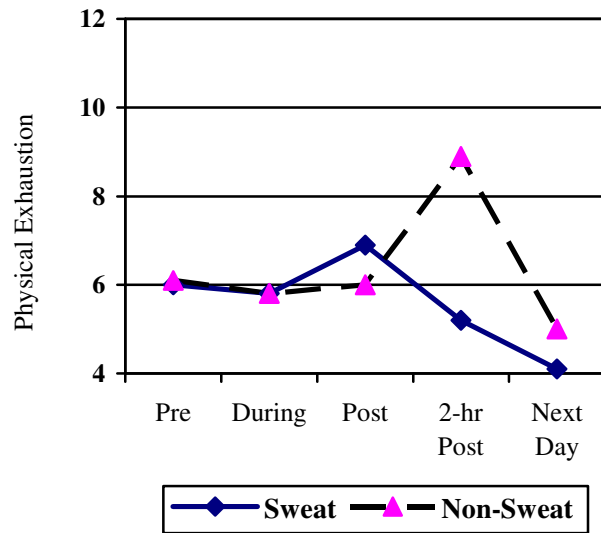
The adjectives within the Revitalization subscale are: refreshed, energetic, and revived. Revitalization was low for both conditions at baseline. Both conditions resulted in a gradual increase in revitalization from baseline to during-session. At immediately post-session, the sweat condition resulted in a sharp increase while the non-sweat condition rose linearly (see Figure 10). However, this difference between the two group conditions was slight (weighted means of the means: sweat = 7.5 vs. non-sweat = 6.2). Revitalization for both conditions decreased at two hours post-session with greater revitalization for participants in the sweat condition (sweat = 6.0 vs. non-sweat = 4.1). Revitalization was slightly above baseline at next day post-session.

Figure 10. Revitalization Weighted Mean of the Means
EIFI



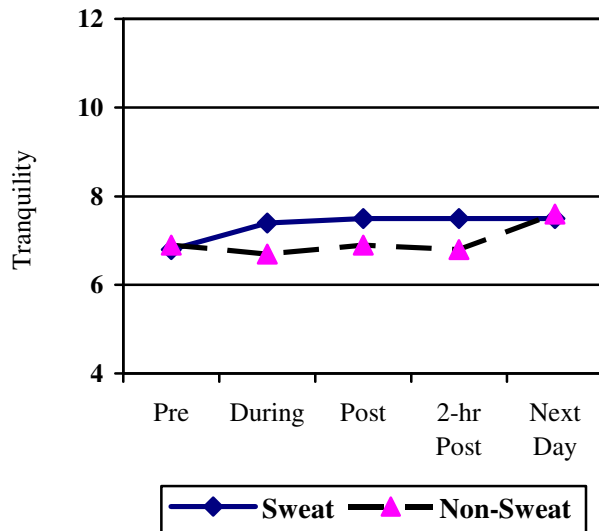
The adjectives within the Physical Exhaustion subscale are: fatigued, tired, and worn-out. Both conditions remained low for physical exhaustion from baseline to immediately post-session (see Figure 11). At two hours post-session, physical exhaustion sharply increased for the non-sweat condition while decreasing for the sweat condition (weighted means of the means sweat = 5.2 vs. non-sweat = 8.9). Physical exhaustion was lowest for both conditions at next day post-session.

Figure 11. Physical Exhaustion Weighted Mean of the Means
EIFI



The adjectives within the Tranquility subscale are: calm, relaxed, and peaceful. Both conditions gradually increased in tranquility from baseline to immediately post session with slightly higher tranquility for the sweat condition (see Figure 12). Both conditions gradually decreased in tranquility from immediately post-session to next day post-session, ending in the moderate range.

Figure 12. Tranquility Weighted Mean of the Means
EIFI



In summary, the hypothesis that sweat therapy group participants would report higher scores on positive feeling state subscales on the SEES and EIFI than non-sweat participants at the four time points after baseline was not supported. Revitalization at two-hours post-session, was the only positive feeling state subscale that sweat therapy group participants reported higher scores on than non-sweat participants. Overall, the largest differences between the two conditions were at two hours post session with participants in the sweat condition reporting less fatigue, more revitalization, and less physical exhaustion than participants in the non-sweat condition.

CHAPTER FIVE

DISCUSSION

The primary purpose of this study was to examine the efficacy of sweat therapy as a group counseling technique by investigating the effects of sweat therapy on group therapeutic factors with a group of college students. The second purpose of this study was to explore the effects of sweat and non-sweat group counseling conditions on feeling states to investigate one aspect of how group sweating functions. The findings of the present study support and extend previous findings that sweat therapy has positive effects on group therapeutic factors (Colmant et al., in press). Overall, the sweat therapy groups appeared to have greater therapeutic quality compared to the non-sweat groups as measured by direct and indirect assessment of participants' perceptions of their experience and by practical variables. Sweat therapy group participants perceived a greater availability of therapeutic factors, reported sessions to be more useful, and had less absenteeism and group dropouts than non-sweat group counseling participants. The present results extend our understanding of these processes by providing empirical evidence that group sweating intensifies group counseling processes through interpersonal bonding and interaction. The most prominent therapeutic factors identified for the sweat therapy groups were Cohesion and Interpersonal Learning.

The participants in the non-sweat condition had 12% more absenteeism than the participants in the sweat condition. Although this difference was not statistically significant, it may have clinical importance due to the strong relationship between attendance and group cohesion (Yalom, 1995). The disparity in group cohesion between the sweat and non-sweat conditions was observed, perhaps most dramatically, by the

amount of group dropouts. The finding that the non-sweat condition had nine times the amount of group dropouts as the sweat condition may be especially meaningful since people who terminate group early tend to receive little benefit from group. Furthermore, the entire group is thought to pay a price with reduced therapeutic quality when a group member prematurely terminates from the group (Yalom, 1995). In their meta-analytic review of group therapy, Burlingame, Fuhriman, & Anderson (1995) found attrition rate to be one of the most robust predictors of the structural and dynamic factors that contribute to greater or lesser improvement over the aggregated studies reviewed (Burlingame et al., 1995).

These results raise questions that have important implications for the field of group work, multicultural principles, and for future research. Group work has a prominent place in psychology and the helping fields. Group is considered an effective treatment modality with a wide range of disorders using a variety of treatment models. Approximately two-thirds of people who participate in group psychotherapy report significant improvements (Holmes & Kivlighan, 2000; Shechtman 2003). At present, our best technology in understanding how group therapy works is with the concept of group therapeutic factors. Of the 10 to 12 group therapeutic factors, Group Cohesion and Interpersonal Learning are considered especially critical to an effective therapy experience (Yalom, 1995). Since sweat therapy appears to cause a greater activation of therapeutic factors, especially for Cohesion and Interpersonal Learning, are outcomes such as character change and symptom relief also improved? Is less time needed in sweat therapy groups compared to standard groups? Since group members find sweat therapy more useful, attend better, and dropout less than group members in typical group

counseling (i.e., office setting), would offering sweat therapy be a way to attract more people to make use of group counseling services? It seems very likely based on the results of this study.

The feeling states of sweat and non-sweat participants were evaluated over the course of four time points (after baseline) during a middle session to assess whether feelings states might differ during the session, immediately afterwards, two-hours post-session, and at 24-hours after the session. Overall, participants in these two conditions appeared to differ with regard to their feeling states of fatigue, revitalization, and physical exhaustion 2 hours following the group intervention. In particular, sweat participants, on average, felt less fatigued, more revitalized, and less physically exhausted two hours following the group experience compared to non-sweat participants. This appears to indicate the benefits of sweat therapy in providing stress relief and relaxation (using the subscales of fatigue and physical exhaustion to indicate aspects of stress). This is consistent with previous reports that sauna reduces negative affect (Colmant & Merta, 2000; Gutierrez, Vazquez, & Beumont, 2002; Kuusinen & Markuu, 1972; Sorri, 1988; and Sudakov, Sinitchkin, & Khasanov, 1988). The findings from the present study did not support Frankva and Franek's findings that sauna causes significant positive effects on immediate mental states (1990). However, the present study might not be a good comparison since the participants were not regular sauna users while the participants in the Frankva and Franek study were regular sauna users (1 year minimum).

The findings of the present study with feeling states measures do not support the notion that the sweat experience causes immediate changes in feeling states which could have corresponding positive effects group dynamics. On average, the feeling states

measured during the session were almost identical between the sweat and non-sweat conditions. The full implications of the present results on feeling states are unclear. One possibility is that the small to moderate effects on feeling states caused by the sweat experience are of little consequence. Conversely, it seems reasonable that anticipating that one will feel better or worse after a session would be important to therapeutic quality of group sessions. It may be that sweat participants were reinforced for their attendance with improved feeling states. Better feeling states might have caused better attendance and group dropout rates thus affecting group therapeutic quality. Since this study did not include a “sweat-only” condition which excluded group counseling and only included the sweat experience, a third possibility is that the differences in reported feeling states were not due to intense heat exposure but rather are a result of enhanced therapeutic quality of the group interaction caused by some other aspect of the experience (relaxed atmosphere, dimmed lighting, etc.).

