Abstract

Rationale: Consumers of the mental health system with serious mental illness have been deprived of meaningful occupations since de-institutionalization began in the late 20th century. Community mental health policy has failed to focus on the meaningful occupational lives of this group of service users. Given the disparity in activity and meaningful time use for people with serious mental illness when compared to the general population, it is clear that a treatment that draws attention to occupational balance and engagement is needed. As balanced time use has been shown to increase community adjustment and life satisfaction, it is an important area of focus. Objectives: The purpose of this study was to pilot test the efficacy of a new occupational time use intervention, provisionally titled “Action over Inertia,” designed to increase occupational balance and engagement in the lives of people with serious mental illness living in the community. Methods: A prospective, multi-centre randomized controlled trial of the intervention, involving 5 Assertive Community Treatment (ACT) teams in southeastern Ontario, ran in Fall 2007/Winter 2008. 18 ACT clients took part in the 12 week intervention, which was delivered by the ACT team occupational therapists. Results: Time use, used as a measure of occupational balance, shifted away from sleep to increased general activity in the treatment group (p=0.05). Treatment and control groups did not differ on occupational engagement measures after the completion of the trial. Feedback on the clinical utility of the intervention was very positive from both therapists and treatment participants. Conclusions: This pilot test revealed initially positive data on the efficacy and clinical utility of the intervention. Further study of the “Action over Inertia” intervention is needed on a larger scale, potentially with a longer treatment timeline to further investigate its usefulness.
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Megan Edgelow, September 2008
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Chapter 1

Introduction

1.1 General Introduction

This thesis examines the efficacy of a new occupational time use intervention, provisionally titled “Action over Inertia” (Krupa, Edgelow, Chen, Mieras, Perry, Radloff-Gabriel, Almas, Jackson & Bransfield, 2007), designed to address occupational balance and occupational engagement in the lives of community dwelling people with serious mental illness. The “Action over Inertia” workbook was developed at Queen’s University in 2007 by Dr. Terry Krupa and Megan Edgelow, BScOT, in collaboration with several community occupational therapists (see Appendix A for “Action over Inertia” contents). The “Action over Inertia” development team has extensive experience and expertise in the area of serious mental illness.

“Action over Inertia” was pilot-tested with participants who have a serious mental illness. The term serious mental illness is defined by the American National Institute of Mental Health by diagnosis, level of disability and duration of the illness. The diagnosis must be a psychiatric disturbance with a psychotic component, the level of disability includes difficulties in work and daily care, resulting in dependency and psychosocial problems, and the duration of illness is typically 2 years or longer (Schinnar, Rothbard, Kanter, & Jung, 1990).

This thesis reports on the pilot test of this new intervention (“Action over Inertia,” Krupa et al., 2007), conducted from Fall 2007 to Winter 2008 with occupational therapists(OTs) from Assertive Community Treatment (ACT) teams serving clients in southeastern Ontario.
1.2 Background Information

1.2.1 The Community Lives of People with Serious Mental Illness

Consumers of the Canadian mental health system with serious mental illness have been deprived of meaningful occupations since de-institutionalization began in the late 20th century. Historically, occupational activities and routines were structured and cued within the mental health institution. With the move to the community, these structures and supports essentially evaporated (Wykes & Holloway, 2000; Braun et al., 1981).

North American and European mental health policy makers and service deliverers failed to focus on the meaningful occupational lives of this group of service users when implementing the process of de-institutionalization. Policy instead focused on the reduction of service costs for the treatment of mental health consumers, resulting in the reduction of costly in-patient services, then replaced by “cheap and insufficient community services” (Yip, 2000, p. 39). Mental health services often lack coordination, described by Talbott (2004, p.1137) as a “crazy-quilt” with no capacity to act as a system. The provision of services within the community has been poorly conceptualized and implemented, with vague definitions of community care and a lack of community integration (Yip, 2000; Davidson, Hoge, Merrill, Rakfeldt & Griffith, 1995).

Studies of the experiences of community dwelling individuals with serious mental illness have revealed their lives to be impoverished, stark, and lonely, devoid of meaningful productive activity and friendship (Harvey, Jeffreys, McNaught, Blizard & King, 2007; Wykes et al., 2000; Davidson et al., 1995). The lack of policy development has contributed to the marginalization of people with serious mental illness, leaving them with unintegrated community lives, often still resembling institutional life (Davidson et al., 1995).
The marginalization of this population manifests in numerous ways. People with serious mental illness have extremely low rates of employment, with only 10 to 25% of people with serious mental illness employed (Marwaha & Johnson, 2004; Draine, Salzer, Culhane & Hadley, 2002; Baron, 1995). They also have high rates of poverty, which can be associated in part with low levels of employment and reliance on social assistance for income (Perese, 2007). In 1991, 27% of Canadians with mental illness were living in poverty, compared to 12.6% of the general population; it is likely that people with serious mental illness represent an even larger proportion of people living in poverty (Wilton, 2004). Wilton’s (2004) Ontario based research went on to show that people with serious mental illness living on social assistance lived in chronic poverty, with most study participants unable to meet basic monthly needs. Furthermore, people with serious mental illness are vulnerable to victimization, often because housing in safe neighbourhoods with low crime rates is unaffordable. Rates of victimization for people with serious mental illness in a 1 year period are estimated at 30-40% (Perese, 2007). A recent study exposed the major determinant for violent victimization for this population, such as being physically assaulted, as a lack of any meaningful daily occupation (Fitzgerald et al., 2005).

Serious mental illness affects thousands of Ontarians and their families. The prevalence of mental illness is reported by diagnosis, with both schizophrenia and bipolar disorder having an approximate 1% yearly prevalence in Ontario (Offord et al., 1996). Not all people who have a mental illness meet the criteria for serious mental illness, which includes functional difficulties, dependency and social issues, as well as a diagnosis of a mental illness with a psychotic component (Schinnar et al., 1990). The Schizophrenia Society (2008) estimates that 120,000 people in Ontario currently have schizophrenia, with 30-40% of that population fitting the criteria for serious mental illness. When people with diagnoses of bipolar disorder and schizoaffective disorder, who often meet the criteria for serious mental illness, are considered, a conservative
estimate of the overall prevalence of serious mental illness in Ontario is 40,000 people. 

Alternately, the Canadian Mental Health Association (2003) estimates a 3% Canadian prevalence of severe and persistent mental illness, affecting approximately 275,000 adult Ontarians. Serious mental illness impacts the community lives of numerous Ontarians, requiring focused attention at both the community and government level.

1.2.2 Meaningful Occupations

At the heart of the practice of occupational therapy is the belief that what people do influences their health and well-being (Meyer, 1922). Occupations can be defined as “all that people need, want, or are obliged to do; what it means to them…It encapsulates doing, being, and becoming” (Wilcock, 2006, p.343). Meaningful occupations, simply those occupations that are important to the individual, have been shown to positively influence well-being, allow for self-expression, and contribute to and maintain personal identity (Rebeiro, 1998). Occupation is implicitly related to health in that we all depend on occupations to provide housing, income, community support, and enjoyment (CAOT, 2002, p. 35).

Occupations can be broken down into categories of self-care, productivity, leisure and sleep; all necessary to maintain one’s health and well-being. Self-care includes occupations that look after oneself, productivity consists of occupations that make a social or economic contribution, leisure is defined as occupations for enjoyment, and sleep is recognized as an essential activity for health promotion and chronic disease prevention (CAOT, 2002). While the terms occupation and activity are often used interchangeably, they carry different connotations. Pierce (2001) defines occupation as an individual’s one-time, personal experience within a unique context, while activities are a more general, culturally shared idea about a category of action. Thus, occupation is a personal and subjectively experienced event, while activity represents a
more common sense of meaning, such as play or cooking, not experienced by a specific person or located in a specific context.

The environment an individual inhabits can create contexts that facilitate or hinder the attainment of a meaningful occupational life (Christiansen, Backman, Little & Nguyen, 1999). Occupational deprivation is experienced when the attainment of a meaningful occupational life is hindered, and can be defined as “a state of preclusion from engagement in occupations of necessity and/or meaning due to factors that stand outside the immediate control of the individual” (Whiteford, 2000, p.201). The central premise of occupational deprivation is that the state of deprivation arises not as a result of an individual’s limitations, but due to forces outside his or her control. Thus the barriers to success are caused by an unaccommodating environment, rather than individual abilities.

The human costs of occupational deprivation include disrupted time use patterns and lack of meaningful time use, maladaptive coping responses such as increased sleep or engagement in illegal activities, and the experience of barriers to community integration. Long term occupational deprivation can diminish the likelihood of adaptive responses to new environments (Whiteford, 2000).

Occupational deprivation is often experienced by people and groups that are marginalized by society. Minority groups, prisoners, unemployed and underemployed people and those living in poverty are all examples of people more vulnerable to occupational deprivation due to marginalization (Wilcock, 2006). People with serious mental illness are often included in the above groups (Townsend & Wilcock, 2004). These groups seldom have a legitimized voice in mainstream society and as such are often not able to advocate for their needs and inclusion in society (Whiteford, 2000). Due to occupational deprivation, there are barriers to participation in
the meaningful occupations that positively influence health and well-being for people with serious mental illness.

Another barrier to the attainment of a meaningful occupational life for this population is the mental illness itself. A review of psychosocial interventions used in serious mental illness identified impaired cognitive function as a key issue in the rehabilitation of this population (Tarrier & Bobes, 2000). Deficits occur in areas of attention, memory and problem-solving ability, and can profoundly limit an individual’s social and occupational functioning. People with psychotic components to their mental illness often experience positive and negative symptoms, both contributing to impaired function in the community. Positive symptoms include delusions and perceptual distortions, especially hallucinations, as well as inappropriate affect and language disturbances. Negative symptoms are described as a flattening or blunting of emotions and affect, disturbed concentration, impoverished thought processes and decreased energy and motivation, as well as an inability to experience pleasure (MacRae, 1998; Kaplan & Sadock, 1996b). While positive symptomatology may perpetuate stigma and make social and community integration difficult, negative symptoms can lead to social withdrawal and avoidance, making participation in occupations challenging (Guthrie, 2002; Krupa & Thornton, 1986). Medications that control positive symptoms are not always as effective in treating negative symptoms, and have side effects such as weight gain, increased incidence of diabetes, motor disturbances, cardiac effects, sexual dysfunction, and exacerbation of memory and concentration issues (Abidi & Bhaskara, 2003; Guthrie, 2002). It is vital that both the environmental and individual components of the community life of an individual with serious mental illness be addressed in order to facilitate the attainment of a meaningful occupational life.
1.2.3 Occupational Balance and Occupational Engagement

A fundamental concept of occupational therapy is that maintaining a balance of occupations in our daily lives is related to health and well-being. Crist, Davis & Coffin (2000) explain that maintaining a balance of work, play/leisure, self-care, and rest is the foundation for a healthy lifestyle. Occupational balance, the satisfactory organization of one’s day (Christiansen, 1996), is an issue for people all around the world, from all cultures and walks of life. The struggle to balance the demands of occupations and responsibilities is a universal human phenomenon. Higher levels of activity have been associated with higher levels of life satisfaction and community engagement (Lunt, 2000; Hatfield & Lefley, 1993). Conversely, low activity levels can lead to occupational imbalance. This imbalance often manifests itself in occupational disengagement, where a person finds little meaning and connection to their daily activities and the community.

In contrast, the term occupational engagement describes anticipation and comprehension regarding occupational performance and serves as an ongoing means of maintaining a sense of self and well-being (Rebeiro & Cook, 1999). Someone who is occupationally engaged will exhibit balanced daily activities and time use, find their daily activities meaningful, and socialize within the context of the community (Bejerholm, Hansson & Eklund, 2006).

Recent studies of people with serious mental illness have revealed that their time use patterns differ from the norm, with less time spent in productive pursuits (Minato & Zemke, 2004; Shimitras, Fossey, & Harvey, 2003; Krupa, McLean, Eastabrook, Bonham & Baksh, 2003). In turn, increased time is spent on occupational areas of self-care (including sleep) and leisure (mostly passive), contributing to occupational imbalance and general occupational disengagement. This pattern of time use is consistent with poor health and well-being for the general population (Patel, Malhotra, Gotlieb, White, & Hu, 2006; Williamson, 1998; Ardell,
The time use patterns of adults with serious mental illness are related to community adjustment; since time use results in tangible products of activity, as well as a sense of satisfaction (Juster, Courant & Dow, 1985). Additionally, Williamson (1998) showed that occupational engagement plays an important role in adjustment to mental illness and disability.