It is important to mention two theoretical possibilities for how sweat therapy operates, which might help explain the positive findings in this study (i.e., group cohesion, interpersonal learning, less group-dropouts). First, from clinical experience with sweat therapy, group members often seem to perceive the sweating experience as a moderate challenge to which they respond by seeking social support (Cohesion) and engaging in thinking that promotes self-esteem (e.g.: “Although I’m uncomfortably hot, I am staying in the sauna because doing so will make me better in some way.”). This notion builds on the literature on coping and stress (Lazarus & Folkman, 1984; Lazarus & Launier, 1978). The therapists in this study commented on how the physical act of sweating together promoted therapeutic factors. The sweat condition seemed to prompt

altruism which quickly moved to cohesion. Group members seemed to work together as a unit to get through the heat by offering towels and water to one another and showing frequent concern for one another's ability to handle the heat. These behaviors often happened within the first two rounds of the first session and became part of the group norms. These seemingly simple expressions of sharing and concern for one another helped members feel part of the group and transcended into people showing greater care and concern for one another when discussing deeper topics. For some, wearing less clothing prompted discussions of body image issues. Self-disclosing about personal experience coping with the heat transcended into how members cope with other stressors.

Second, the idea of sweat therapy is attractive to many people. Participants in this study might have been more interested in the sweat condition than the non-sweat condition. Several people contacted group facilitators outside of our solicitation efforts for participants. Also, despite the preliminary nature of this research, it should be mentioned that conducting this research generated significant public interest, including local, national, and international media sources. One theory that explains the attraction to sweat therapy is Psycho-Evolutionary theory of Outdoor Education. Psycho-Evolutionary theory (PET) is gaining popularity in the Outdoor Education and Adventure Therapy field. PET states that humans are suffering from a lack of primary nature-based and indigenous culture-based experiences and so are driven to them and get mental and physical benefits when experiencing them (Neil, Gray, Ellis-Smith, Bocarro, Sierra, & Desai, 2004). The act of intense sweating is a primary nature-based activity indigenous to ethnic groups throughout the world and provides several primary nature-based symbols including fire, rocks and water.

This study identifies a secular way of incorporating a practice to which many ethnic groups have an important connection. There is consensus among advocates of cultural diversity that modern psychotherapy needs to be adapted to a multicultural perspective. Using practices that transcend culture and time (e.g.: art, meditation, music, dance, & group sweating) as a catalyst for growth in the counseling process, provides a common language for people of different backgrounds. Hopefully, this study will encourage others to investigate indigenous forms of healing and identify other methods of helping that have strong multicultural relevance.

Limitations of the Study

Although the findings of the present study are encouraging, some additional limitations need to be noted. First, these findings may be limited by the sample studied. The participants in this study were not pursuing counseling services and their motivation for counseling might have been low. It may be that sweat therapy is most useful with groups for whom it is difficult to promote therapeutic quality. Comparing groups comprised of a clinical population seeking counseling might look very different. Therefore, future researchers should consider investigating the effects of sweat therapy on group therapeutic factors with a clinical population seeking counseling, utilizing adequate comparison groups. Second, the present results are based predominantly on self-report measures. Replication with other methods of data collection (e.g., observer ratings) would be beneficial in future research. Third, absenteeism and group dropouts were used as indicators of group therapeutic quality. There may have been other unknown reasons for absenteeism and group dropouts such as scheduling problems or other personal stressors. Fourth, the seating arrangements in the saunas used were set in

an “L” shape rather than a circle. Use of a sauna with circular seating would lend itself better to group processing. Fifth, two of the researchers served as group therapists and as coders for the CIQ and may have unintentionally favored the sweat condition. To help eliminate potential experimenter bias, therapists should not be a part of the research team and CIQ coders should be blind to participant conditions.

Areas for Future Research

There are several aspects of group sweating other than high ambient temperature that might influence group therapeutic quality. Some examples might include a relaxed atmosphere, dimmed lighting, wearing less clothing, sitting in close proximity, drinking large quantities of water, or intense pheromones. Trying to isolate the multiple dimensions of group sweating was beyond the scope of this study. Rather, the purpose was to investigate group sweating as a holistic technique in group work. Group sweating has strong cultural validity, is traditionally used for many of the same purposes as group counseling and the process lends itself well to group counseling. In this study, group sweating was described as being comparable to physical exercise. Future research should compare sweat groups to groups that also include an experiential component where intense physical activity is prominent. However, it is difficult to identify an intense physical activity that accommodates group processing as well as group sweating. Group sweating does not require movement or attention to a physical skill, which would interfere with group processing.

Future research should explore the use of sweat therapy with specific group populations and issues. Potential populations for sweat therapy research would seem to include groups for whom promoting therapeutic factors is especially challenging and

people who would benefit from participating in a process-facilitated, intense physical experience. Some candidates might include people with anxiety disorders, body-image issues, personality disorders, and youth with disruptive behavior disorders. Sweat therapy research with youth with disruptive behavior disorders has already begun (Colmant & Merta, 1999; 2000).

As previously described, those with frustration tolerance problems are especially challenged when the sweating experience becomes an effort of endurance. Similarities between problem situations for people with anxiety disorders or anger management problems and intense heat exposure are that body temperature rises, heart rate is increased, sweating is induced, and negative self-talk begins, thus, people who have difficulty remaining calm and/or pro-social when in a physiologically escalated state would seem to benefit from sweat therapy. There are, however, likely differences between the physiological responses to heat stress and the situations that cause people to become overly anxious or aggressive. This raises several questions for which neurobiological research is needed. What is the hormonal response to sweat therapy for people with specific psychiatric disorders? Are there changes after prolonged regular use?

To better understand the effects of sweating on feeling states, future researchers should consider investigating the effects of sweat therapy on feeling states using higher temperatures, at different times of day, and beyond two-hours-post sweating. The temperature of the sauna used in this study was approximately 145° Fahrenheit. By some standards this might be considered cool. Many sauna enthusiasts recommend temperatures of 176° to 194° Fahrenheit. Future researchers should investigate the

effects of heat exposure on feeling states using different temperatures. In addition, there might be an optimum time of day to benefit from sweating. The idea of relaxing in a sauna might seem very appealing after a hard day's work and aversive in the early morning. In this study, sessions were held at 8:00 PM. Perhaps sessions held earlier in the evening would result in more intense feeling states when not competing with the need for sleep. The full effects of sweating on feeling states might occur beyond two-hours-post-session and before the next morning. Future researchers should consider measuring the effects of sweat therapy on feeling states at additional time points, beyond two-hours-post and before the next morning.

The hypothesis that the sweating process would be one of the top three most frequent therapeutic features identified by sweat therapy participants was not supported by the present results. Unlike previous studies (Colmant & Merta, 2000, Colmant et al, in press), statements on the CIQ reflecting Experiential Features were minimal in the present study. This finding also contradicts numerous anecdotal reports by group therapists in this study that participants often mentioned psychological benefits from the sweating experience. Furthermore, some participants wrote statements on the CIQ that seemed to reflect a link between immediate effects of sweating and group therapeutic factors. For example, one participant wrote, "The most helpful experience was being able to sit in a sauna room and sweat with the other girls. I felt I could be more open. I just thought the time wasn't long enough." Another statement reflected that the participant benefited from Vicarious Learning and Self-Disclosure that was influenced by the sweating experience. The participant wrote:

One member talked about how she handled situations by using others as examples. That helped me to realize that I take an event and just do it.

Sometimes I think it through, but I never use others opinions to persuade me. I think sweat therapy is very helpful. It gives you a drunk feeling. You can let loose, you don't care what others think of you. You just say what's on your mind.

Therapists also commented on how the sweat experience had psychological effects on themselves that were useful to their role. For example, a therapist describing feeling more alert, genuine and involved with group members when facilitating sweat groups, made the following comments:

As a facilitator, I felt like I could struggle and grow with the participants in the heat. It's hard to describe, but I felt more connected to the group members than I do when I normally facilitate groups. I also felt more alert as a therapist. In the heat I feel more perceptive since my body is stimulated in many ways, it's easier to account for everything that's going on. I also think it makes the therapist more human. The guise of expertise is taken away by joining the client in the activity.

The low frequency of therapeutic factors coded as experiential features may have been a result of the lack of supervision when administering the CIQ. From previous experience using the CIQ, participants often require prompting to be elaborate and detailed when completing the form. Future researchers should also consider using qualitative methods to enhance the understanding of the intrapersonal and interpersonal effects of sweat therapy compared to non-sweat group therapy. Qualitative interviewing would allow for a deeper understanding of the complexity of both participants' and therapists' experiences in sweat therapy and the processes that they believe were helpful and meaningful to them.

An innovative way of using the CIQ emerged while conducting this study. Future researchers might explore interfacing the Usefulness score with the CIQ coded statement to provide an intensity rating for therapeutic factors. The question on Usefulness could be revised to have better connection to the critical event by asking, “How useful/beneficial was this event to you?” Expanding the Likert scale from five-points to seven would allow for greater variance. This could help provide better understanding of how therapeutic factors are perceived and might be especially useful when comparing participants’ experiences in different groups or conditions.