1.2.4 Time Use, Occupational Balance and Occupational Engagement

Time use patterns can be studied in order to understand the way people structure their daily lives, with the concept of time use measurement existing internationally in several formats. For example, governments around the world collect time use data in standardized formats, often performed in the context of national censuses and surveys (such as Statistics Canada, NHK Japan, Survey Research Centre, USA), largely for economic reasons. Daily time use tracking also exists in some cognitive therapy interventions for illnesses such as depression and anxiety, used to raise awareness of the link between behaviour and health (Paterson, 1996). In health care, occupational therapists are known to use schedules and journals to aid clients in tracking time use informally, and activity logs, such as the Occupational Questionnaire (Smith, Kielhofner & Watts, 1986), have been standardized for use as assessment tools. Daily time use can be used within the realm of mental health care to assess both occupational balance and engagement.

It is evident from the body of research in this area that balanced time use and occupational engagement are linked to well-being. Despite the existence of time use measurement methods, and evidence of disrupted time use patterns in people with serious mental illness, assessment of time use has yet to be linked to a structured and evidence-based treatment of occupational imbalance and disengagement. No standardized treatment protocol or therapeutic tool exists to address this specific issue. Therefore, a standardized time use intervention with
clinical utility could be valuable in the treatment of community dwelling people with serious mental illness.

1.2.5 Assertive Community Treatment

The clients who participated in this study were all recipients of Assertive Community Treatment (ACT). The ACT model is a standardized method of delivering mental health services in a community setting. The ACT model follows a “multi-service case management approach” (Stein & Santos, 1998, p. 55), geared exclusively to people with serious mental illness (Ontario ACT Association, 2007). The model was designed to provide 24 hour a day, high intensity treatment support and rehabilitation in the community for people who would otherwise consume a high proportion of acute mental health services. The ACT model has been shown to decrease psychiatric hospitalizations and psychiatric symptoms in clients with serious mental illness (Bond, Drake, Mueser & Latimer, 2001). However, its impact on quality of life, community participation and psychological well-being is not as clear (Gomory, 2005; Krupa et al., 2004). A Cochrane review of the effectiveness of ACT services (Marshall & Lockwood, 1998) revealed that while ACT services are superior to standard community care in increasing compliance and decreasing hospitalization, no evidence was found regarding improvements in mental and social functioning.

ACT teams were a natural choice to pilot-test the “Action over Inertia” intervention for several reasons. First, all Ontario teams employ occupational therapists who are trained in delivering occupational interventions. Second, the structure of ACT services makes it easy to access clients in a community setting, on an individual basis. Finally, the client base of ACT teams allows access to clients who experience significant occupational disengagement.
1.3 **Significance of the Problem**

Given the evidence of occupational imbalance and overall occupational disengagement for this population, a therapeutic intervention that could be used to focus an individual’s attention to these issues, and encourage increased overall occupational balance and occupational engagement, would be valuable. As both occupational balance and occupational engagement have been linked to health and well-being and have been shown to increase community adjustment and life satisfaction, these are important areas of focus for mental health therapists.
Chapter 2
Literature Review

2.1 Process of Review

The goal of this literature review was to define the processes and components of both occupational balance and occupational engagement in the context of serious mental illness, as well as the influence of time use on well-being. It was also to explore the role of the Assertive Community Treatment model in the community treatment of people with serious mental illness and review existing non-pharmacological, community-based interventions to address occupational disengagement and imbalance.

Questions posed when reviewing the literature were: how is occupation related to health and well-being?; what is occupational balance and how does it relate to serious mental illness?; what is occupational engagement and how does it relate to serious mental illness?; how is the time use of people with serious mental illness different than the general population?; how do ACT teams address issues of occupational imbalance, disengagement and disrupted time use?; and what are the theoretical frameworks of interventions designed for use in the community for people with serious mental illness?

Several literature searches were performed, using databases such as AMED, CINAHL, EmBase, Google Scholar, Medline, PsychInfo, PubMed, and Scholar’s Portal. Search terms included occupational engagement, occupational balance, occupational deprivation, lifestyle balance, schizophrenia, serious mental illness, severe mental illness, psychiatric disability, psychosis, occupational therapy, meaningful occupations, time use, time use diary, time use measurement, temporal adaptation, occupations, health, well-being, recovery, community mental health, and Assertive Community Treatment (ACT).
Approximately 250 articles, book chapters and articles from websites were retrieved and reviewed for their relevance; 75 more articles were found using the reference lists of the relevant articles. Upon review, 135 articles were chosen for inclusion, based on the quality of the research and their applicability to the goals of the review.

2.2 Occupation and its Relation to Health

Wilcock (2006, p. 70-71) proposes that the most basic role of the human brain is to provide “healthy survival” for the human species. If survival is recognized as the primary drive of humans, it follows that humans use occupations as a means to prolong life. Wilcock goes on to define health as biological needs being met, with occupations providing the means to protect, maintain and nurture human life.

Occupation is central to human existence, shapes our lives, and can add to or detract from health and well-being. Research in this field has gone beyond mere survival of the species and has focused on “meaningful occupations,” those occupations that are goal directed and important to the individual; occupations that have an impact on quality of life (Law, Steinwender & LeClair, 1998). Participation in these activities is thought to meet psychological, biological and cultural needs, as well as provide opportunities to learn, create and use capacity, promoting mastery and a sense of self-worth (Kielhofner, 2004). A critical review of the research on occupation and health (Law, et al., 1998) revealed that there is a strong relationship between occupation, health and well-being. Occupations connect individuals to social networks, a fundamental part of participation in society; social networks have been shown to play a role in reducing morbidity and mortality (Eklund, 2006).

The connection of meaningful occupations and health unites in Yerxa’s (1998, p. 412) definition of health as “an encompassing, positive, dynamic state of ‘well-beingness,’ reflecting
adaptability, a good quality of life, and satisfaction in one’s own activities.” Similarly, the World Health Organization (WHO, 1998) supports that “health depends on the validation of the uniqueness of each person and the need to respond to each individual’s spiritual quest for meaning, purpose and belonging.”

A literature review (Goldberg, Brintnell & Goldberg, 2002) found that due to multiple factors, such as deficits in living skills and issues of occupational deprivation, people with serious mental illness often lack access to health through meaningful occupations. A review of occupation in relation to mental health (Rebeiro, 1998) revealed that occupation-based treatments can result in decreased symptomatology and improved social skills, self-concept and self-efficacy. Noordsy et al. (2002) links health to the concept of recovery from mental illness, defined as encompassing three areas: hope, taking personal responsibility, and getting on with life. The category of “getting on with life” includes identity, relationships, work and recreation, all of which are linked to occupational balance and occupational engagement. Hatfield & Lefley’s (1993) exploration of consumer experiences of mental illness shows the link between activity and recovery; stating that “accomplishment [comes] through working, ‘being the best’, engaging in hobbies and sports, participating in therapy groups and ‘getting well’” (p.149).

Personal accounts of recovery from mental illness support the link between activity and well-being (Nunes & Simmie, 2002). Derek Wilken, a comic diagnosed with bipolar disorder, founded the Cheers Project as a way to ‘move on’ from his illness. The Cheers Project is a group that teaches comedy skills to people with mental illness in Calgary, and has engaged Derek and others in fulfilling activity. Ian Chovil, formerly homeless, gradually recovered from schizophrenia by involving himself in work, beginning with delivering flyers, then moving to volunteering at a cable channel, where he eventually became the host of a television series about the mental health system. These stories appear to demonstrate the link between occupation and
wellness, and further support the need to address areas of occupational balance and engagement for people with mental illness.

2.2.1 Occupational Balance

Occupational balance is one of the central concepts underlying occupational therapy practice, which can be traced back to a speech given by Adolph Meyer, a founding father of occupational therapy, in 1922. In this speech he addressed the need to attend to the rhythms of daily life, specifically in the four areas of daily life: work, play, rest and sleep. Occupational therapy followed this framework in the 20\textsuperscript{th} Century by recommending a balance of work and play to promote wellness. More recently, the Canadian Association of Occupational Therapists (CAOT, 2002) has divided occupations into self-care, productivity and leisure. Occupational balance can then be defined as the way in which people satisfactorily organize their pattern of daily activities (Christiansen, 1996), with emphasis on the individuality of the allocation of time to self-care, productivity and leisure.

The idea that occupational balance is an individual concept is important to recognize, as research has failed to show a precise way to allocate time in order to achieve optimum health. The perception of balance can be influenced by the environment, as well as culture and values (CAOT, 2002). Yerxa (1998, p. 415) proposes that “to be healthy, [people] need to be taught to create an individualized balance of meaningful variety and redundancy through discovering, developing and acting on their own interests and by participating in the rules, habits and rituals of their cultures.” A pilot study on the relationship between occupational balance and health (Wilcock et al., 1997) showed that participants who perceived their current time balance to be ideal had superior health statuses than participants who did not feel their time balance was ideal, further supporting the individualization of occupational balance.
A review of lifestyle balance (Christiansen & Matuska, 2006) revealed that lower levels of mental health have been associated with both high and low levels of time pressure, suggesting that moderate amounts of structured time, such as daily or weekly work and social commitments, is beneficial. Christiansen & Matuska go on to recommend a regular sleep/wake routine (as influenced by circadian rhythms) and habitual lifestyle structure as a means to biological health. Backman (2004) conducted a literature review of occupational balance’s relationship to well-being and found that occupational balance is consistently an individualized concept, with no evidence that a prescription of time to categories of occupation will produce well-being. However, she did find that most people desire a balance of occupations from each category of self-care, productivity, leisure and rest and are most satisfied when they achieve their own perception of balance.

There is further evidence that certain trends in the balance of occupations will contribute to health and well-being, or conversely, detract from both. Two of the most obvious manifestations of imbalanced occupations are boredom and burnout, and both have been linked to ill health (Wilcock et al., 1997). While much of adult time is structured around work, which is beneficial in providing income, meaning and purpose, it can lead to burnout and the detriment of one’s health when it exceeds the capacity of an individual. On the other hand, boredom has been linked to health-risk behaviours, such as smoking, substance misuse, and neglect of positive action associated with healthy lifestyles (Ardell, 1986). Occupation is a user of time that lends purpose to life; without it, humans become bored, depressed and sometimes destructive (Wilcock 2006). Yerxa (1998) notes that people with disabilities who are more active vocationally and socially have been found to have higher survival rates than their less active counterparts.

Occupational balance can be difficult to achieve when people lack the resources to control their environment. Occupational imbalance, a disproportion of occupation resulting in
decreased well-being (Wilcock, 2006), can occur. Attaining occupational balance can be a challenge for people with serious mental illness when the outside environment imposes occupational deprivation. As previously noted, occupational deprivation is an activity imbalance caused by factors outside an individual’s control, resulting from social and geographical isolation, economic constraints, cultural differences, and sociopolitical conditions (Whiteford, 2000). These circumstances restrict access to occupations that typically balance the time use of the general population, such as working, education-related pursuits, parenting, volunteering, active recreation and socializing. A review of the literature by Eklund, Hansson & Ahlquist (2004) showed that competitive employment rates for people with serious mental illness are at 10-25%. Work has been shown to provide structure and balance to daily activities (Minato et al., 2004; Leufstadius, Erlandsson & Eklund, 2006), and the lack of work for this population perpetuates occupational imbalance. Marginalization and occupational deprivation create barriers to employment and education opportunities, compounded by the stigma associated with serious mental illness (Marwaha & Johnson, 2004; Prince & Prince, 2002; Whiteford, 2000; Baron, 1995; Davidson et al., 1995). These barriers to achieving balance are a troubling issue for people with serious mental illness, as occupational balance is implicitly related to health.

To date, no intervention has been developed to specifically address occupational balance for people with serious mental illness. To target occupational imbalance, Backman (2004, p. 207) writes that “re-organization requires self-reflection, identification of perceived imbalances, how they developed, analysis of their impact, and creative solutions with sufficient appeal to motivate people into action.”
2.2.2 Occupational Engagement

Bejerholm & Eklund (2007, p. 21) define occupational engagement as “the extent to which a person has a balanced rhythm of activity and rest, a variety and range of meaningful occupations and routines, and the ability to move around in society and interact socially.” Furthermore, occupational engagement takes place over time and involves interpretation and comprehension of the experience. It is an active and conscious experience for the individual, and therefore occupations that are meaningful lend themselves to occupational engagement.

Occupational engagement is conceptualized as being central to human wellness and is integral to participation in society. Historically, occupational therapists focused on engaging people in occupations as treatment, and have continued that tradition into the twenty-first century (Barris, Kielhofner & Hawkins Watts, 1983). Engagement in occupations enables humans to learn competency (Yerxa, 1998). Within occupational therapy, increasing occupational engagement is viewed as a goal toward enhanced quality of life, as meaningful activity has been shown to play a central role in quality of life (Bejerholm & Eklund, 2006b).

Rebeiro & Cook (1999) conceptualize therapeutic occupation as being based upon four broad beliefs: first, that engaging in occupations provides a positive focus for one’s attention; second, that structure and balance are provided to one’s day through engaging in occupations; third, that engaging in occupations is a vehicle to physical and mental health; and fourth, meaning and purpose are provided through occupational engagement. Wilcock (2006) proposes that engaging in occupations not only meets our needs for health, it contributes to well-being through purposeful and meaningful activity.

In an attempt to capture the critical elements of occupational engagement for people with serious mental illness, Bejerholm, Hansson & Eklund (2006) developed the Profiles of Occupational Engagement in people with Schizophrenia (POES) measure. They identified nine
categories contributing to occupational engagement, which are: 1. daily rhythm of activity and rest, 2. variety and range of occupations, 3. place, 4. social environment, 5. social interplay, 6. client interpretation, 7. extent of meaningful occupations, 8. routines and 9. initiating performance. The ratings in each category are performed by an occupational therapist, based on information from client time diaries. This measure is the first of its kind and attempts to capture the intrinsic and extrinsic factors involved in occupational engagement. The central concept of the POES is the belief that each category contributes to overall wellness and quality of life, and that a balance of all nine is needed to maintain health.

A follow up study to the development of the POES (Bejerholm & Eklund, 2007) showed that a higher level of occupational engagement was associated with fewer psychiatric symptoms and better quality of life. Reasons for low levels of occupational engagement could include a deprived environment, few occupational opportunities and deficits in the ability to process occupational and environmental stimuli.

Low levels of occupational engagement, or occupational disengagement, is a chronic issue for people with serious mental illness living in the community. As previously discussed, the process of deinstitutionalization has neglected a large component of community life, the active engagement in one’s daily life. Where institutions once provided structure, direction and opportunities for socialization, mental health policy and service delivery has failed to address these areas. Consequently, community dwelling individuals with serious mental illness have patterns of engagement that differ from the general population.

Research shows that in general, people with disabilities are less likely to participate in diverse activities; activity becomes more home-based, with fewer social relationships and active recreation (Pentland & McColl, 1999). The activities of people with serious mental illness follow
this same pattern; they are less likely to hold competitive employment (Harvey, Fossey, Jackson & Shimitras, 2006) and engage in active leisure (Harvey et al., 2006; Krupa et al., 2003). A recent study of people with serious mental illness (Shimitras et al., 2003) confirmed that few participants were engaged in work, active leisure (such as hobbies and sports), education or volunteer occupations. The occupational disengagement in this population, and the evidence for the importance of occupational engagement as a vehicle to health and quality of life, makes it an important area of focus for professionals treating people with serious mental illness.

2.3 Time Use Patterns

Time use is often studied in an effort to understand the occupational lives of individuals and populations. Governments collect time use data to understand productivity and economic trends (Christiansen, 2005) and to inform policies regarding social welfare programs and health care (Statistics Canada, 1998). Employers may use time use data to assess work-life balance and the need for flexible work schedules. A health care system might study the time use of a population due to the apparent links between time use and health and well-being (Whiteford, 2000; Christiansen, et al., 1999).

A review of time use and health literature (Pentland & McColl, 1999) revealed that the link between activity participation and health is clear: active participation in a variety of daily activities and roles will positively impact health and well-being. This review also showed that to be properly understood, time use should be considered both objectively and subjectively. Objective time use measurement would consider the actual amount of time spent in an activity, while the subjective component would include the personal experience or preference for the activity. Furthermore, the three aspects of time use that should be considered are the allocation of time, the balance of time use and satisfaction with time use.
Time can be categorized into 4 areas of activity in order to facilitate its analysis: self-care, productivity, leisure and sleep. Self-care includes occupations that look after oneself (CAOT, 2002), such as hygiene activities, eating meals, prayer and meditation. These activities are vital to one’s health and well-being, but are reported to offer lower satisfaction than other categories as self-care activities are often performed alone (Robinson, 1999; Dow & Juster, 1985; Juster, 1985).

Productivity consists of occupations that make a social or economic contribution, or that provide for economic sustenance (CAOT, 2002). Examples include work, educational activities, care of others, household maintenance, shopping, and volunteering. Productive activities have been shown to enhance one’s satisfaction (Reid, 1995; Dow & Juster, 1985), although household activities are shown to be the least satisfying activities in this category (Robinson, 1999; Juster, 1985). Work activities have been shown to lead to enhanced well-being (Haworth, 2004; Law et al., 1998; Juster, 1985).

Leisure activities are defined as occupations for enjoyment (CAOT, 2002). Examples of these include socializing, creative activities, sports, games, surfing the internet, and watching television. It is important to differentiate between passive and active leisure, as health benefits differ between the two categories. Passive leisure activities are those that do not typically require active engagement and are frequently performed alone, such as watching television, reading a book, or listening to the radio. Passive leisure activities are less associated with physical health and have been shown to be less satisfying than active leisure activities (Lampinden, Heikkinen, Kauppinen & Heikkinen, 2006; Iso-Ahola & Mannell, 2004; Menec, 2003; Robinson, 1999), perhaps because they require little social interaction (Robinson, 1999; Juster, 1985). Active leisure includes such activities as sports, games, computer activities, arts and crafts, and exercise.
activities. Both active leisure and socializing have been shown to be highly satisfying to individuals (Menec, 2003; Robinson, 1999; Dow & Juster, 1985).

The category of sleep includes night sleep and incidental naps. Sleep is recognized as an essential activity for health promotion and chronic disease prevention, although sleep beyond 7-9 hours per day is not recommended (Centers for Disease Control and Prevention, 2008). As well, naps have been found to be less satisfying to individuals than actively engaging in activity (Robinson, 1999; Dow & Juster, 1985).

Time use research can be used to investigate both occupational balance and occupational engagement, as these two concepts relate to the way time is allocated. Occupational balance, put simply, is the satisfactory division of time between daily activities. The investigation of an individual’s or population’s time use will reveal the balance and rhythm of the day’s activities, such as the balance between activity and rest, and the breakdown of self-care, productivity and leisure. Occupational engagement encompasses the balance of activities, as well as the variety, meaning and social elements of daily time use. The subjective elements of time use measurement will reveal the extent of occupational engagement, such as satisfaction with time use and individual preference for activities, along with objective elements such as the daily variety of activities, overall balance, roles and environments an individual occupies.

2.3.1 The Time Diary Method

The simplest and most economical method of time use data collection is the time diary method. It is employed by governments, policy researchers and health care professionals as a simple way to capture the daily lives of individuals and populations. Because time diaries provide rich time use data, they offer a basis for comparison between populations and people or groups with activity participation restrictions (Farnworth, 2003).
Time diaries often take the form of a “yesterday diary” (Lawton, 1999), where a participant, often with the help of the researcher, recalls the activities of the previous day’s 24 hours. A review of time diary methodology by Robinson (1999) showed that time diaries are both a reliable and valid way to capture time use in the general population. Week day time use is typically captured, as time patterns vary on the weekend in societies with typical Monday to Friday work weeks. Taking time use data from two working days of the week increases the likelihood that results reflect typical weekday activities (Michelson, 2005).

Time diaries have limitations, as with any research instrument, such as their dependence on memory, the reluctance of some respondents to detail personal activities such as personal care and sexual relations, and the difficulty in capturing the overall experience of an activity in a time diary format.

2.3.2 Time Use of the Canadian Population

For the purpose of this review, data from the Statistics Canada 1998 General Social Survey was used (Statistics Canada, 1998). In 1998, the government agency used the categories of personal care, work and free-time to describe time use other than sleep, equivalent to the categories of self-care, productivity and leisure from occupational therapy literature.

The time use information from this survey was gathered from Canadians aged 15 years and older, excluding residents of the northern territories and people that lived full-time in institutional settings. The sample included 10,749 people and the format for data collection was a 24 hour time recall diary, collected through telephone interviews.

The average daily time use for Canadians in this survey was: 7.8 hours spent in productivity (3.6 hours in paid work, 3.2 hours in household activities, 0.4 in voluntary and civic
duties, and 0.6 in education activities), 2.3 hours in self-care, 5.8 hours of leisure time (1.9 hours socializing, 2.7 hours in passive activities, and 1.2 hour in active leisure), and 8.1 hours of sleep.

Christiansen’s (2005) review of time use revealed that there is some international consistency of time use patterns across industrialized countries, with data from North America closely resembling that of Sweden, Germany and Australia.

### 2.3.3 Time Use of Community Dwelling People with Serious Mental Illness

Recently, several studies have been conducted regarding the time use of community dwelling people with serious mental illness, all revealing similar patterns of time use for this population. Studies from Japan, Canada, the United Kingdom and Sweden (Leufstadius et al., 2006; Minato et al., 2004; Krupa et al., 2003; & Shimitras et al., 2003) confirm that this population’s time used for sleep is significantly higher than that of the general population. Furthermore, activities are likely to occur in the home rather than the community at large, limiting access to social opportunities. Productive activities tend to centre around home maintenance rather than paid work or education (Krupa et al., 2003) and a higher proportion of leisure time is spent in passive activity, rather than active (Krupa et al., 2003; Shimitras et al., 2003; Minato et al., 2004). Productive activities that are centred around home maintenance and passive leisure have both been shown to be less satisfying than productive activities outside the home and active leisure (Dow & Juster, 1985; Juster, 1985).

To contrast the above time use of the Canadian population, Krupa et al. (2003) found that their sample of community-dwelling Canadians with serious mental illness engaged, on average, in 2.4 hours of self-care, 3.4 hours of productivity, 8.7 hours of leisure, and 9.5 hours of sleep; these numbers show a large discrepancy in the balance of time use for people with serious mental
illness when compared to the general population. The other previously quoted time use studies for people with serious mental illness showed similar patterns of occupational imbalance.

These time use trends are worrisome in light of the previously discussed research showing the negative effects of under-occupation. Ardell (1985) revealed that boredom can have just as dangerous an impact on health as extreme stress. Furthermore, a study on the effects of activity restriction (Williamson, 1998) reported that the inability to perform or lack of access to preferred activities contributed to the symptoms of mental illness. Marwaha & Johnson (2004) showed that work is correlated with positive outcomes in symptom levels, quality of life, self-esteem and social functioning, but is still a largely unrealized goal as employment rates for people with serious mental illness remain shockingly low.

With the absence of employment for people with serious mental illness, work does not lend structure to the day, thus increasing amounts of time spent in passive activity such as sleep and passive leisure. A review of work and unemployment (Scanlan & Beltran, 2007) showed that leisure is often conceptualized as “earned” through time spent in productivity, thus the unemployed often experience “enforced and endless free time” (p.326), which can have a negative effect on well-being. A study of non-vocational outcomes of work for people with serious mental illness revealed that, even after controlling for baseline levels of functioning, employment was associated with lower levels of symptoms, improved self-esteem, and higher satisfaction with finances and vocational services (Mueser et al., 1997).

Work has been shown to normalize time use patterns (Leufstadius et al. 2006; Minato et al., 2004), provide satisfaction with time use (Eklund et al., 2004) and influence personal status and identity (Scanlan & Beltran, 2007). It is not surprising that this population, which has very high levels of unemployment, has time use patterns that demonstrate occupational imbalance and
disengagement. Passive, home based activities do not readily facilitate the experience of occupational engagement through meaningful activities. This lack of community access decreases opportunities for social connection and the experience of meaningful occupations, and should be addressed by the clinicians that work with people with serious mental illness.

2.4 Assertive Community Treatment and Community Integration

The Assertive Community Treatment (ACT) model was developed in an effort to provide long-term mental health treatment to community-dwelling people with serious mental illness, with a main goal of reducing hospitalization for this population. Created in Wisconsin during the 1970s, it was a response to the failure of the deinstitutionalization of people with serious mental illness. Deinstitutionalization had proceeded with few community supports; subsequently many people were re-admitted to hospitals within a year of discharge (Bond, et al., 2001). ACT services have been widely adopted across North America as a model of community mental health service delivery; ACT was named as one of six best practices for people with severe mental illness by the Dartmouth Psychiatric Research Centre (Mueser, Torrey, Lynde, Singer & Drake, 2003).