This study focused on representing findings graphically because of the unique power of graphs as a means of discovering, interpreting, and promulgating scientific findings (Smith, Best, Stubbs, Archibald, Roberson-Nay, 2002). The small number of groups (N = 12) limited the analyses that could be conducted with inferential statistics. Often group researchers do not study group-level phenomena because they simply cannot find enough groups to use a traditional research design (e.g., between subjects designs; Kivlighan, Coleman, & Anderson, 2000). Robinson, Moran, and Hulse-Killacky (1988) proposed an alternative way of handling this problem. They suggested that ABAB and multiple baseline designs, two types of single-subject research designs, could be used to address important group level questions in one or a few groups (2000). Future researchers interested in studying sweat therapy but lacking access to a sufficient number of groups, might consider these designs.

Conclusion

There is nothing new under the sun, as the saying goes. Group sweating is an ancient wisdom practice highly regarded throughout the world for its ability to promote

healing and well-being. This study contributes to the evidence needed to determine whether group sweating should be added to standard psychological practice. People are primed to receive benefits from group sweating on multiple levels. From the review of the cultural validity of group sweating, group sweating has practical utility and universal appeal. Literature on the practical utility of group sweating includes that it promotes physical and mental health, spirituality, and close interpersonal action. Group sweating having strong transcendental validity indicates that it is rooted in the unconscious and structured by underlying psychobiological features. Our best empirical evidence for the psychobiological features of group sweating at this time includes the effects of sweating on hormonal changes. The results of this study provide empirical support for the theory that sweat therapy enhances the quality of group process and is a useful medium for group work. This study also adds to our understanding of how group sweating operates by specifically implicating improved feeling states (less fatigue, physical exhaustion & revitalization) lasting several hours. At this point, a priority for future research should be to explore the use of sweat therapy with specific group populations and issues. Trying to understand the full effects of group sweating, the underlying mechanisms and why this practice remains central to many cultural groups, promises critical insight into multiple psychological, biological and sociological areas of knowledge.

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APPENDIX A: Intake Form

DATE:

INTAKE FORM

NAME: _____

ADDRESS: _____

HOME TELEPHONE: _____ WORK
TELEPHONE: _____

EMAIL: _____

DATE OF BIRTH: _____ AGE: _____

GENDER: ___ Female ___ Male

ETHNICITY: (please mark all that apply) ___ African American/Black
___ American Indian/Native American ___ Asian ___ Caucasian/White
___ Hispanic/Latino

U.S. CITIZEN: ___ Yes ___ No – If not, citizen of what
country? _____

MARITAL STATUS: ___ Single ___ Married ___ Separated ___ Divorced
___ Widowed

If married, number of years married: _____

RELIGIOUS AFFILIATION (if
any): _____

LAST YEAR COMPLETED IN SCHOOL: _____

CURRENT
OCCUPATION: _____

EMERGENCY CONTACT PERSON (name, address, & telephone number):

ARE YOU CURRENTLY RECEIVING SERVICES FROM ANOTHER THERAPIST /
COUNSELOR? ____ Yes _____ No – If yes, please provide contact information and
reasons.

PLEASE CIRCLE IF YOU HAVE EXPERIENCED ANY OF THE FOLLOWING
DURING
THE PAST SIX MONTHS:

Heart murmur
Breathing Problems
Respiratory Disease
Asthma
Blood Transfusion
Cancer
Diabetes
Eating Problems
Fainting Spells / Dizziness
Frequent / Severe Headaches
Frequent Tiredness
Frequent Trouble Sleeping
Heart Disease
Heart Problems
Weight Gain / Loss (how much pounds)
Kidney Disease
Seizures
Severe Backache
Sexually Transmitted Disease
Stomach Problems
Stroke
Surgery
Thyroid Disease
Unexplained worry or fearfulness
Other Health Problems (please specify):

HAVE YOU HAD PROBLEMS WITH ANY OF THE FOLLOWING IN THE PAST
SIX MONTHS?:

Suicidal thoughts/feelings
Homicidal thoughts/feelings
Hallucinations
Delusions

IF YES, TO ANY OF THE ABOVE, EXPLAIN:

ARE YOU HAVING ANY THOUGHTS OF HARMING YOURSELF OR OTHERS?

HAVE YOU EVER TRIED TO HARM YOURSELF OR OTHERS IN THE PAST?

ARE YOU CURRENTLY BEING TREATED BY A PHYSICIAN? Yes No - If yes,
for what reasons?

DO YOU HAVE ANY BREATHING OR LUNG PROBLEMS? YES NO

DO YOU HAVE ANY HEART PROBLEMS? YES NO

PLEASE CIRCLE YOUR PRESENT STATE OF HEALTH:

Excellent Good Fair Poor

HAVE YOU EVER HAD A SERIOUS MEDICAL ILLNESS / DISEASE? If yes, please
explain:

ARE YOU CURRENTLY OR DO YOU PLAN TO BECOME PREGNANT IN THE
NEXT THREE MONTHS? YES NO

DO YOU SMOKE? Yes No - If yes, how much/often?

DO YOU DRINK? Yes No - If yes, how much/often?

HAVE YOU EVER USED A SAUNA BEFORE? YES NO

DO YOU USE A SAUNA OR SWEAT LODGE ON A REGULAR BASIS? YES NO
If yes, indicate below as to how often:

Once per month Twice per month Once per week More than once per week.

Do you exercise regularly? Yes No
If so, what type of exercise do you do?

- | | | |
|--|---------------------------------------|---|
| <input type="checkbox"/> Weight lifting | <input type="checkbox"/> Basketball | <input type="checkbox"/> Yoga |
| <input type="checkbox"/> Running | <input type="checkbox"/> Tennis | <input type="checkbox"/> Stationary Cardio Machine (ie: treadmill, stair master, stationary bike, etc.) |
| <input type="checkbox"/> Bicycling | <input type="checkbox"/> Football | |
| <input type="checkbox"/> Aerobics | <input type="checkbox"/> Racquet Ball | |
| <input type="checkbox"/> Rock Climbing | <input type="checkbox"/> Swimming | |
| <input type="checkbox"/> Other, Please specify _____ | | |

HOW OFTEN ON AVERAGE DO YOU EXERCISE?

- ONE HOUR per WEEK TWO HOURS per WEEK THREE HOURS per WEEK
 FOUR HOURS per WEEK FIVE HOURS per WEEK SIX HOURS per WEEK
 SEVEN HOURS per WEEK MORE THAN SEVEN HOURS per WEEK.

APPENDIX B: Critical Incidents Questionnaire

Group Response

I found this group very useful (circle one of the numbers below).

1	2	3	4	5
strongly disagree		somewhat agree		strongly agree

What event (incident, interaction) from this group session was most helpful to you?

Describe what happened, the feelings you experienced, and how the event was helpful to you.

Recommendations for changing this group session or future ones:

APPENDIX C: Exercise Induced Feeling Inventory

Instructions: Please use the following scale to indicate the extent to which each word below describes how you feel at this moment in time. Record your responses by filling-in the appropriate circle next to each word.

0 = Do Not Feel (DNF)
1 = Feel Slightly
2 = Feel Moderately
3 = Feel Strongly
4 = Feel Very Strongly (FVS)

<p>1. Refreshed DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>2. Calm DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>3. Fatigued DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>4. Enthusiastic DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>5. Relaxed DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>6. Energetic DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p>	<p>7. Happy DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>8. Tired DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>9. Revived DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>10. Peaceful DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>11. Worn-out DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p> <p>12. Upbeat DNF 0 1 2 3 4 FVS ○ ○ ○ ○ ○</p>
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Scoring for the Exercise-Induced Feeling Inventory (EFI)

The EFI consists of 4 distinct subscales. Subscale scores are obtained by summing or averaging the numerical values chosen for the adjectives within a particular subscale. The four subscales include: (1) Positive Engagement (items 4, 7, & 12), (2) Revitalization (items 1, 6, & 9), (3) Tranquility (items 2, 5, & 10), and (4) Physical Exhaustion (items 3, 8, & 11)

APPENDIX D: Subjective Exercise Experiences Scale

How Do You Feel?

This inventory contains a number of items designed to reflect how you feel at this particular moment in time (i.e., Right Now). Please circle the number on each item that indicates **HOW YOU FEEL RIGHT NOW**.

I FEEL:

- | | | | | | | |
|----------------|---|---|------------|---|---|--------------|
| 1. Great | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 2. Awful | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 3. Drained | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 4. Positive | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 5. Crummy | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 6. Exhausted | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 7. Strong | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 8. Discouraged | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |
| 9. Fatigued | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at all | | | moderately | | | very much so |

10. Terrific						
1	2	3	4	5	6	7
not at all			moderately			very much so
11. Miserable						
1	2	3	4	5	6	7
not at all			moderately			very much so
12. Tired						
1	2	3	4	5	6	7
not at all			moderately			very much so

Subjective Exercise Experiences Scale :

Positive Well-Being = 1 + 4 + 7 + 10

Physical Distress = 2 + 5 + 8 + 11

Fatigue = 3 + 6 + 9 + 12

APPENDIX E: Informed Consent

INFORMED CONSENT

A. AUTHORIZATION

I, _____, hereby authorize or direct Stephen A. Colmant, MA, LPC, or associates or assistants of his or her choosing, to perform the following treatment or procedure.