There are strict criteria for the provision of ACT services, guided by evidence based practice. ACT teams are multi-disciplinary in nature, provide case management services largely in the community with small staff to client ratios (usually 1:10), and are available 24 hours a day, 7 days a week (Ontario ACT Association, 2007). ACT is geared toward service users who would otherwise consume a large proportion of in-patient psychiatric services (Bond et al., 2001). Typical ACT clients have a serious mental illness that significantly impairs their ability to live independently in the community, such as schizophrenia or bipolar disorder. They also have functional impairments that cause difficulties in maintaining activities of daily living, employment, or safe housing. Finally, ACT clients have further issues that create a need for high
intensity services in the community, such as severe psychiatric symptoms, substance abuse, involvement with the criminal justice system due to their mental illness, or difficulty using outpatient services (Ontario Ministry of Health and Long-Term Care, 2004). ACT services are designed to address all the above issues faced by people with serious mental illness, using a holistic and team-oriented approach.

A review of the evidence regarding the effectiveness of ACT (Bond et al., 2001) revealed that ACT services have been shown to substantially reduce psychiatric hospital use, increase housing stability, and moderately improve psychiatric symptoms and subjective quality of life. However, there are some criticisms of the ACT model. Gomory (2002) makes the case that decreases in hospitalization rates are often the result of administrative policies against hospitalization, rather than the success of ACT services themselves. ACT services have also been criticized as being paternalistically imposed on clients (Gomory, 2005; 2002; Thornicroft, 2000); used as vehicles of public protection, rather than empowering services for people with serious mental illness. Gomory (2005; 2002) also points out that the body of evidence regarding ACT has failed to prove ACT services more effective than standard care in improving psychiatric symptoms and psychosocial functioning.

Just as Assertive Community Treatment has struggled to provide improvements in client quality of life, occupational therapists working on ACT teams have a challenging task of improving occupational engagement and balance. While the ACT goal of enhancing community adjustment and quality of life is consistent with an occupational focus (Krupa, Radloff-Gabriel, Whippey & Kirsh, 2002), the ability of ACT occupational therapists to promote occupational goals is often limited by the practical application of ACT services. A qualitative study of experiences of ACT service providers in Ontario (Krupa, Eastabrook, Beattie, Carriere, McIntyre & Woodman, 2004) revealed that rehabilitation goals are often overshadowed by crisis
management and stabilization of clients. In fact, clients viewed as psychiatrically stable may receive fewer ACT visits, constraining the ability to build on client skills and set goals that enable community integration (Krupa et al., 2002). A subsequent study of the experiences of ACT service recipients in Ontario (Krupa et al., 2005) echoed feelings of dissatisfaction with the lack of focus beyond medication management and illness stabilization. Clients stated that ACT workers often appeared rushed, as if in a hurry to visit others who were acutely ill, leaving more stable clients trapped in a “plateau” (p. 22), with no time to develop client interests and “gifts” (p.22). A review of the effectiveness and consumer satisfaction of an ACT program in Ohio (Ben-Porath, Peterson & Piskur, 2004) showed that although ACT clients and their families were highly satisfied with ACT services, both groups rated themselves least satisfied with employment outcomes. This research highlights the issues faced by ACT teams and their occupation therapists, in providing services that not only maintain psychiatric stability, but provide opportunities for clients to have occupationally enriched lives.

The challenges faced by ACT teams are not unique, as a review of the community integration of people with serious mental illness in the United States (Bond et al., 2004) revealed that genuine community integration remains unrealized. Community integration was defined in the review as the “circumstance in which individuals with disabilities live, work, play and lead their daily lives without distinction from and with the same opportunities as individuals without disabilities” (Bond et al., 2004, p. 570). Community integration manifests in competitive employment, independent living and social inclusion. However, many people with serious mental illness, including ACT service recipients, exist in a world controlled by mental health professionals, populated with the parallel systems of day programs, group homes, and sheltered work programs.
Community integration influences both occupational engagement and balance. With integration comes an opportunity for occupational engagement, through activities such as work, active leisure and socialization. This in turn influences occupational balance, as activity participation gives structure to daily life.

The challenge experienced by ACT teams, to provide more for their clients than simply a reduction in hospitalization rates, makes the teams a logical choice to pilot test an intervention that addresses community integration through time use, while also targeting occupational balance and occupational engagement. ACT teams in Ontario are required to employ at least one occupational therapist in the multi-disciplinary team, further demonstrating the practicality of using ACT teams to test an intervention that is occupational in nature.

2.5 Existing Interventions for People with Mental Illness

To date, there is no published intervention that addresses the issues of time use, occupational balance and occupational engagement for people with serious mental illness. However, there are several techniques and interventions used in the field of mental health practice to influence aspects of community participation. Although these treatment tools do not directly target occupational balance or engagement, they have been shown to be effective in improving the knowledge and health behaviours of people with various types of mental illness. While several of the following tools and techniques have been designed and tested with people diagnosed with schizophrenia and other psychotic illnesses, some have yet to be trialed with this population. In these cases, the evidence involving other diagnoses, such as depression, is related. Since depression is often conceptualized as a severe and debilitating illness, with functional limitations mirroring those of serious mental illness (Cara, 1998), treatments relevant to depression may be useful for people with serious mental illness as well.
One of the best known techniques used in mental health interventions is psychoeducation. It is defined by Goldman (1988, p. 667) as: “education or training of a person with a psychiatric disorder in subject areas that serve the goals of treatment and rehabilitation.” These goals might include enhancing acceptance of the illness, promoting active engagement with treatment and rehabilitation, and enhancing coping skills needed to deal with the illness. A recent Cochrane review of psychoeducation for schizophrenia and related illnesses (Pekkala & Merinder, 2002) suggested that psychoeducation is a useful and inexpensive treatment tool for this population. A review of the research on illness management and recovery (Mueser et al., 2002) found that broadly based psychoeducational programs were consistently effective in increasing knowledge regarding mental illness, but did not show the ability to change behaviors.

A popular psychoeducational tool that attempts to address both knowledge and behavior is the Recovery Workbook (Spaniol, Koehler, & Hutchinson, 1994). Designed for people with serious mental illness to teach coping skills that foster behaviors related to recovery, such as illness management, work, and recreation (Noordsy et al., 2002), it is widely used in North America. Little research has been completed regarding its effectiveness; however, a recent randomized controlled trial of the Recovery Workbook (Barbic, 2007) showed improvements in the areas of hope, empowerment and goal orientation. However, changes in quality of life and health oriented behaviors were not found, supporting Mueser et al.’s (2002) findings that psychoeducational programs alone may not produce behavioral change.

A practical treatment approach used with people with serious mental illness is the provision of support to engage in activities and integrate with the community. Two evidence-based examples of this approach are supported employment and supported housing. Supported employment, part of vocational rehabilitation, is a “well-defined approach to helping people with disabilities participate as much as possible in the competitive labor market, working in jobs they
prefer with the level of professional support they need” (Bond et al., 2001, p.313). Supported employment was listed as one of six best practices for people with serious mental illness by the Dartmouth Psychiatric Research Centre (Mueser et al., 2003). Bond et al. (2001) detailed strong evidence regarding the achievement of competitive employment for people with serious mental illness when using the supported employment framework. A meta-analysis of the effectiveness of supported employment for people with schizophrenia revealed that this type of intervention was highly effective in the achievement of competitive employment when compared to traditional services (Twamley, Jeste & Lehman, 2003).

Supported housing has been used with people with serious mental illness to increase community tenure and prevent homelessness, as well as promote community integration. Sylvestre, Nelson, Sabloff & Peddle (2007) discuss the need for supported housing rather than custodial type housing, where staff provide meals and home maintenance services. When a consumer leaves custodial housing, they often have not had the chance to acquire and practice basic life skills. In contrast, supported housing provides “access to normal housing in the community and to individualized and flexible supports” (Sylvestre et al., 2007, p.126). This type of service provision values consumer participation and community integration. A study comparing people with serious mental illness living in supported housing to those in boarding-home style accommodations showed that residents of supported housing report more choice and scored higher in measures of autonomy (Nelson, Hall & Walsh-Bowers, 1997).

A psychology-based mental health technique that targets issues in cognition and behavior is cognitive behavioral therapy (CBT). Many variations of CBT exist, and several have been found to be effective in producing positive change for people with mental illness. One type is cognitive therapy, developed by Aaron T. Beck in the late 1960s, which has been proven in numerous clinical trials to be effective for a wide variety of disorders. Therapists help clients to
overcome their difficulties by changing their thinking, behavior, and emotional responses (Beck
Institute, 2008). Recently, a benchmarking study of Beck’s cognitive therapy of people with
depression (Merrill, Tolbert & Wade, 2003) found strong evidence for the effectiveness of this
therapy in reducing depressive symptoms. A Cochrane review of CBT for schizophrenia reported
that it is a promising intervention to help clients change thinking patterns that underpin distress
(Jones, Cormac, Neto & Campbell, 2004).

A student of Beck, Christine Padesky, developed “Mind Over Mood”, a cognitive therapy
intervention for people with depression and anxiety disorders (Greenberger & Padesky, 1995).
This structured workbook addresses how thought patterns impact mood and behaviour, with the
goal of helping users modify their negative core beliefs and assumptions through education and
self-reflection. No studies of the effectiveness of this specific intervention have been run,
however, the effectiveness of Beck’s cognitive therapy has been well established in the literature.

Another intervention based around CBT principles is the Changeways Core Program
(Paterson, 1996), which is a group program, complete with a client workbook, designed to
address anxiety and depression in a systematic way. Changeways emphasizes the client’s
responsibility in the recovery process, challenges negative thinking and seeks to re-activate their
lifestyle through education and goal-setting. This program has demonstrated significant
outcomes in the reduction of anxiety and depression, and moderate changes in client perceived
quality of life (Changeways Clinic, 2008).

An emerging concept in the treatment of depression is behavioral activation (BA). An
original component of Beck’s cognitive therapy, it has evolved into a stand alone concept that
attempts to help depressed people re-engage in their lives through focused activation strategies
(Jacobsen, Martell & Dimidjian, 2001). Cuijpers, van Straten & Warmerdam (2007) performed a
meta-analysis of the evidence regarding BA and depression, and found that BA performed equally well, and sometimes better, when compared to cognitive therapy and other psychological treatments. An advantage of BA over other treatments is that it is a relatively uncomplicated and time-efficient treatment.

In a recent randomized controlled trial (Dimidjian et al., 2006), a BA intervention was comparable to the effect of antidepressants and outperformed cognitive therapy for people with severe depression. The BA intervention in this study emphasized the relationship between mood and activity, focusing on breaking patterns of avoidance that lead to disengagement from life. BA focuses on encouraging activity engagement and the identification of activities congruous with long-term goals. The intervention’s focus on problem solving in the “here and now” appears to have a positive effect for clients with very complicated problems and high levels of distress (Wallbridge, Furer & Lionberg, 2008).

All of the above techniques and interventions for people with mental illness have strong evidence to support their use as best practices with this population. Although none of them directly target occupational balance and occupational engagement through knowledge and behavior, there are several elements that could be useful in an occupational time use intervention for people with serious mental illness. Psychoeducation, while not directly producing behavioral change, may set the stage for change through education and empowerment. Interventions that offer support to engage in activities and integrate with the community are frequently effective in improving mental health outcomes. Cognitive behavioral therapy (CBT) has been shown to produce improvements in psychiatric symptoms and subjective quality of life; increased awareness of thoughts, feelings and behaviors may benefit people with serious mental illness. Behavioral activation, a therapy related to CBT, has been shown to be very effective for people
with severe depression, suggesting that those with serious mental illness could benefit from an intervention that promotes engagement in activities.

2.6 Intervention Description

In response to a lack of interventions for issues of occupational balance and engagement, the research team (Primary Investigator, Graduate Supervisor and several Kingston community occupational therapists) developed “Action over Inertia.” This 12-week time use intervention (Krupa et al., 2007) was designed in a workbook format with the goal of providing a focused intervention for reconnecting individuals with serious mental illness and activity to promote health and well-being. It is designed to be provided in a one-to-one format, delivered in this study by trained occupational therapists (OTs).

Best practice in the areas of occupational balance and occupational engagement were used in the development of the intervention. Also used were several mental health treatments from the literature review that were well supported by research: psychoeducation, behavioral activation and supported activity engagement and community integration. The intervention was designed with flexibility in mind; the content can be covered in 10-12 weeks in case of missed meetings due to holidays, illness or scheduling conflicts. Most sections contain a variety of information sheets and worksheets to allow the therapist to tailor the content to the needs to the client, to best address individual issues related to occupational imbalance and occupational disengagement. The intervention contains a balance of educational material and worksheets to prompt reflection on current levels of occupational balance and occupational engagement. The intervention is roughly divided into two parts, the first aimed at reflection on current activity levels and patterns (weeks 1-6), and the second aimed at goal setting and goal attainment to improve occupational balance and occupational engagement (weeks 7-12). The intervention
moves through 5 stages: Preparation (week 1), Reflection (weeks 2-5), Education (week 6), Planning (weeks 7-8) and Action and Evaluation (weeks 9-12). See Appendix A for a more detailed description of the intervention.