B. DESCRIPTION OF RESEARCH AND ASSOCIATED RISKS/BENEFITS

The name of this research project is Sweat Therapy. It is being conducted through Oklahoma State University. The research team includes students and faculty of the School of Applied Health and Educational Psychology. The purpose of this research project is to investigate the effects of group sweating on group dynamics. The therapists will be doctoral or masters students in Counseling Psychology at OSU and/or faculty members in the Counseling Psychology program at OSU. Groups may be comprised of either your sex only or coeducational, depending upon your preference. Several questionnaires will be given that deal with coping with stress, psychological symptoms, positive and negative emotion, and group processes. For the first and last sessions, participants will be asked to complete three questionnaires which should take no more than 30 minutes to complete. For the other sessions in between, participants will be asked to complete 2 short questionnaires which should take no more than 10 minutes to complete. All sessions will also be audio recorded and are only being used for research purposes. All subject data including audio recordings will be locked and secured in the Counseling Psychology Clinic in Willard building at OSU and will be destroyed when the study is published. Participants will be randomly assigned to one of two groups. Some of the groups will include sauna use. The groups not using a sauna will be held at either the Counseling Psychology Clinic in Willard building at OSU or the YMCA. The sauna groups will take place at the YMCA on Duck Street here in Stillwater or Body Works Health Club on Perkins Rd. Group participants minimal attire in the sauna will be a bathing suit. You may wear additional clothing in the sauna if you wish. In the sauna group participants will begin by spending four, twelve-minute intervals in a sauna interspersed by five-minute breaks. Counselors will encourage participants to take breaks whenever they feel it necessary. The temperature in the sauna will be approximately 145° Fahrenheit. Participants will be encouraged to gradually build up to completing four, fifteen-minute intervals. The total time of each group will be about one hour and twenty minutes. Anticipated possible risks include low-level stress exposure. The groups including counseling will be in the format of interpersonal growth groups. Participants may experience some personal and/or interpersonal distress as a result of participating in a stress management group experience. This may occur as people begin to share personal experiences as well as hear other group members' experience. This is not atypical for people who participate in group counseling. For most people, sauna bathing is well tolerated and safe. Sauna bathing does not cause drying of the skin, lower fertility in men or women, nor is it harmful in moderation for healthy women with uncomplicated pregnancies. Although sweating may increase itching in peoples with atopic dermatitis, people with psoriasis may experience some relief. Some physiological

benefits of sweating may include improved cardiovascular functioning, and detoxification, which allows the body to rid itself of unwanted materials.

Sauna bathing is contraindicated during high-risk pregnancies and for people with unstable angina pectoris, recent myocardial infarction, severe aortic stenosis, decompensated heart failure, and cardiac arrhythmia. Some studies have reported ECG changes, ectopic beats, and perfusion defects suggestive of myocardial ischemia in people with coronary heart disease, but these occur less frequently during sauna bathing than during exercise. Alcohol intake while sauna bathing can create serious health risks and should be avoided. Research team members and/or group therapists for this study will interview study participants individually about their physical and mental health status to determine appropriateness of participation. **In this study, people with significant heart or lung problems, diabetes, and pregnant women will not be permitted to participate.**

Specific psychological benefits from this research project may include gaining intrapersonal and interpersonal skills, and stress relief. The research team plans to write about the information collected from this study and publish an article in an academic journal. The data collected are confidential and all data will be written up so that no individual participant will be identified. Written feedback will be provided to you at the completion of this study. Although there are minimal psychological and physical risks of participating in this study, if you experience any undue discomfort or anxiety as a result of your participation, your group facilitator or Stephen Colmant or his designated representative will be available for consultation. Stephen Colmant can be reached at (405)547-2617. Additional contact: Sharon Bacher, IRB Executive Secretary, Oklahoma State University, 203 Whitehurst, Stillwater, OK 74078. Phone: 405-744-5700.

C. VOLUNTARY PARTICIPATION

I understand that participation is voluntary and that I will not be penalized if I choose not to participate. I also understand that I am free to withdraw my consent and end my participation in this project at any time without penalty after I notify the project director.

D. CONSENT DOCUMENTATION FOR WRITTEN INFORMED CONSENT

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____
(a.m./p.m.)

Time:

Name (typed)

Signature

APPENDIX F: Script

Script

We are inviting you to participate in a research project called Sweat Therapy. It is being conducted through Oklahoma State University by students and faculty within the School of Applied Health and Educational Psychology Program.

We are asking for volunteers to participate in one individual intake session and six, one hour per week, group sessions. The purpose of this research project is to investigate the effects of group sweating on group dynamics. Several questionnaires will be given that deal with positive and negative emotion, and group processes. All sessions will also be audio recorded and are only being used for research purposes. All subject data, including audio recordings, will be locked and secured in the Counseling Psychology Clinic in Willard building at OSU and will be destroyed when the study is published.

As participants, you will be randomly assigned to one of two groups. The group counselors will be masters or doctoral students in Counseling Psychology at OSU. One of the groups will include sauna use. The non-sauna group will be held at the Counseling Psychology Clinic in Willard Hall at OSU. The sauna groups will take place at the YMCA or Bodyworks Health Club here in Stillwater. Minimal attire in the sauna will be a bathing suit. You may wear additional clothing in the sauna if you wish. In the sauna groups, participants will begin by spending four, ten-minute intervals in a sauna interspersed by five-minute breaks. Counselors will encourage participants to take breaks whenever they feel it necessary. The temperature in the sauna will be approximately 145° Fahrenheit. Participants will be encouraged to gradually build up to completing

four, fifteen-minute intervals in the sauna. The groups including counseling will be in the format of interpersonal growth groups with a focus on coping with stress.

Participants may experience some personal and/or interpersonal distress as a result of participating in a stress management group experience. This may occur as people begin to share personal experiences as well as hear other group members' experience. This is not atypical for people who participate in group counseling. For most people, sauna bathing is well tolerated and safe. Sauna bathing does not cause drying of the skin, lower fertility in men or women, nor is it harmful in moderation for healthy women with uncomplicated pregnancies. Although sweating may increase itching in people with atopic dermatitis, people with psoriasis may experience some relief. Some physiological benefits of sweating may include improved cardiovascular functioning, and detoxification, which allows the body to rid itself of unwanted materials.

Sauna bathing is contraindicated during high-risk pregnancies and for people with unstable angina pectoris, recent myocardial infarction, severe aortic stenosis, decompensated heart failure, and cardiac arrhythmia. Some studies have reported ECG changes, ectopic beats, and perfusion defects suggestive of myocardial ischemia in people with coronary heart disease, but these occur less frequently during sauna bathing than during exercise. Alcohol intake while sauna bathing can create serious health risks and should be avoided. Research team members and/or group therapists for this study will interview study participants individually about their physical and mental health status to determine appropriateness of participation. In this study, people with significant heart or lung problems and pregnant women will not be permitted to participate. Specific psychological benefits from this research project may include gaining intrapersonal and

interpersonal skills, and stress relief. The research team plans to write about the information collected from this study and publish an article in an academic journal. The data collected are confidential and all data will be written up so that no individual participant will be identified. Written feedback will be provided to you at the completion of this study. If you choose to participate in this study, your participation is completely voluntary and you are free to withdraw at any point without penalty or bad feelings.

APPENDIX G: IRB Approval

Oklahoma State University
Institutional Review Board

Protocol Expires: 2/24/2005

Date : Wednesday, February 25, 2004

IRB Application No ED0371

Proposal Title: SWEAT THERAPY INVESTIGATING THE INTERPERSONAL AND INTERPERSONAL
EFFECTS OF GROUP SWEATING

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Reviewed and
Processed as: Expedited

Continuation

Approval Status Recommended by Reviewer(s) : Approved

Signature



Carol Olson, Director of University Research Compliance

Wednesday, February 25, 2004

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX H: Sweat Therapy Treatment Manual

SWEAT THERAPY TREATMENT MANUAL

**Carrie Winterowd, Stephen Colmant, and Allen Eason
Oklahoma State University**

Significant portions of this manual have been modified from an original manual developed by Robert Morgan, Ph.D., with his permission for Sweat therapy.

SWEAT THERAPY TREATMENT MANUAL

This treatment manual is intended to provide you with a guide for conducting a interpersonal (process-oriented) approach to group psychotherapy with sweat (i.e., in a sauna condition) for college students. This manual is intended to function as a guide to this particular group treatment approach with sweat.

The group treatment approach presented in this manual is based on the interpersonal, process-oriented approach to group psychotherapy as presented by Irvin Yalom (1995) in his classic text on group psychotherapy.

This treatment manual is presented in a fashion that is analogous to the treatment approach. As the interpersonal process-oriented approach is the basis for this treatment, it will be described in detail in Part I of this manual. The sweat treatment strategies will be described in Part II of this treatment manual. This manual was written in a clear and reader friendly format, thus scientific references will be implemented only as specifically warranted. Please note that the interpersonal process-oriented approach as described in this manual refers to the approach described by Yalom. We will not cite him for each statement or explanation, but you should be aware that this is his intellectual work (unless otherwise cited), not ours.

PART I

Interpersonal Process-Oriented Approach

As stated previously, this classic approach to group psychotherapy was initially developed by Yalom in 1970. Yalom's theory will be described briefly, yet in sufficient detail to allow you to implement this approach. The interpersonal process-oriented approach to group work as described here refers to an exploration of group members' interpersonal relationships with each other as well as their relationship to you (the facilitator). This exploration occurs within the group and remains the focus of the group, therefore the process of this approach is centered in the "here and now" (i.e., the present)

and focuses on interpersonal relationships.

In describing this treatment approach, Yalom (1995) has indicated several key components which you must be aware of and attempt to implement to adequately facilitate this interpersonal process-oriented approach to group therapy. These components include: the eleven therapeutic factors of group work, culture building and norm shaping, and maintenance of a “here-and-now” focus. In addition, stages of group therapy and group dynamics will be discussed briefly. These components are described briefly here, and will be presented in greater detail in the first two of the four training sessions.

The students who participate in this study will be referred through this manual as “clients” or “group members.” The facilitators of the groups will be referred through this manual as “facilitators.” The interpersonal process-oriented groups with or without sweat will be referred throughout this manual as “groups” or “group therapy.”

Therapeutic Factors:

Yalom (1995) has empirically identified eleven therapeutic factors based on the “intricate interplay of human experience” (pg. 1) and that opens the path way to therapeutic change. These eleven factors are: (1) Instillation of Hope, (2) Universality, (3) Imparting Information, (4) Altruism, (5) The Corrective Recapitulation of the Primary Family Group, (6) Development of Socializing Techniques, (7) Imitative Behavior, (8) Interpersonal Learning, (9) Group Cohesiveness, (10) Catharsis, and (11) Existential Factors. The following is a description and therapeutic explanation of each of the eleven therapeutic factors.

Instillation of Hope: Hope is crucial to the therapy process. Group members (and facilitators) need to achieve and maintain hope that change is possible. Hope is required to not only keep clients in therapy, but “faith in a treatment mode can in itself be therapeutically effective” (pg. 4). As the group facilitator, you must be able to communicate how this group approach will help group members. In addition, you should

attempt to capitalize on their hope in the efficacy of this treatment approach whenever possible (e.g., early group sessions, reinforce positive expectations, educate when faced with negative preconceptions, and direct attention to improvements displayed during the course of the group).

Universality: Clients may enter group therapy with the preconceived idea that they are alone with their problems and that others do not share similar difficulties. While this is true to some extent, the disconfirmation of their uniqueness may be a powerful sense of relief. That is, clients learn that they are universally similar to one another. It is assumed that as clients begin to share and learn about each others' similarities, they will become more trusting and open with each other. Your role is to aid in the development of group universality by pointing out similarities among group members. When clients present with problems or goals that are similar it is important that you indicate the universal nature of their issues. This may be most easily achieved during the first group session. As clients begin to discuss their lives, you will help the group identify commonalities in their life histories, issues, and goals.

Imparting Information: This therapeutic factor includes both didactic instruction (e.g., psycho-education) and direct advise (by the facilitator as well as group members). In general, clients in interpersonal process-oriented groups do not highly value didactic instruction or advice giving, and Yalom discourages such practices. As the facilitator, you may chose to use psychoeducation or offer suggestions to some group members to facilitate their growth and improvements. However, it is recommended that you not overuse these interventions. Group members will also give advice to one another, especially in early stages of the group. While group members typically do not find the advice of other group members as highly beneficial, advice giving serves a purpose. The process, rather than the content is important as it implies and conveys mutual interest and caring. This is an important facet of group therapy and clients may benefit from acknowledging that they are interested in and care about one another.

Altruism: In group therapy, clients receive through giving. Clients may particularly

benefit from this factor as it may be one of the few times that they give rather than take. Clients may believe that they are a burden to others and the experience that they can be helpful or of importance to others may be refreshing and may boost self-esteem. Clients in group therapy may be helpful to one another via providing support, reassurances, suggestions, insight, and sharing of problems. Not infrequently, clients in group therapy will accept observations from other clients long before they accept your observations. You may be perceived as a professional who is not from the real world, who can not really understand them. Other clients are real and understand their plight, thus, are more credible sources of information. Typically, clients question the utility of group therapy asking questions such as “How can the blind lead the blind?” This resistance may be best explored through the therapeutic factor of altruism. In effect, a client who says other clients are in the same position as him/herself and cannot possibly be of help to him/her, is in effect saying “these clients are like myself, and I have nothing of value to offer them.” You can assist these clients in exploring their negative self-evaluation by helping them identify ways that they can be of assistance to the group. Others may vicariously benefit from this process exploration. In addition, it may prove beneficial to reflect the support you notice in group sessions.

The Corrective Recapitulation of the Primary Family Group: Group dynamics occur that closely resemble familial dynamics. Many aspects of families are re-experienced in groups: authority/parental figures, peer siblings, strong emotions, deep intimacy, and hostile and competitive feelings. Responses to other clients in the group will be similar to reactions to family members. Of therapeutic importance, however, is not that early family experiences or conflicts are merely relived, rather that they are relived correctly. Your task is to find common ties between past and current feelings, thoughts, and behaviors, and to explore and challenge rigid interpersonal behaviors. You should assist clients in identifying behaviors that are heavily influenced by early family experiences, and encourage them to experiment with new interpersonal behaviors in the group. The group should be a safe haven for them to try on new behaviors. Thus, when clients can work out problems with you and the other members, they are actually working through unfinished business from previous relationships.

Development of Socializing Techniques: Groups provide an instant laboratory for the observation and development of social skills. The development of socializing skills in an interpersonal process-oriented group is a secondary gain as social skills training is usually not a focus of these groups; however, clients may learn from others' feedback about their social behaviors. This may provide clients with a unique opportunity of receiving direct feedback regarding their interpersonal skills. It appears intuitively plausible that this feedback could only help clients in their interpersonal relationships within and outside of the group. Yalom (1995) emphasizes the potential benefits of this therapeutic factor when he states "senior members...are attuned to process; they have learned how to be helpfully responsive to others; they have acquired methods of conflict resolution; they are less likely to be judgmental and more capable of experiencing and expressing accurate empathy." Your task here is to aid clients in developing more functional social skills via modeling (i.e., demonstrating the behavior yourself directly or indirectly) and/or feedback.

Imitative Behavior: We have all at one time or another imitated behaviors of others. Group therapy is no different as clients will model their own behavior based on your behaviors and/or the group members' behaviors. Clients in this group will likely "try on" bits and pieces of other people in group and then keep those behaviors that "fit" and discard qualities that are ill-fitting. Yalom (1995) articulates this point very succinctly when he writes about this process of trying on and discarding others qualities or characteristics as beneficial because finding out who we are not is important for finding out who we are.

Interpersonal Learning: Interpersonal learning is by far the most abstract and difficult to explain of all of Yalom's therapeutic factors. Interpersonal learning includes processes that are similar to individual therapy such as insight, working through transference, and the corrective emotional experience. To understand interpersonal learning as identified by Yalom, you must first be familiar with his view of the importance of interpersonal relationships, the corrective emotional experience, and the group as social microcosm.

Interpersonal relationships are important because we develop a sense of who we are based on the perceptions and reflections of others. In general, most clients try to live life based on their own values and standards and in a way that others can be proud of them. With regard to interpersonal relationships, individuals have a tendency to distort perceptions of others (Yalom refers to these distorted perceptions as “parataxic distortions”). These distortions occur in response to facilitators as well as group members. For example, a chronically angry and resentful client may perceive others as harsh and rejecting. If this projection can be identified and discussed in group, then s/he may be in a unique position to obtain consensual validation (i.e., obtain feedback from the group with regard to his/her self-evaluation).

It is assumed that the group will rekindle previous emotional experiences but that the client will be allowed to experience a “corrective emotional experience”. That is, client growth may develop through self-disclosure of emotionally laden material and group feedback allows for reality testing. Five components appear of utmost importance with regard to the “corrective emotional experience”: (1) clients will take risks of expressing strong emotional reactions; (2) the group must support the clients’ risk; (3) group process is examined; (4) inappropriate feelings and behaviors or avoided interpersonal behaviors are recognized; and (5) more honest and deeper interactions are facilitated. Again, it should be noted that the emotional expression is not sufficient to promote change and that a cognitive component (i.e., reflecting on the experience and finding meaning in it) is essential for change to occur. You will need to assist the group by framing and/or making sense of the emotions exhibited in the group.

One of the primary benefits from interactive groups is that they facilitate a social microcosm of the group members. In other words, group members begin to interact with one another as they do with others outside the group. In many ways, the group will represent their day-to-day world. With the passage of time, group members will be themselves during group interactions. As a result, they will eventually display their own problems or pathologies. You do not need to ask about their problems or pathologies,

because they will display it for you and for everyone else to see. One of your most significant tasks will be to identify and subject to therapy those maladaptive interpersonal behaviors of individual group members and help them learn new ways of relating. Prior to turning the social microcosm to a therapeutic advantage, you must first identify group members' recurrent maladaptive patterns. Group members will elicit feelings from one another, and you need to consider these feelings as data. If these are not the feelings that the client desires to elicit, then a problem has been identified. Note that one response of another group member is insufficient data and you must seek confirmatory data (from other group members as well). Consensual validation (feedback about one's self-evaluation) from the group must be obtained to truly aid in the identification of maladaptive interpersonal styles in each group member. Some of the complaints frequently voiced by clients is that the group and its interactions are not representative of the real world—that the group is artificial and contrived. It should be pointed out that while the group members meet only once a week, they are in a position to explore with great depth the life experiences and interpersonal functioning's of one another. To develop the kind of trust and honest necessary to work together cannot possibly be considered artificial. There is nothing artificial about a client expressing anger with you or another client. In fact, in many ways, group experiences can be more real than their everyday life.