All OTs involved in the delivery of the intervention were trained by the Primary Investigator (PI) prior to the beginning of the study to ensure consistency of the treatment. Training involved individual sessions of 2-3 hours for each therapist with the PI, covering the study protocol and the intervention content. Therapists were provided with all material several weeks in advance of the training session to ensure that they were familiar with the content and could ask relevant questions during the training. Therapists were able to speak with the PI as needed throughout the study to clarify issues with the study protocol or intervention content.

2.7 Study Objectives

2.7.1 Research Questions

This study was designed to evaluate three main concepts regarding the efficacy of “Action over Inertia,” a new occupational time use intervention (Krupa et al., 2007). These concepts are:

1. **Occupational balance**, defined as the way in which people satisfactorily organize their pattern of daily activities (Christiansen, 1996, p. 436).

2. **Occupational engagement**, defined as “the extent to which a person has a balanced rhythm of activity and rest, a variety and range of meaningful occupations and routines, and the ability to move around in society and interact socially” (Bejerholm & Eklund, 2007, p. 21).

3. **Clinical utility**, defined as “judgments regarding appropriateness, accessibility, practicability and acceptability of practices” (Smart, 2006, p. 380).
Based on the above definition of each concept, the research questions to investigate the efficacy of this new occupational time use intervention for community-dwelling people with serious mental illness are:

1. Can the “Action over Inertia” intervention be used to improve occupational balance?
2. Can the “Action over Inertia” intervention be used to improve occupational engagement?
3. Does the “Action over Inertia” intervention show clinical utility?

2.7.2 Hypothesis

Participation in “Action over Inertia,” a 12 week occupational time use intervention, will lead to improved occupational balance and occupational engagement. The occupational time use intervention will also demonstrate clinical utility.
Chapter 3
Methods

3.1 Research Design

This study followed the format of a prospective, multi-centre randomized controlled trial. The design of the experiment followed a pre-test/post-test model. The control group received standard ACT care, while the treatment group received the 12-week “Action over Inertia” intervention in addition to standard ACT care.

Randomized controlled trials are considered the “gold standard” to test new therapeutic regimens in specific groups of patients (Jolley, 2004, p. 264), and as such was a natural choice for the study design of this pilot-test of “Action over Inertia.” The use of Assertive Community Treatment (ACT) teams in this study aims to control treatment-related confounding variables by standardizing the type of community treatment received by the participants. The provision of ACT services is regulated by the Ontario Ministry of Health and Long-Term Care and facilitated by the Ontario ACT Association, which further ensures that the standards of treatment are similar across ACT teams (Ontario ACT Association, 2007).

Blinding was used when possible to reduce bias in the research process. The Primary Investigator (PI) randomized the participants to control and treatment groups while blinded, with no knowledge of participant characteristics, using unique identifiers pulled randomly from a hat. It was not possible for the PI to be blind to treatment conditions during the study; due to a lack of funding, the PI coordinated the entire RCT. The occupational therapists (OTs) who delivered the treatment were not able to be blinded since they personally recruited the subjects from their ACT teams, and were aware of who received treatment and who was a control participant. The Graduate Supervisor, who rated all the Profiles of Occupational Engagement in People with
Schizophrenia (POES, see section 3.5.2) was blind to treatment condition and time of testing during these ratings, to reduce the risk of bias while rating participant change.

### 3.2 Sample Selection

This study was conducted in southeastern Ontario, involving participants with serious mental illness served by community mental health teams that follow the Assertive Community Treatment (ACT) model. Five ACT teams participated, with teams from Kingston (2 teams), Belleville (1 team) and Ottawa (2 teams). These teams were chosen through contacts between Queen’s University and the ACT team OTs; approval was received from each ACT team’s management for participation in the study, as well as ethical approval from Queen’s Research Ethics Board and other applicable organizational Ethics Boards (see Appendices L-O).

Sampling of participants from small, medium and large urban centres addressed issues of external validity, making data more applicable to the provincial population of ACT service recipients. Use of ACT teams ensured that participants were receiving similar psychiatric treatment and controlled treatment-related confounding variables. Sampling followed a non-probability format due to the specificity of the sample required. Convenience sampling was used, requesting volunteers with serious mental illness currently served by the 5 selected ACT teams. The ACT teams were asked to identify and recruit clients that fit the inclusion and exclusion criteria, and the first 6 participants from each ACT team that volunteered to participate and give informed consent were included in the study. At least 6 participants were sought per team; however, not all teams were able to secure this number of participants. After informed consent was obtained, participants were randomized into control and treatment groups. ACT teams were randomized individually so that approximately half of the participants from each ACT team were control participants receiving standard ACT care and the other half were treatment participants.
receiving standard ACT care plus the “Action over Intertia” treatment. This gave approximately equal numbers of control participants (n=8) and treatment participants (n=10) at the completion of the study (see Figure 1).

Informed consent was obtained from all participants and confidentiality was maintained at all times during and after the study. To avoid contamination of the data and treatment, the participants recruited to the study were not case managed by the OTs, thereby avoiding any chance that the controls would indirectly receive the time use intervention. When the OTs became involved in the treatment phase, there was danger that their focus on time use could carry over into their treatment of other clients they case manage; by making sure that all control participants were not in regular contact with the OT, this problem was avoided. The OTs gave minimal information about the intervention to their ACT colleagues during the treatment phase as well, to further avoid the above problem.

3.2.1 Inclusion Criteria

Inclusion criteria were: 1. Adults (18-65 years of age), 2. primary diagnosis of a severe psychiatric disorder with a psychotic feature, 3. team and self-perceived occupational imbalance and occupational disengagement (see Appendix B for further information), 4. fluent in English, 5. living in a community setting and receiving ACT treatment, 6. own legal guardian (thus competent to give consent to participate), and 7. are willing to give written informed consent to participate in the study.

3.2.2 Exclusion Criteria

Exclusion criteria were: 1. Unstable mental health, 2. lack of interest in the time use intervention, or satisfaction with current time use and occupations, and 3. ACT team OT is participant’s main case manager.
3.3 Assessment Procedure

The study participants engaged in the pre-test portion of the study for 2 weeks prior to the 12-week intervention, and were post-tested approximately 2 weeks after the intervention finished, requiring 16 weeks of participation from each participant (see Table 1 for detailed study timeline). Each ACT OT collected the pre and post-test data for all of their own participants, thus it was not possible to blind them to the treatment status of the participants. All 5 OTs were trained in the data collection procedure by the PI prior to the beginning of the study. The OTs completed demographic questionnaires during the pre-test phase for each participant using information from their ACT charts (see Appendix C). Two measures, the time diaries and Engagement in Meaningful Activities Survey (EMAS), were collected directly from all
participants, which formed the basis for the investigation of occupational balance and occupational engagement.

Treatment participants completed a feedback questionnaire during the post-test phase, in order to contribute to the evaluation of clinical utility (Appendix G). Each ACT OT also completed a feedback questionnaire at the end of the study for the same purpose (Appendix H).

Table 1: Study Timeline

<table>
<thead>
<tr>
<th>PRE-TEST</th>
<th>TREATMENT PHASE</th>
<th>POST-TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 weeks</td>
<td>Week 1</td>
<td>Week 12</td>
</tr>
<tr>
<td></td>
<td>Weeks 2-11</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TREATMENT GROUP</th>
<th>PRE-TEST</th>
<th>TREATMENT PHASE</th>
<th>POST-TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT</td>
<td>EMAS and two-day time diary are completed by participant. Demographic Questionnaire is completed by the OT.</td>
<td>Orientation to “Action over Inertia” Weeks 9-11: Action</td>
<td>Conclusion and debriefing with OT.</td>
</tr>
<tr>
<td>GROUPTREATMENT</td>
<td></td>
<td>Weeks 2-5: Reflection on current activity patterns. Week 6: Education regarding time use and health. Weeks 7-8: Planning and goal-setting and evaluation of progress.</td>
<td>EMAS and two-day time diary are completed by participant, as well as the Feedback Questionnaire.</td>
</tr>
<tr>
<td>CONTROL</td>
<td>EMAS and two-day time diary are completed by participant. Demographic Questionnaire is completed by the OT.</td>
<td>NO INTERVENTION</td>
<td>EMAS and two-day time diary are completed by participant.</td>
</tr>
</tbody>
</table>
3.4 Assessments

In order to fully investigate each of the study questions, measures of occupational balance, occupational engagement and clinical utility were selected (Table 2). As this intervention focuses on time use as a contributor to occupational balance and engagement, it was important to incorporate time use information into the data collection. Both occupational balance and engagement were measured using the same protocol at pre and post-test, with clinical utility measured at post-test only (Table 1).

Time diaries formed the basis of comparison for the evaluation of occupational balance. Actual time was measured, in the form of two 24-hour time diaries at both pre-test and post-test (see Appendix D). Harvey & Singleton (1989) showed that time use diaries offer reliable information on time allocation for the lowest possible cost. Over a 2 week period at both pre- and post-test, participants were asked to collect information on two different weekday’s time use; pre-selecting days that would be most typical of their time use. The OT met with the participant the day after each scheduled recording day to complete the “yesterday diary” (Lawton, 1999), a usual practice in time use data collection (McLean, 1999; Statistics Canada, 1998). In this way data recorded by the participants was reviewed for accuracy for both days. Changes in occupational balance were assessed by the PI by calculating changes in time allocation in categories of self-care, productivity, leisure and rest, calculated using the Statistics Canada (1998, Appendix I) time codes.

Occupational engagement was assessed using two measures. The first was the Profiles of Occupational Engagement for people with Schizophrenia (POES, Appendix E), designed to objectively measure occupational engagement from time diary data. The ratings were performed by the Graduate Supervisor who was blind to the treatment conditions. The second measure of
occupational engagement, was the Engagement in Meaningful Activities Survey (EMAS, Appendix F), completed directly by the participants.

The final construct that was measured was clinical utility, using questionnaires designed by the research team to gather information on the intervention process from both the participants and OTs (see Appendices G & H). The questionnaires were developed in consultation with the “Action over Inertia” authors; referencing evaluation literature (Grbich 2004; Borg & Gall, 1989) and published trials of new interventions (Zijlstra, van Haastegt, van Eijk & Kempen, 2005; Wdowik, Kendall, Harris & Keim, 2000).

**Table 2: Assessments**

<table>
<thead>
<tr>
<th>CONSTRUCT</th>
<th>DEFINITION</th>
<th>MEASURE(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Occupational Balance</strong></td>
<td>The way in which people satisfactorily organize their pattern of daily activities (Christiansen, 1996, p.436).</td>
<td>• Time Use Diaries: Calculations of time use change in categories of self-care, productivity, leisure and rest. <strong>See section 3.5.1</strong></td>
</tr>
<tr>
<td><strong>Occupational Engagement</strong></td>
<td>“The extent to which a person has a balanced rhythm of activity and rest, a variety and range of meaningful occupations and routines, and the ability to move around in society and interact socially” (Bejerholm &amp; Eklund, 2007, p. 21).</td>
<td>• Profiles of Occupational Engagement in people with Schizophrenia (POES, 2006). <strong>See section 3.5.2</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engagement in Meaningful Activities Survey (EMAS, 2002). <strong>See section 3.5.3</strong></td>
</tr>
<tr>
<td><strong>Clinical Utility</strong></td>
<td>“Judgments regarding appropriateness, accessibility, practicability and acceptability of practices” (Smart, 2006, p.380).</td>
<td>• Feedback Questionnaire for Therapists. <strong>See section 3.5.4</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feedback Questionnaire for Treatment Participants. <strong>See section 3.5.4</strong></td>
</tr>
</tbody>
</table>
3.5 Brief Description of the Assessments

3.5.1 Time Use Diaries

The time use collection format for each 24 hour day included 4 columns with the following questions (see Appendix D):

1. What did you do? (Everything for each day in 1 hour intervals)
2. Was there anyone else around at the time?
3. Where were you at the time?
4. How did you experience the activity?

This format of time use data collection allows the data to be used in the evaluation of occupational balance, as well as the POES (see 3.5.2), minimizing the amount of information collected directly from the study participants.

For the calculation of the division of time use, performed by the PI and used in the assessment of occupational balance, time use was categorized into self-care, productivity, leisure and rest, as per Statistics Canada’s 1998 categories (see Appendix I). Two modifications were made to the Statistics Canada categories in order to better describe the time use of people with serious mental illness. First, a “day program” category was added to the productivity section, in order to record productive activities engaged in by this population that differ from the general population. Second, relaxing, thinking, resting and smoking (code 470) was moved from self-care to passive leisure. As previously established, excessive amounts of this type of passive activity does not promote health for people with serious mental illness, thus this activity category was more appropriate for the passive leisure category.