Lastly, the therapeutic factor of interpersonal learning must include a discussion of insight. Insight is the discovery of something of importance about oneself, and may occur on at least four different levels.

1. Clients may develop an objective impression of their interpersonal style. They may learn how others view them.
2. Clients may develop an understanding of their interactional patterns.
3. Clients may develop an understanding of the motivations behind their interactional patterns. They may learn why they interact the way they do. For example, clients may

learn that they behave in certain ways to avoid perceived catastrophes (e.g., if I express my anger I will end up in a fight; if I cry I will be perceived by others as weak).

4. Clients may develop an understanding of how they became the way they are.

Group Cohesiveness: Group cohesiveness in its most basic form refers to the attractiveness of a group for its members. Defined more behaviorally, group cohesiveness refers to members feelings of warmth and comfort in the group, feelings of belonging, valuing the group, and feelings of being valued, unconditionally accepted and supported by the other group members. Group cohesiveness appears to be a necessary component of group therapy, as well as any other group, should be able to develop this therapeutic factor. Group cohesiveness is not a stagnant process, rather, the cohesiveness of any group fluctuates with the circumstances of the group; however, some level of group cohesiveness must be maintained or members are likely to leave the group.

Lastly, it is critical to the process of group therapy that you do not misinterpret group cohesiveness as comfort. Cohesive groups should be better able to develop and express anger and conflict. Hostility must be acknowledged and expressed to avoid covert hostility, which would significantly hinder the effectiveness of the group. Hostility in group therapy must be processed and it is imperative that the conflicting group members establish a means of working together. Clients may have a tendency to avoid open expression of anger and hostility, however, as the group facilitator you need to help the group identify and explore conflict via the open expression of anger. Be aware and prepare for the initial expression of anger to be directed at you. If the group members cannot trust you with their anger, how can they trust the other clients. This issue will be discussed in greater detail under the heading of “stages of group therapy”, but suffice it to say for now, that you should observe client challenges or confrontations at some point in the early group development. For example, you may be confronted about your lack of direction or your lack of care and concern. If you do not deal with this open expression of anger in a healthy and positive way (e.g., allow members to share their disappointment, anger, etc. without judgement), you will inadvertently establish a group norm

discouraging the open expression of intense feelings.

Catharsis: Catharsis is the process of emotional experience and generally refers to expressing and discharging previously repressed emotions. It is generally accepted by most theorists and clinicians that catharsis is not sufficient to promote psychological change. As the facilitator, one of your tasks is to help the client get beyond the ventilation of feelings and attempt to add meaning or significance to the cathartic experience. You must facilitate the dual process of expressing feelings and then reflecting back on the process (this process is known as the self-reflective loop and is discussed in greater detail below). For example, you might ask a group member what it was like to share those feelings in the group just now. Catharsis is critical to group therapy, without which the group would be a sterile intellectual discussion of ideas and thoughts, yet it is insufficient to promote change and must be supplemented by other therapeutic factors. In addition, this therapeutic factor allows clients (possibly for the first time in their lives) to learn and be able to say what is bothering them. With regard to catharsis with clients, please note that expression of affect is a relative experience. What one perceives as intense may not be the same as what others perceive as intense. Thus, if a relatively constricted client expresses an affective response, consider the experience from that client's experiential world.

Existential Factors: The existential factors refers to the search for purpose and meaning in life, and consists of five points:

(1) "Recognizing that life is at times unfair and unjust"

(2) "Recognizing that ultimately there is no escape from some of life's pain or from death"

(3) "Recognizing that no matter how close I get to other people, I must still face life alone"

(4) “Facing the basic issues of my life and death, and thus living my life more honestly and being less caught up in trivialities”

(5) “Learning that I must take ultimate responsibility for the way I live my life no matter how much guidance and support I get from others” (p. 88).

In a general sense these five existential factors emphasize awareness of death, freedom, isolation, the purpose of life and the struggle with existence. This therapeutic factor is not grounded in techniques or strategies, instead, it is an attitude or a way of viewing the world. Your task is to aid the client in exploring his/her role in the world and way of living.

Integrating the Therapeutic Factors

As you read about the eleven therapeutic factors you probably developed a sense of those therapeutic factors that carry more weight with regard to the change process. Yalom would not disagree with you. For example, instillation of hope in and of itself does not facilitate change, however, it helps keep members in the group to allow other therapeutic factors to facilitate change. In addition, the therapeutic factors should not be considered individually, but collectively. Each factor contributes and is critical to the process of change. If you think of the change process in a circular fashion with change at the top of the loop and each factor leading in a circular fashion to change, you can see that if any one factor is removed, the loop is broken. Thus, each factor is not necessarily a condition of change, rather a mechanism in the process of change. One of your goals for your group should be to facilitate the process of change by integrating the therapeutic factors as described above.

Culture Building and Norm Shaping:

One of your tasks as the group facilitator is to develop a group that works as a “therapeutic social system” (pg. 109). That is, you are not the agent of change, the group is. It should be the group members who facilitate change for one another via the therapeutic factors, thus it is your task to establish a group culture that maximizes the

effective therapeutic interactions. Your task is to maximize the strengths of the group to facilitate an interactional group.

In building a therapeutic culture, group norms will evolve. Some of the norms of the group will be explicit (e.g., identified group rules as described below), while most will be implicit. You influence the type of norms that evolve. In fact, you cannot help but influence the development of group norms. You need to be conscious of your influence on group norms and attempt to establish norms that facilitate interactional group therapy. In developing group norms you will assume two basic roles: technical expert and model-setting participant.

As the technical expert, you do not need to rely on group exercises or gimmicks to develop therapeutic norms. Rather, you can rely on your knowledge and experience to actively facilitate the group norms. You already possess the necessary techniques for the development of the desired norms. You simply need to be conscious of how you effect group norms and plan your strategy appropriately. Yalom (1995) gives the following examples which I believe adequately describe your task here:

“the leader must attempt to create an interactional network in which the members freely interact rather than directing all their comments to or through the facilitator. To this end, facilitators may implicitly instruct members in their pregroup interviews or in the first group sessions: they may, repeatedly during the meetings, ask for all members’ reactions to another member or toward a group issue; they may wonder why conversation is invariably directed toward the facilitator; they may refuse to answer questions or may even close their eyes when addressed; they may ask the group to engage in exercises that teach clients to interact—for example, asking each member of the group, in turn, to give his or her impressions of every other member; or facilitators may, in a much less obtrusive manner, shape behavior by rewarding members who address one another—facilitators may nod or smile at them, address them warmly, or shift their posture into a more receptive position” (pg. 113).

As the model-setting participant, you shape group norms by example. You should attempt to model four basic functions: (1) honest and open communication, (2) appropriate restraint, (3) appropriate self-disclosure (i.e., as the facilitator, do not self-disclose too early in the group and avoid promiscuous self-disclosure), and (4) transparency (i.e., do not hide behind your role as group facilitator). To function as a model you must “join” the group. You will be expected to share with the group. You will not need to share identifying information (a process that can prove dangerous with this population), however, you should be willing to share your own interpersonal difficulties with the group. For example, if you find yourself in constant conflict with a particular client you can model trust and openness by exposing this conflict to the process of the group. You will model honest and open communication and transparency, but to do this you must be comfortable with yourself and allow yourself to come out from behind your role as facilitator. In effect, you become a group member who is subjected to interpersonal difficulties just like every one else in the world. Finally, you should positively reinforce similar client behavior. Do not punish those who are less trusting and share only minimally. You should reinforce them for what they have shared, you can process their difficulty in opening up more to the group, you can engage in risk assessment of opening up, and you can encourage clients to share more, but do not act in a punitive manner to the amount or your perceived tardiness of their sharing. To do so, will inadvertently reinforce negative feelings of sharing. Clients will learn that sharing only leads to greater expectations of what one must share, and everyone will be afraid to be more open with the group.

Here-And-Now Focus

As stated previously, the here-and-now refers to the focus on the interpersonal relationships within the group and occurs in the present. The focus on the here-and-now is of paramount importance in Yalom’s theory and is a concept that you will need to be familiar and comfortable with to facilitate an interpersonal process-oriented group. For this reason, I contribute more detail to this concept than any other concepts in this theory. To implement a here-and-now focus you need to know that this process occurs at two levels: first is an experiential level and second is an “illumination of process” level.

In the experiential level, group members will experience feelings in the here-and-now. Some of these feelings will be strong and will be in reaction to other group members, the facilitator, and the group at large. The focus of this portion of the group will be on these feelings. Identifying and sharing with the group these feelings will be one of your primary goals for each of the individual members. The events in meetings must take precedence over any other events (e.g., outside the group). That is not to say that other events in the clients life are not to be discussed, however, the group focus must remain on intergroup behaviors. The here-and-now focus will remain incomplete without the second level, the illumination of process. That is, you must facilitate “process commentary” (i.e., explaining what you observed/heard happening in the group) on the events that occur in the here-and-now. Experiencing is insufficient to facilitate change; experiencing must be accompanied by interpersonal learning which occurs through process commentary (e.g., reflection on the experience and sharing it in group). Thus, you have two tasks: 1) facilitate a here-and-now focus and then 2) lead the group in an exploration of the here-and-now experiences (e.g., thoughts, feelings, behaviors, interactions). In effect, the group will perform a “self-reflective loop”. The group will live in the here-and-now, and then reflect back on the thoughts, feelings, behaviors, and/or interactions that occurred.