The two days of time use data for both pre and post-test was combined to create two 48 hour time periods. Kalton (1985) and Michelson (2005) have shown that time use data provides a more accurate and reliable representation of real life when data from 2 days are combined. The
two days require a moderate correlation ($r \geq 0.4$) of activities in order to be considered similar enough to be combined (Kalton, 1985). This is necessary since people rarely allocate their time identically each day, thus a 48 hour time period offers a more reliable representation of typical weekday time use. Weekends were not used as they often feature more recreation and less productivity for the general population and do not accurately represent the structure of a person’s entire week.

### 3.5.2 Profiles of Occupational Engagement for People with Schizophrenia

The Profiles of Occupational Engagement for people with Schizophrenia (POES, Bejerholm et al., 2006, Appendix E) is an objective time use measure designed to assess the level of engagement in occupations and participation in life situations for people with schizophrenia. People with serious mental illness were the study target, with a main inclusion criteria of psychosis; therefore a tool designed for people with schizophrenia is appropriate for use with this group. The POES uses data collected from the Time Use Diaries (Appendix D). The categories are: daily rhythm of activity and rest, variety and range of occupations, place, social environment, social interplay, client interpretation, extent of meaningful occupations, routines and initiating performance. The 9-category instrument ranks each category on a scale from 1 to 4, with 1=low and 4=high. The maximum score is 36, and a score close to that number would represent an individual with a variety of occupations, environments, social interactions, and demonstrable meaning in life.

It is a new tool with initially positive data on inter-rater reliability (kappa 0.5-0.82), internal consistency (0.95-0.97) and content validity (Bejerholm, et al., 2006; Bejerholm & Eklund, 2006a). The POES ratings were completed by the Graduate Supervisor, who was blind
to treatment condition and time of testing. As this is the first tool of its kind, newly developed in 2006, group norms are not yet available.

3.5.3 Engagement in Meaningful Activities Survey

The Engagement in Meaningful Activities Survey (EMAS, Goldberg et al., 2002, Appendix F) is a participant survey that was developed specifically for people with serious mental illness, to measure the extent of engagement in meaningful activities. It uses a self-rating 5-point Likert scale with 12 questions ranked from 1=never to 5=always. The total possible score is 60 points, with a score close to 60 representing a high amount of meaning in one’s daily activities. The items measuring the extent of meaningful activity involvement were derived from an analysis of occupational therapy and other human occupation literature. The questions are concrete and designed for use with participants with lower reading abilities. Testing of this measure on a population of participants with serious mental illness revealed good face and construct validity and test-retest reliability at 0.69 (Goldberg & et al., 2002).

3.5.4 Clinical Utility Questionnaires

Participant Feedback Questionnaire (Appendix G): All participants in the treatment group were asked to complete an anonymous, open-ended feedback questionnaire at post-test, designed to improve the intervention in future trials. Feedback was organized into areas of logistics, learning and personal changes. Questions included information on what was most/least helpful about the treatment process, changes that the participants would like to see and the overall usefulness of the treatment for the participants.

Therapist Feedback Questionnaire (Appendix H): All OTs were asked for feedback in the areas of logistics and learning. Questions included the ease of the treatment process, adaptations they would make, and their views on its usefulness as a treatment tool.
3.6 Statistical Analysis of Data

Power calculations for this study were performed in order to estimate the number of participants needed for the study to be able to detect a large effect. Using Cohen’s power analysis tables (Cohen, 1977), at the 0.05 level of significance, 26 participants in each group would be needed. Unfortunately, due to the nature of a small scale pilot-test, an average of 9 participants per group completed the study. Thus, this study had very low statistical power to detect differences between the control and treatment groups, meaning that differences that do exist may not be detected by statistical analyses.

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 16.0. All data were screened for normality and input errors prior to statistical analysis. Due to small samples sizes, and non-normal distributions of the sample, non-parametric statistics were used for all analyses. Only participants that completed both pre- and post-test data collection were included in the analyses. As the participants differed both by treatment group (control n=8 or treatment n=10) and ACT team (Kingston n=2, Belleville n=1, Ottawa n=2), comparisons were made for both types of independence. The significance level for the analysis was set at $p \leq 0.05$ for 2-tailed tests. Results can also be assessed for clinical significance, defined as a 5% change in assessment scores in the context of serious mental illness (Kirsh, Krupa, Horgan, Kelly & Carr, 2005).

Intention-to-treat analysis, a method of data analysis used in randomized controlled trials to maintain similarity of treatment groups when participants drop out of treatment (Hollis & Campbell, 1999), was not used because there was a lack of clarity in what “dropping out” of the study meant. The consent form did not explain that the participant’s data may be used even if they dropped out of the study. As people with serious mental illness sometimes struggle with issues of paranoia, the research team concluded that it may be unethical to run intention-to-treat analysis
using pre-test data if a participant had wished to totally discontinue their participation in the study when they dropped out. In future studies, a section of the consent form should detail participant choices when dropping out of the study, such as removing themselves and all data entirely, or discontinuing participation but allowing data collected up to that point to be used in analysis.

The first goal of the analysis was to ensure that the treatment groups and ACT teams did not differ demographically. Descriptive statistics were first calculated; for interval variables this was the means, standard deviations and ranges, and for categorical variables this was frequencies and proportions. Assessment of differences between groups was achieved with the use of Fisher’s Exact test to compare the differences between categorical variables (diagnosis, housing, living situation, marital status, number of children, pets, work and income status). All interval variables (age, years since diagnosis, years served by ACT and years of education) were compared using the Mann-Whitney test for differences between treatment groups and the Kruskal-Wallis test for differences between ACT teams.

The second goal of the analyses was to assess the baseline scores and differences at post-test for all outcome measures. Both measures of occupational engagement, the EMAS and the POES, were compared by treatment group and ACT team using the Mann-Whitney test for differences between treatment groups and the Kruskal-Wallis test for differences between ACT teams.

In order to analyze occupational balance, the reliability of the time use data was first computed. Kalton (1985) states that data from more than one 24-hour period can be combined if \( r \geq 0.40 \). As the pre- and post-test data both contained a 48 hour time diary for all participants, reliability of combining the 2 days was analyzed. Guttman split-half correlation co-efficients were calculated to ascertain the level of correlation of time spent across several categories of time.
use. The categories were based both on occupational therapy theory (CAOT, 2002) and Statistics Canada data (Statistics Canada, 1998) and were sleep (including naps), self-care, productivity (sub-divided into work/education/volunteering and home maintenance/errands) and leisure (divided into passive, active and social).

Once the reliability of the data was verified, occupational balance was analyzed using Mann-Whitney tests for differences between treatment groups and Kruskal-Wallis tests for differences between ACT teams for both baseline and the change at post-test. Time use was divided using the categories mentioned above.

After all the outcome measures had been statistically analyzed, the impact of demographic characteristics on the outcome measures was assessed using scatter plots, correlation and r-squared regression co-efficients (not shown), to ensure that differences in demographics did not influence the baseline scores and changes at post-test.

The third goal of data analysis was to report on the clinical utility of the intervention. Feedback was gathered from both the OTs and treatment subjects with the use of questionnaires (see Appendices D & E). It was summarized in categories of logistics, learning, personal changes, and other comments; these were the categories used in the questionnaire.

3.6.1 Statistical Assumptions

Although the sample has been recruited from a relatively homogenous population, due to its small size (control group n=8 and treatment group n=10), it is natural that the sample will not have a normal distribution or normal variances, making it necessary to use non-parametric statistics. The control and treatment groups are assumed to be independent of each other as they differed in treatment condition. The samples also differed by ACT team, and this independence was taken into account. Consequently, it was appropriate for these samples to be compared using
non-parametric statistics for independent samples. Assumptions of non-parametric tests, such as the Kruskal-Wallis test or the Mann-Whitney test, are that the probability distribution for each group is similarly shaped, except for differences in medians, that the samples are independent and that the data are at least ordinal.

3.7 Consideration of Confounding Variables

Confounding variables are alternative explanations for findings that are not related to the treatment applied in a study (Jolley, 2004). There are several possible confounders in this study, one being the effect of different therapists. Five separate ACT teams participated in the study, each with a unique OT. Although the therapists were trained the same way and followed the same protocol, characteristics such as rapport with clients, time spent on each activity and personal approach to treatment could not be controlled. The use of control and treatment participants for each therapist somewhat mitigates the chance that different therapists will influence the study results. However, the results for each ACT team were analyzed separately to test this confounding variable.

Another potential confounder is the geographic setting of the study. All ACT teams were from urban settings; however, Belleville, Kingston and Ottawa represent small, medium and large urban settings. Although this may strengthen the generalizability of the results, it is important to take the urban setting for each participant into account.

A final confounding variable is the difference in the time line of the intervention for each treatment participant. The 16 week trial took place between September 2007 and May 2008, with different teams beginning and ending at diverse times over the 9 month period. Again, the use of control and treatment participants from each team diminished the effect of seasons and holidays on the outcomes.
3.8 Ethical Considerations

Ethical approval for this study was initially received from the Queen’s University Research Ethics Board (see Appendix L), after which the ACT teams were recruited to the study. Due to the multi-site nature of the study, this process included receiving ethical approval from Providence Care Kingston, Quinte Health Care, and the Royal Ottawa Hospital (see Appendices L-O for letters). Informed consent was received from all study participants (see Appendix K for the consent form) and confidentiality was maintained by the research team at all times. An honorarium of $10 was paid to the study participants at both pre-test and post-test to acknowledge their time and efforts; this honorarium was approved by all Ethics Boards.
Chapter 4

Results

4.1 Participants

Twenty-four participants who met the inclusion criteria gave signed consent and completed the pre-test portion of the study. Six participants dropped out of the study before the post-test sessions. Two of these were control participants and four were treatment participants. Therapist feedback revealed that the clients who dropped out of both groups had issues maintaining their scheduled appointments, such as lack of motivation and difficulties organizing their time. Two clients who dropped out of the treatment group experienced a decline in their overall level of function during the study time frame, while 1 client in the control group had to drop out due to a hospitalization for acute mental health issues.

Eighteen of the participants completed the entire study, giving a drop out rate of 25%. Of these 18 participants, 8 were control participants and 10 were treatment participants. The participants were recruited by 5 different ACT teams from 3 cities (see Figure 1). From Kingston, the Psychosocial Rehabilitation (PSR) ACT team had 2 participants finish the study and the Frontenac Mental Health Services (MHS) ACT team had 3 participants finish. From Belleville, the Prince Edward (PE) Counties ACT team had 6 participants finish. From Ottawa, 4 participants finished from the Catherine St. ACT team and 3 finished from the ACT Step-Down team. There were two significant demographic differences between treatment groups: a difference in ages (p=0.016) and length of time since diagnosis (p=0.026). The treatment group was significantly older and had a longer time since diagnosis when compared to the control group. The participants did not show any significant differences demographically when
compared by ACT team and thus those results are not reported. Demographic characteristics for treatment and control groups are displayed in Tables 3 & 4.

Gender was not recorded for this study; due to the small numbers of participants per team, there was potential for the unique identifier used for each participant to be linked to the participant’s name if gender was known, violating confidentiality. The general characteristics of the 18 participants are as follows: age ranged from 21 to 60 years (39.17 ± 10.61), 14 were diagnosed with schizophrenia and 4 with schizoaffective disorder, the time since diagnosis ranged from 3 to 34 years (16.56 ± 9.32), and the length of time served by an ACT team ranged from 1 to 17 years (4.75 ± 4.00). All participants lived in rental accommodations, with 10 participants in apartments, 3 in houses and 5 in group homes. Ten participants lived alone, 6 with roommates and 2 with family members. Of the 18 participants, 14 were single and never married, 1 was separated, 2 were divorced and 1 was currently married. 3 participants had children that they did not reside with, 15 had never had children and 2 of the 18 participants had pets they cared for on a daily basis. All participants were supported by the Ontario Disability Supports Program (ODSP) and none were currently working.

Table 3: Characteristics of Study Participants by Treatment Condition-I

<table>
<thead>
<tr>
<th></th>
<th>Control (n=8)</th>
<th>Treatment (n=10)</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Range</td>
<td>SD</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>32.38</td>
<td>27</td>
<td>9.40</td>
</tr>
<tr>
<td>Years since diagnosis</td>
<td>10.75</td>
<td>20</td>
<td>7.59</td>
</tr>
<tr>
<td>Years served by ACT</td>
<td>2.94</td>
<td>6</td>
<td>1.90</td>
</tr>
<tr>
<td>Years of education</td>
<td>12.38</td>
<td>5</td>
<td>1.60</td>
</tr>
</tbody>
</table>

* results statistically significant at p ≤ 0.05
Table 4: Characteristics of Study Participants by Treatment Condition-II

<table>
<thead>
<tr>
<th></th>
<th>Control (n=8)</th>
<th></th>
<th>Treatment (n=10)</th>
<th></th>
<th>Fisher’s Exact Test</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>p-value</td>
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<td>PSR</td>
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<td>1</td>
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<td>Frontenac</td>
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<td>12.5</td>
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<td>Catherine St.</td>
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<tr>
<td>Step-Down</td>
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<td><strong>Diagnosis</strong></td>
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<td>Schizoaffective</td>
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<td>Schizophrenia</td>
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<td><strong>Housing (rental)</strong></td>
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<tr>
<td>Apartment</td>
<td>5</td>
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<td><strong>Living Situation</strong></td>
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<tr>
<td>Alone</td>
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<td>62.5</td>
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<tr>
<td>With family</td>
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<td>0.0</td>
<td>2</td>
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<td>87.5</td>
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<td>1</td>
<td>12.5</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>10.0</td>
<td>0.48</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, but live apart</td>
<td>1</td>
<td>12.5</td>
<td>2</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>7</td>
<td>87.5</td>
<td>8</td>
<td>80.0</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Pets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>12.5</td>
<td>1</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>87.5</td>
<td>9</td>
<td>90.0</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Employed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>100.0</td>
<td>10</td>
<td>100.0</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Income Source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ODSP</td>
<td>8</td>
<td>100.0</td>
<td>10</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>n/a</td>
</tr>
</tbody>
</table>

4.2 Analysis of Occupational Balance

When analyzing occupational balance, the null hypothesis for statistical testing is that the population means are identical in time use across both treatment groups (control or treatment) and
ACT teams (PSR, Frontenac, Belleville, Catherine St. and Step-Down). Occupational balance was assessed by comparison of time use, using Statistics Canada (1998) time coding (see Appendix I).

First, Guttman split-half correlation co-efficients were calculated to ascertain the level of correlation of time spent across several categories of time use. Once the level of reliability was verified, occupational balance was analyzed using Mann-Whitney tests for differences between treatment groups and Kruskal-Wallis tests for differences between ACT teams for both baseline and the change at post-test. Time use was divided using the categories mentioned above.

The Guttman split-half correlation co-efficients revealed that at both pre- and post-test, time use was moderately to very highly correlated between the 2 days collected (Table 5). Correlations ranged from 0.40 and 0.97, satisfying Kalton’s (1985) guideline of r=0.40 for combining time use data.

**Table 5: Correlation of 2 Day’s Time Use**

<table>
<thead>
<tr>
<th></th>
<th>Control (n=8)</th>
<th>Treatment (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Guttman Split-Half Correlation</td>
<td>Guttman Split-Half Correlation</td>
</tr>
<tr>
<td><strong>Pre-Test</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep</td>
<td>0.95 (Very High)</td>
<td>0.53 (Moderate)</td>
</tr>
<tr>
<td>Self-Care</td>
<td>0.65 (High)</td>
<td>0.97 (Very High)</td>
</tr>
<tr>
<td>Productivity</td>
<td>0.84 (Very High)</td>
<td>0.61 (High)</td>
</tr>
<tr>
<td>Leisure</td>
<td>0.87 (Very High)</td>
<td>0.42 (Moderate)</td>
</tr>
<tr>
<td><strong>Post-Test</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep</td>
<td>0.62 (High)</td>
<td>0.74 (High)</td>
</tr>
<tr>
<td>Self-Care</td>
<td>0.42 (Moderate)</td>
<td>0.77 (High)</td>
</tr>
<tr>
<td>Productivity</td>
<td>0.54 (Moderate)</td>
<td>0.58 (Moderate)</td>
</tr>
<tr>
<td>Leisure</td>
<td>0.70 (High)</td>
<td>0.40 (Moderate)</td>
</tr>
</tbody>
</table>

Correlation strengths from Hough (2004).
Once it was confirmed that the 2 day’s time use from both pre-test and post-test could be combined, descriptive statistics were calculated for time use. Mean time use was calculated by averaging the 2 days for each test period into one 24-hour period. The overall mean time for all participants at baseline was spent as follows: 10.82 (±1.97) hours in sleep, 2.14 (±1.95) hours in self-care, 2.15 (±1.11) hours in productivity and 8.88 (±1.61) hours in leisure. The Mann-Whitney test was used to compare differences at pre-test and change at post-test between treatment conditions. These two calculations are reported in Tables 6 & 7. The Kruskal-Wallis test was used to make comparisons between the different ACT teams, but no significant differences were found and these results are not reported. However, a significant difference (p=0.05) was found between treatment conditions for change in sleep (Table 6). The control group increased time spent in sleep by 22 minutes per day at post-test, while the treatment group decreased their time spent in sleep by 47 minutes per day. Therefore, while the control group actually increased their time spent in sleep at the end of the study, the treatment group spent an average of three-quarters of an hour more each day engaged in activity. Thus we can reject the null hypothesis that time use is equal across treatment conditions and conclude that the treatment and control groups differ in their time use at post-test.

In the demographic analyses, the treatment group was found to have a significantly higher age (p=0.016) and longer length of illness (p=0.026) when compared to the control group. As age and length of illness are very highly positively correlated (r=0.87), just the effect of age on outcome measures was analyzed to avoid redundancy in calculations. In order to investigate the effect of age on time use, scatter-plots were drawn and Spearman’s Rho correlations were calculated (not shown). Correlations were calculated between age and the 9 separate categories of time use at both pre-test and post-test. Correlations ranged from the weakest (passive leisure at pre-test, r=0.00) to the strongest (social leisure at pre-test, r= -0.34). None of the 18 correlations
were found to be strong or statistically significant, therefore a difference in age between the control and treatment groups did not significantly impact the time use of the participants.

Table 6: Time Use for Major Categories by Treatment Condition

<table>
<thead>
<tr>
<th>Category</th>
<th>Control (n=8)</th>
<th>Treatment (n=10)</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Hours</td>
<td>SD</td>
<td>Mean Hours</td>
</tr>
<tr>
<td>Sleep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>10.76</td>
<td>2.40</td>
<td>10.88</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>0.37</td>
<td>1.21</td>
<td>-0.78</td>
</tr>
<tr>
<td>Self-Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>1.81</td>
<td>0.93</td>
<td>2.40</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.53</td>
<td>0.85</td>
<td>-0.63</td>
</tr>
<tr>
<td>Productivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>2.15</td>
<td>1.22</td>
<td>2.15</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.32</td>
<td>1.51</td>
<td>0.092</td>
</tr>
<tr>
<td>Leisure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>9.30</td>
<td>1.70</td>
<td>8.56</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>0.48</td>
<td>2.04</td>
<td>1.32</td>
</tr>
</tbody>
</table>

* results statistically significant at p ≤ 0.05
<table>
<thead>
<tr>
<th>Productivity</th>
<th>Pre-test</th>
<th>Change at Post-test</th>
<th>Test Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work/Education/ Volunteering</strong> Pre-test</td>
<td>1.02</td>
<td>0.28</td>
<td>1.57</td>
<td>0.12</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.30</td>
<td>0.19</td>
<td>0.045</td>
<td>0.96</td>
</tr>
<tr>
<td><strong>Home Maintenance/ Errands</strong> Pre-test</td>
<td>1.14</td>
<td>1.88</td>
<td>1.38</td>
<td>0.17</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.026</td>
<td>-0.10</td>
<td>0.67</td>
<td>0.51</td>
</tr>
<tr>
<td><strong>Passive</strong> Pre-test</td>
<td>5.48</td>
<td>6.70</td>
<td>1.16</td>
<td>0.25</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.22</td>
<td>1.10</td>
<td>1.16</td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Active</strong> Pre-test</td>
<td>1.81</td>
<td>0.81</td>
<td>1.48</td>
<td>0.14</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>-0.35</td>
<td>0.017</td>
<td>1.52</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Social</strong> Pre-test</td>
<td>1.00</td>
<td>1.05</td>
<td>1.29</td>
<td>0.20</td>
</tr>
<tr>
<td>Change at Post-test</td>
<td>1.06</td>
<td>1.03</td>
<td>1.60</td>
<td>0.11</td>
</tr>
</tbody>
</table>
4.3 Analysis of Occupational Engagement

When analyzing occupational engagement, the null hypothesis for statistical testing is that the population means are identical for the measures, across both treatment groups (control or treatment) and ACT teams (PSR, Frontenac, Belleville, Catherine St. and Step-Down). Two measures were used to assess occupational engagement, the Engagement in Meaningful Activities Survey (EMAS) and the Profiles of Occupational Engagement for people with Schizophrenia (POES). Both assessments result in a numerical score and were assessed for similarity at baseline and change at post-test. The EMAS gives a total score, while the POES gives scores for 9 categories as well as a total score. Investigations between control and treatment groups were performed using the Mann-Whitney test. The Kruskal-Wallis test was used to assess differences between ACT teams, no differences were found and these results are not reported.

No significant differences were found at baseline or in the amount of change at post-test on any of the occupational engagement measures for both treatment teams and ACT teams (Table 8). It is important to note that due to therapist error, 6 EMAS had to be excluded from analysis, giving the comparison of the EMAS an overall n=6. None of the 9 categories of the POES showed any significant differences and are not reported. Thus, the null hypothesis cannot be rejected, as a difference has not been shown between the treatment groups or the ACT teams in scores of occupational engagement.

Clinical significance was assessed using the 5% change in score guideline (Kirsh et al., 2005). While changes over 5% were found, these changes were similar in both treatment and control groups, and thus do not clearly indicate a clinically significant change in occupational engagement scores.
To analyze the effect of age on scores of occupational engagement, scatter plots were drawn and Spearman’s Rho correlations calculated (not shown). Age was found to have a weak positive correlation to the POES pre-test score ($r=0.27$), no correlation to change in POES score at post-test ($r=-0.00$), a moderate positive correlation to the EMAS pre-test score ($r=0.34$), and a weak positive correlation to change in EMAS score at post-test ($r=0.17$). None of these correlations were found to be statistically significant, therefore a difference in age between the control and treatment groups did not significantly impact the scores in occupational engagement.

### Table 8: Occupational Engagement Scores by Treatment Condition

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>% change</th>
<th>Mean</th>
<th>SD</th>
<th>% change</th>
<th>Test Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control (n=6)</td>
<td>Treatment (n=6)</td>
<td></td>
<td>Z</td>
<td>p-value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EMAS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-test</strong></td>
<td>39.20</td>
<td>9.23</td>
<td>3.20</td>
<td>41.71</td>
<td>12.74</td>
<td>3.64</td>
<td>0.65</td>
<td>0.52</td>
</tr>
<tr>
<td><strong>Change at Post-Test</strong></td>
<td>9.23</td>
<td>7.73</td>
<td>8.16</td>
<td>7.73</td>
<td>10.52</td>
<td>8.73</td>
<td>0.41</td>
<td>0.68</td>
</tr>
<tr>
<td><strong>POES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-test</strong></td>
<td>19.50</td>
<td>3.57</td>
<td>-1.88</td>
<td>18.05</td>
<td>2.93</td>
<td>-1.45</td>
<td>1.08</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Change at Post-Test</strong></td>
<td>4.95</td>
<td>4.95</td>
<td>-9.62</td>
<td>4.48</td>
<td>4.48</td>
<td>-8.03</td>
<td>0.31</td>
<td>0.76</td>
</tr>
</tbody>
</table>

The scoring of both measures is such that an increase in score indicates improvement.
4.4 Clinical Utility

4.4.1 Treatment Subject Feedback

All treatment subjects that finished the study (n=10) chose to participate in the voluntary feedback questionnaire in written format. Feedback was generally positive and did not include many specifics for improvements to the intervention. The first section asked questions regarding the logistics of the treatment process. All respondents felt that the 12 weeks of the intervention followed an appropriate timeline, with one participant stating that “it was a reasonable time period considering all it covered.” None suggested changes to the timeline or organization of the intervention. Every respondent found the content of the intervention helpful, with several (n=4) commenting on the positive experience of reflecting on activity patterns and monitoring their own progress. One participant stated that the intervention helped him realize how much of their day was spent smoking, something they had not previously reflected on.