For purposes of this group, process will refer to the interpersonal relationships between group members. Process is not the same as content. Content refers to the explicit meaning of statements, whereas process refers to underlying meanings. To understand the process you need to consider the reason, from an interpersonal perspective, that clients make statements when they do, how they do, and to whom they do. In other words, why is a client saying what s/he is saying, how s/he is saying it, and to whom s/he is saying it. This is the group process and it is this process commentary that separates experiential group therapy from other social interactions.

Some techniques may aid you in activating a here-and-now focus; however, you are strongly encouraged not to rely on these techniques in a prescriptive format, rather to understand the purpose and intent behind the techniques. In so doing, you will then be in

a position to initiate your own techniques that are consistent with your own individual style. First, it may help you to think in the here-and-now. Your focus should be on attempting to bring each group session, each event into the here-and-now. Ask yourself a question such as, “How can I get this discussion into the here-and-now?” This will help keep you in a here-and-now focus. This should be done as early as the first group session. For instance, after group introductions and initial discussion, you may interrupt the group with a process comment. Yalom provides the following narrated example “We’ve done a great deal here today so far. Each of you has shared...But I have a hunch that something else is going on, and that is that you’re sizing one another up, each arriving at some impressions of the other, each wondering how you’ll fit in with the others. I wonder now if we could spend some time discussing what each of us has come up with thus far.” As you can see from this example, you can directly influence a here-and-now focus. You will attempt to adjust the focus from the external, abstract, and impersonal, to the internal, specific, and personal. Encourage the use of first person (“I”) rather than third person (“You”). Identify when group members are talking to you and encourage group communication. Other examples of moving the focus to a here-and-now focus will be presented in the training sessions.

Another strategy is to provide feedback on how to ask and give feedback to and from other group members. It may be necessary for clients to occasionally check out their beliefs with the group. Help clients avoid group questions such as “Do you like me?” in favor of more effective questions such as “What is it about me that you like most and least?” This type of activity promotes process commentary and includes the following sequence:

1. A description of behavior. Clients learn to see themselves as others see them.
2. Here is the impact of your behavior on others. Clients learn how their behavior makes others feel.
3. Here is the impact of your behavior on others attitudes toward you. Clients learn how

others feel about them as a result of their behavior.

4. Here is the impact of your behavior on your attitude toward yourself. Clients learn how their behavior influences their own attitude about themselves.

When initially inquiring about intergroup relations, you will receive resistance from the group. Clients will say something to the effect that they like all of the group members the same. It may be important for you to accept these defenses initially, but stay with the task, continue to probe and explore, and do not hesitate to model interpersonal communications. For example, after a long silence you may initiate “process commentary” by asking for the thoughts of the group members that were “unsaid”. You can then model this behavior by sharing your own thoughts that occurred during the silence.

At times it may occur to you that things are going “unsaid” as the group is nearing the end. You may have the members imagine that the group has just ended and they are leaving. Ask them what disappointments they would have about that session. Also, do not hesitate to wonder about how group discussions relate to the group session (e.g., if they are discussing the frustration of clients in the facility, wonder aloud if that is how they are feeling in the group). Your wondering may or may not be accurate, but either way, you facilitate a here-and-now focus.

Once you have established a here-and-now focus, you must then use this process therapeutically (i.e., process illumination). The illumination of process consists of four stages: (1) client recognition of their behavior, (2) client understanding of the effects of this behavior, (3) determine their satisfaction with their behavior, and (4) change in behavior. To facilitate these stages you must first be able to recognize process. This is a skill that generally occurs with experience, and you may or may not have had opportunities to develop this skill. Some specific examples will be provided to aid you, as needed, in the recognition of process.

Establishing a process orientation within the group is as difficult and maybe moreso than establishing a here-and-now focus; however, another one of your tasks will be to facilitate an environment that accepts a process orientation. In so doing you are encouraged to attempt to facilitate client learning via their own route. That is you may have to hold onto some process commentary until you are able to find a method that allows the client to obtain their own insight. This will carry much more weight than any brilliant interpretation that you as a facilitator can offer. This is not an easy task, and as the time frame for this group is relatively short (especially by Yalom's standards) you are encouraged to weigh the time limits against the clinical utility of making an interpretation.

When you chose to illuminate on the group process, you are advised to consider how you can aid the client in hearing your process commentary. Some basic concepts are suggested here. First and most obvious, clients may hear your interpretations more clearly if they are framed in a supportive manner. Second, avoid the temptation to label or classify (e.g., antisocial, narcissistic, uncaring). A statement first describing some positive aspect of their group behavior followed by an observation and interpretation of the ineffective or aversive group behavior may be more easily heard by the client. Third, be observant of "moments of truth". That is, there are times when in an instant of openness an client discloses some truth that will provide you with therapeutic leverage at a later point in the group. For example, a client may state that they would like to develop more intimate relationships with others. By remembering this statement you may be in a position to use his/her stated desire in making a process commentary to how his/her intergroup behavior effects relationships with others in the group.

If any of this information is unclear, I will reiterate many of these points during the first two training sessions. In addition, videotapes produced by Yalom will accurately display the use and impact of the here-and-now focus.

Stages of Group Psychotherapy

Yalom (1995) identifies three stages of group therapy that all groups must obtain in order

to become a functional therapeutic group. These stages include the initial stage, the conflict, dominance and rebellion stage, and thirdly, the development of cohesiveness. These stages are not clearly defined as to when or how a particular group will progress through each stage, but as the facilitator you should be able to recognize and process with the group, the stages as they occur.

The initial stage (also referred to by Yalom as the “in or out” stage) is characterized by four basic phases. First, there must be an orientation to the group. You can facilitate this phase by discussing the purpose of the group, expectations of group members, and structure of the group. Second, it is normal for group members to be hesitant about group participation and self-disclosure. Trust has not yet formed and the clients will continue to seek approval from the group rather than openly discuss their life struggles. Thirdly, the group will experience a “search for meaning” phase. The clients will attempt to make sense of the group, ask and explore how the group will help them, they will question how much they really want to share, and they will attempt to find a role within the group. Finally, there will be a dependency phase. Here the clients will look for structure, typically from you. They will seek you out for direction, approval, acceptance, and you will see many of the group statements directed to you. You can exert great influence at this point and must remember that you are attempting to establish therapeutic norms as described previously.

The second stage of group therapy is the conflict, dominance and rebellion stage (which Yalom also refers to as the “top-bottom” stage). Here the group shifts focus from approval and acceptance to conflict, dominance, and power. A group hierarchy will likely emerge as clients jostle for position within the group. In this stage, the clients are becoming more real and you will begin to see who the group members really are. Controlling and dominant clients will attempt to assume control in the group, while more passive clients will allow the group to be directed by others. The clients are allowed to be a little more real because in this stage they are becoming more comfortable with one another. The first sign that the second stage is occurring is the emergence of conflict. This conflict will typically not present itself in a hostile or aggressive fashion. Rather,

subtle disagreements will become evident. This is the group's method of "testing the waters" for the acceptance of conflict. As stated previously, group conflict will invariably be directed to you first. If they can not express conflict with you the facilitator, how can they trust to express conflict with one another, and a group without conflict will be like a marriage without conflict--boring, distant, detached, and unreal. You must be prepared to accept conflict, no matter how great or small the challenge, because the group's challenge of you is essential to the life of the group. As such, you must not only permit but encourage confrontation (e.g., reinforce challenges) directed at you. Rest assured, the group will save you and eventually switch the focus of the challenges from you to one another.

Group cohesiveness is the third and final stage of group therapy identified by Yalom. He has also referred to this stage as a "close-far" stage. This stage is characterized by an increase in trust, self-disclosure, and group cohesion. The focus typically shifts from a conflictual process to one of intimacy. This stage permits the emergence of the real person and secrets are commonly shared. The group develops the cohesion necessary for intimate work to occur. Group cohesion is a relative term. Clients may develop a strong sense of cohesion that is not easily recognized by facilitators experienced with groups that have achieved more intimate levels. You should caution against harboring high expectations, yet allow yourself to develop a sense for and some expectations for intimacy to occur within the group. You should acknowledge with the group their movement towards intimacy and closeness and reinforce behaviors that initiate this process.

Some Notes about Group Dynamics

You already have a good sense about group dynamics, both from experience and from reading the previous sections of this manual. In this section, I want to clarify or describe some of the important group dynamics identified by Yalom (1995) that you should be aware of but that were not identified above. These dynamics include: group maintenance, group resistance, and problem clients.

Group maintenance will be one of your primary tasks once the group has begun. You must identify and deter any threats to group cohesiveness. Frequent tardiness, subgrouping, and scapegoating are examples of processes that can negatively impact group cohesiveness. You need to monitor the cohesiveness of the group and it may be necessary at times to delay work on an individual's problems for the betterment of the group. For example, if a new client enters the group and is unacknowledged while another group member immediately engages in a dialogue of his problems, you should consider stopping this member and processing with the group the new members presence and the groups lack of acknowledgment to him. Again, you should attempt to confront this behavior in a nonpunitive manner. For example, you may ask the speaking client how s/he thinks the new client is feeling in the group at that point.

Group resistance is common in any group therapy. You may frequently observe group members becoming resistant (generally defined as pain avoidance) to you, to other group members, or to the group at large. When this occurs, your task is to help the client see through their resistance to be able to hear the message they are receiving. It is only then that they can accurately confirm or disconfirm a message. For example, it is likely at some point in your group that a group member will make an observation or interpretation to another group member who in turn becomes defensive and resistant to this message. You may encourage the client to listen to the message by acknowledging his/her ability to defend against or counter the message, but point out that in so doing, s/he is unable to accurately hear the message and is unable to discern which parts of the message are actually true for him/her.

Problem clients exist in all groups, and your client group will be no different. Common problem patient presentations include: the monopolist (talks a great deal in group), the silent patient (talks rarely), the boring patient (detailed stories that stay at a surface level), and most common for your group, the characterologically difficult client (personality problems/disorders). These group members will test your clients as well as your abilities to facilitate a therapeutic group; however, you may be helped in knowing that these are examples of interpersonal problems. You may at times be unsuccessful in your attempts

to confront or challenge this behavior, but you may find success in providing your insights (or interpretations) on how the behavior affects their interpersonal relationships. Furthermore, you will be especially effective if you can aid the client in identifying how the effects of his behavior actually contradict what he desires in interpersonal relationships.

Summary of an Interpersonal Process-Oriented Approach to Group Therapy

This approach to group psychotherapy with clients will incorporate Yalom's (1995) interpersonal process-oriented theory. The foundation of this treatment will consist of eleven therapeutic factors: instillation of hope, universality, imparting information, altruism, the corrective recapitulation of the primary family group, development of socializing techniques, imitative behavior, interpersonal learning, group cohesiveness, catharsis, and existential factors. These factors do not facilitate change independently, rather should be implemented collectively into the treatment process. One of your tasks is to facilitate a culture and develop norms that are conducive to interpersonal exploration. This interpersonal exploration should occur in the here-and-now, as group members will react with emotion to the group members, the facilitator, and the group as a whole; however, this is not sufficient for change. You must facilitate a self-reflective loop where group members share their feelings and then reflect back on this experience with the group. Lastly, you should be aware of the group stages your group members may progress through including: the initial stage (characterized by group orientation, hesitant participation, a "search for meaning", and dependency); the conflict, dominance and rebellion stage (characterized by a focus shift to issues of conflict, dominance, and power); and the group cohesiveness stage (characterized by increased trust, self-disclosure, and group cohesion).

By now you should have a sense of your task when facilitating an interpersonal process-oriented approach to group counseling. It is hoped that Part I of this manual has prepared you for facilitating a therapeutic environment that is rich in opportunity for interpersonal understanding and growth. The avenue to this end lies in the therapeutic factors and the here-and-now process as described previously. As you move into Part II of this manual

you are advised to maintain your present awareness of the interpersonal process-oriented approach.

PART II

Sweat Approach

Preparation

Each participant and facilitator will need the following:

1 Quart of water.

Two Towels

Minimum attire is a bathing suit.

The facilitator should have a digital watch with a timer and alarm as is on an athletic watch. A Timex Ironman watch is excellent.

Structure of Sweating Sessions

After members are seated and the door is closed, the facilitator will start his/her watch timer. The group will begin spending four, ten-minute intervals in the sauna. In this manual, the intervals spent in the sauna will be referred to as “Rounds”. After each round, the facilitator will direct the participants to leave the sauna to take a five-minute break in the room directly across from the sauna. The facilitator should encourage everyone to drink plenty of water. Remaining standing between rounds may be helpful for anyone experiencing light-headedness. When the five-minute break is up, the facilitator will direct the participants to re-enter the sauna for the next round. Each subsequent session, along with the group’s consent, the facilitator will raise the amount of time during the rounds by one minute, not to exceed 15 minutes. For example, Session 1 will be four ten-minute rounds, Session 2 will be four eleven-minute rounds, and so forth. It is important that all group members be encouraged to take breaks from the sauna whenever they feel it necessary. Other information regarding signs and symptoms of people having problems due to heat exposure are in the following section on Heat Disorders.

One of your roles as a group facilitator is to ensure the physical and emotional safety. If

the facilitator is concerned about the emotional (e.g., undue group pressure or ridicule; being verbally abused) or physical (e.g., people touching each other inappropriately; not respecting physical space and boundaries) well-being of group members as a result of group dynamics or group conflicts, then the facilitator should intervene to interrupt these group dynamics and discuss them. Below is a list of other physical safety concerns that the group facilitator must attend to:

I. HEAT DISORDERS

If a group member is suspected of suffering either a heat related or other injury the counselor will attend to that person and will instruct another group member to inform health club staff of the problem.

A. HEAT STROKE occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures which contribute to heat stroke, are also highly variable and difficult to predict.

If a group member shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The person should be escorted out of the sauna. The person's skin should be wetted and air movement around the person should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

No person suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

B. HEAT EXHAUSTION. The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous so the victim should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.

People suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

C. HEAT COLLAPSE ("Fainting"). In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable.

D. HEAT RASHES are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

PART III

Group Intervention Plan

Intake Interview:

1. Establish rapport

2. Discuss limits of confidentiality (obtain signature on confidentiality form)
3. Provide an overview of the program
 - focus on interpersonal relationships
 - describe the purpose and procedure of the assessment phases
 - discuss group rules/norms
4. Obtain informed consent and have client sign consent form
5. Obtain background information via your normal clinical interview style

Session 1:

1. Administer pretest measures.
 1. Discuss group rules including confidentiality (including your limits to confidentiality)
 2. Facilitate group introductions
 3. Begin implementing the therapeutic factors (e.g., universality, instillation of hope)
 4. Begin to facilitate a here-now-focus

Sessions 2, 4, and 5:

1. Administer 2 questionnaires (Curative Factor Scale and Group Response Form) at the end of each session before members leave.

Session 3:

1. Affect scales will be administered five (5) times. The scales are the PANAS, SEES, and EIFI. They are stapled together and highlighted for administration times: PRE, DURING, POST, 2HR-POST, and NEXT-DAY-POST. Administer PRE before beginning session.
2. Administer DURING on a clipboard five minutes into the third round.
3. Administer POST and 2 questionnaires (Curative Factor Scale and Group Response Form) at the end of session after exiting sauna before members leave.

4. 2HR-POST and NEXT-DAY-POST will be given to group members to take home and fill out on their own. Instruct members to complete 2 HR-POST two hours after end of session. Instruct members to complete NEXT-DAY-POST at 10 AM the following day.

Session 6:

1. Begin the group.
2. Provide the opportunity for some closure and feedback about the experience in group (e.g., What was this group experience like for you?).
3. Administer 2 questionnaires (Curative Factor Scale and Group Response Form) at the end of session before members leave.

Session 7:

1. Administer post-test measures. Group counseling will not be held. Thank everyone for their participation.

VITA

Stephen A. Colmant

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE EFFECTS OF SWEAT THERAPY ON GROUP THERAPEUTIC FACTORS AND FEELING STATES

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Pages in Study: 175

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Major Field: Educational Psychology with an emphasis in Counseling Psychology

Scope and Method of Study: Sweat therapy is the combination of intense heat exposure with psychotherapy or counseling. The primary purpose of this study was to examine the efficacy of sweat therapy as a group counseling technique by investigating the effects of sweat therapy on group therapeutic factors with a group of college students. The second purpose of this study was to explore the effects of sweat and non-sweat group counseling conditions on feeling states to investigate one aspect of how group sweating functions. Eighty-five university students were randomly assigned to one of two conditions: (a) Sweat group: Group counseling in a sauna; or, (b) Non-sweat group: Group counseling in a standard office setting. The groups met weekly for six sessions. Measures used included an informed consent form, an intake form, the Critical Incidents Questionnaire (CIQ), the Therapeutic Factor inventory (TFI), the Exercise Induced Feeling Inventory (EFI) and the Subjective Exercise Experiences Scale (SEES).

Findings and Conclusions: Overall, the sweat therapy groups appeared to have greater therapeutic quality compared to the non-sweat groups as measured by direct and indirect assessment of participants' perceptions of their experience and by practical variables. Sweat therapy group participants perceived a greater availability of therapeutic factors, reported sessions to be more useful, and had less absenteeism and group dropouts than non-sweat group counseling participants. Secondly, participants in these two conditions appeared to differ with regard to their feeling states of fatigue, revitalization, and physical exhaustion two-hours following the group intervention. In particular, sweat participants, on average, felt less fatigued, more revitalized, and less physically exhausted two hours following the group experience compared to non-sweat participants. The results of this study provide empirical support for the theory that sweat therapy enhances the quality of group process and is a useful medium for group work. This study also adds to our understanding of how group sweating operates by specifically implicating improved feeling states lasting several hours. Implications for future research are discussed.

Advisors: Approval: Carrie Winterowd