The second section focused on the participant’s learning. Several (n=3) commented on the link that they had discovered between health and hygiene, and had increased activities such as bathing and oral hygiene. Others (n=4) were struck by the need for structure in their time use, writing “I am happier being productive and useful” and “I learned to exercise in my spare time; it made me think about how I spend my time.” Two participants were pleased to have learned about the importance of pleasurable activities, such as reading, and were incorporating these activities into their daily lives more often. Few specific changes to the intervention were suggested, but one participant stated that he would like to see the education section include more information about cognitive rehabilitation for the symptoms of schizophrenia, such as problems with memory and concentration. Another commented that he would like to learn more about vocational preparation. No concrete changes were suggested to make the intervention easier to understand and use in their daily lives.
Personal changes were the subject of the third section, which asked questions about changes to the daily lives of the participants. Most (n=8) participants felt that participating in the treatment has changed their routine; some feeling more productive, trying new activities, sleeping less and reflecting on their daily structure more often. Half the participants felt that they were more confident in participating in activities after the treatment, feeling satisfied with choices of new activities, less passive time use, improved social and family relationships and time to reflect on activity choices. One participant stated that “I feel better, I feel satisfied that I’m not sitting on the sofa all day watching t.v.” Regarding changes to the ability to socialize, half felt more confident and aware of the benefits of social interaction. Three people felt this ability had stayed the same, but two of them acknowledged that they were satisfied with their social life before the treatment began. Another stated that he had decreased his contact with people involved in a past occupation of substance use, and felt that this change was positive. Half the participants stated that a family member or friend had noticed a change in their time use or attitude since beginning the treatment, one writing that his “roommates have noticed a difference and even help with house work now.”

All 10 of the respondents stated that they would recommend this treatment to other people who have mental illness. One stated that the intervention “gives people a way of measuring progress and shows where important changes need to be made to improve one’s quality of life.” Another stated that the intervention “helps you get more structure in your day” while one felt it would be an opportunity to “know and learn about themselves.” Other comments about the treatment included that “the treatment helped me realize my human potential” and that “a kick in the butt was needed! And self-implemented, thanks.”
4.4.2 Therapist Feedback

All 5 of the OTs involved in delivering the study’s treatment responded to the voluntary written questionnaire regarding the treatment process. The first section referred to the logistics of the treatment process, with the first question asking their satisfaction with the 12 week treatment timeline. All 5 respondents felt that the timeline needed more tailoring to their clients, with 12 weeks working for some, but not all participants. Two of the therapists felt that the action and evaluation section could have used more time to work on the goals and removal of barriers to their attainment. However, none of them desired to change the structure and organization of the intervention, and 2 commented on the benefits of the flexibility of the intervention. Also, all of the therapists found the content of the intervention relevant, mentioning the education section as extremely helpful, while the worksheets in the reflection section felt somewhat redundant and might be more tailored to individual client needs.

The second section focused on the learning experienced by the participants during the “Action over Inertia” treatment phase. The therapists found active and visually oriented worksheets easy for participants to grasp, along with the education section and “SMART” goals. Clear and concrete questions in the intervention manual worksheets were cited as most helpful to the participants. Intervention content that the participants struggled to grasp involved a worksheet in the intervention manual with ratings of both “importance” and satisfaction” with current activities. All of the therapists found that the participants struggled with this particular worksheet, finding the ratings too abstract. Suggestions for improvement included using a 5 point Likert scale, rather than the 10 point that was used, or only asking one question, instead of questions about both satisfaction and importance. Other issues included the completion of time use logs for the study and a worksheet within the intervention manual that required participants to graph their time use. Therapists found that the participants needed support in completing the time
use logs in detail, and that most were unable to use the graph worksheet without therapist assistance. Other suggestions for improvement included the use of more concrete language in worksheets, and provision of more examples. Two therapists suggested additions to the content of the intervention, such as “more information on medications and coping strategies” and “talking about negative symptoms in relation to making changes.”

All 5 therapists stated that they would use the “Action over Inertia” intervention with other ACT clients who struggle with occupational imbalance and disengagement. One suggested that she might tailor the order of sections to client needs, and another would like to run the intervention in a group format. The therapists stated that the intervention had “good structure” and that “overall the clients thought it was a worthwhile intervention.” One therapist commented that “Action over Inertia” could be “used as a tool for people without symptoms of psychosis as well.”

4.4.3 Assessment of Harm

The participant and therapist feedback forms did not ask specific questions regarding harm (i.e. discomforts or inconveniences), as no known harms were associated with participation in the study. No participants or therapists gave feedback that described negative experiences during the study. All participants continued to be monitored by their psychiatrist and ACT case manager during the study, and no concerns about the study were raised. Also, no participants were removed from the study by their ACT team or the research team due to mental health issues.
Chapter 5
Discussion

5.1 Discussion of Findings

5.1.1 Specific Client Characteristics

The demographic comparison of the control and treatment groups revealed a relatively homogenous sample of ACT service recipients. Data regarding the population characteristics of all 5 ACT teams was not available, thus it cannot be assumed that this sample is representative of the entire population. However, these demographics are similar to other studies performed with ACT service recipients from southeastern Ontario (Barbic, 2007; Eastabrook et al., 2003; McLean, 1999) and North America (Ben-Porath et al, 2004; Kane & Blank, 2004).

One might assume that characteristics of participants would differ due the inclusion of 3 separate cities, but investigations using Fisher’s Exact test and the Kruskal-Wallis test showed no significant differences between ACT teams, further supporting that our sample was a good representation of overall ACT service users. Randomization of participants was completed by the Primary Investigator (PI) while blind to all participant characteristics, thus differences between the control and treatment groups were due to chance. These differences were age (p=0.016) and length of time since diagnosis (p=0.026), two variables that are very highly correlated with each other (r=0.87). These results showed that the control group was significantly younger and had a shorter duration of illness when compared to the treatment group. Scatter-plots were drawn and Spearman’s Rho correlations calculated to analyze the effect of these two variables on the outcome measures, revealing weak correlations with no overall effect on statistically significant differences. The difference in the control and treatment groups can be partially explained by a
treatment participant aged 60 years, 10 years older than the next closest participant, who skewed the mean age of the treatment group. However, when data was analyzed without the inclusion of the 60 year old outlier, the significant differences remained (difference in age, p=0.027; difference in length of illness, p=0.046). The removal of this participant from the analysis of the outcome measures (time use, EMAS and POES) produced no changes in significance and these results are not reported. There is a possibility that this difference in duration of illness, with a lengthier exposure to stigma and marginalization for treatment participants, could have made it more difficult for the treatment group to achieve behavioural changes related to occupations.

The groups also differed in diagnoses, although Fisher’s Exact test did not reveal the difference to be statistically significant (p=0.092). The control group was solely diagnosed with schizophrenia (n=8), while the treatment group consisted of 6 people with schizophrenia and 4 with schizoaffective disorder. While some research reports that people with schizoaffective disorder perform at a higher functional level than people with schizophrenia (Kaplan & Sadock, 1996a; Grossman, Harrow, Goldberg & Fichtner, 1991), more recent research shows that symptom severity is a better predictor of community function than diagnosis (Rymaszewska et al., 2007; Pini et al., 2003). All subjects in this study met the criteria for ACT services and the study criteria for significant disengagement from community life, and had characteristics consistent with this (no participants were employed, all were supported by ODSP, all but 1 were single or divorced/separated, only 3 had children and none were caring for them, only 2 owned pets, most lived alone and all rented their living accommodations). Thus, diagnosis is probably a less accurate predictor of community function in this sample.
5.1.2 Differences in Occupational Balance Between the Groups

The first objective of this study was to assess whether the intervention could be used to improve occupational balance. The change in occupational balance was measured by time use diaries, broken down into categories of sleep, self-care, productivity and leisure, using Statistics Canada (1998) time codes (Appendix I).

When control and treatment groups were compared at baseline, their time use was relatively similar, yet different from the general Canadian population. In 1998, Canadians aged 15 and older spent an average of 8.1 hours sleeping, 2.3 hours in self-care, 7.8 hours in productivity and 5.8 hours in leisure (Statistics Canada, 1998). At baseline, the average day for the study group was spent as follows: 10.82 (±1.97) hours in sleep, 2.14 (±1.95) hours in self-care, 2.15 (±1.11) hours in productivity and 8.88 (±1.61) hours in leisure. Although the study group cannot be compared statistically to the Canadian population, as we do not have access to the raw data from Statistics Canada, it is evident that there is a pronounced difference in the way time is spent by the participants in this study, versus the overall Canadian population. For study purposes, two Statistics Canada (1998) time codes were modified: a code reflecting passive time use, such as smoking and relaxing, was moved from self-care to passive leisure, and day program activities were added to the productivity section. Comparisons between these categories for the study population should be made with caution in regard to the Canadian population. However, even when these modifications are considered, the study population appears to spend more time in sleep and overall leisure, and less in productivity. This pattern of time use is consistent with observations from other studies of the time use of people with serious mental illness (Leufstadius et al., 2006; Minato et al., 2004; Krupa et al., 2003; & Shimitras et al., 2003), and corroborates the demographic evidence that this study did indeed recruit people who experience occupational imbalance and disengagement.
The comparison of changes in time use between the control and treatment groups at post-test revealed that most categories of time use were not significantly different. Self-care, productivity and leisure did not show any significant differences, nor did the sub-categories of productivity or leisure. However, a significant difference was found between treatment conditions for changes in sleep (p=0.05). While the control group increased time spent in sleep by 22 minutes at post-test, the treatment group decreased their time spent in sleep by 47 minutes. Therefore, while the control group actually increased their time spent in sleep, the treatment group spent three-quarters of an hour more engaged in activity. Post-hoc power calculations revealed the statistical power to detect a difference in sleep between the groups was 57%. The effect size was calculated at 0.86; this is considered a large effect, meaning that we can be confident that at post-test there was a large difference in time spent in sleep between the groups (Cohen, 1977).

In light of a large body of research regarding health and sleep duration, a shift away from abnormal amounts of sleep is very positive in and of itself. Increased disease and mortality rates have been linked to people who sleep more than 9 hours per night, even when demographic and other health factors are considered (Gangwisch et al., 2007; Patel, Malhotra, Gotlieb, White & Hu, 2006; Wingard & Berkman, 1983). This shift in occupational balance, away from excess sleep toward increased activity, is an encouraging finding. Considering that several of the occupational therapists (OTs) involved in this study suggested that more time may have been needed in order for the treatment participants to implement their goals, this trend toward more time spent in activity over sleep is an important change. In terms of clinical significance, the treatment group increased their time spent in overall activity by 3.26%, while the control group decreased by 1.54%. While this difference is shy of the 5% recommended to confirm clinical
significance (Kirsh et al., 2005), it does further support the trend toward increased occupational balance in the treatment group.

The Stages of Change model (Prochaska, DiClemente & Norcross, 1992) is useful when considering the length of time needed for behavioural change. Originally created in the context of addictions, it has more recently been applied to health behaviours such as weight loss and smoking cessation, as well as to people with mental illness and the general population. The stages of change are precontemplation, contemplation, preparation, action and maintenance. It is estimated that any one point of time, only 20% of the population is ready to consider and implement a lifestyle change (Rollnick, Mason & Butler, 1999). While the stages of precontemplation and contemplation typically exhibit no changes in behaviour, the preparation stage is the place that small changes become evident, before obvious behaviour change is evident in the action phase. It is possible that participants in the treatment group had reached the stages of preparation by the end of the 12-week intervention, thus a trend toward more time spent in activity in general was found. Had the study continued beyond 3 months, perhaps participants could have moved further along the continuum to the action stage, making shifts in occupational balance that could be detected in increased time in productive and active pursuits. These results show the need for a larger scale trial of “Action over Inertia,” potentially with a longer treatment period and more follow up time.

5.1.3 Differences in Occupational Engagement Between the Groups

The second objective of this study was to assess whether the intervention could be used to improve occupational engagement. The change in occupational engagement was measured by an objective measure, the Profiles of Occupational Engagement in people with Schizophrenia (POES) and a subjective measure, the Engagement in Meaningful Activities Survey (EMAS).
Profiles of Occupational Engagement in people with Schizophrenia (POES) Outcomes

When considering the results of the POES, it is first important to compare the sample from the study to the norms of the tool. While the tool is relatively new and does not have formalized norms, a study performed by the tool authors (Bejerholm & Eklund, 2007) to compare POES scores to other health measures revealed ranges of scores that represent general levels of engagement. Out of a possible score of 36 points, scores in the range of 9-18 show low levels of occupational engagement, while scoring between 19 and 27 reveals moderate occupational engagement and between 28 and 36 represents highly engaged individuals. The sample for this study included 72 Swedish out-patients diagnosed with schizophrenia, all with similar demographic characteristics to our study population. Of this sample, 29% were considered to have low occupational engagement, while 40% had moderate levels and 31% had high levels. In comparison, at baseline our study population demonstrated 67% low and 33% moderate engagement levels, with no subjects displaying high occupational engagement. The overall mean score for the study group at baseline was 18.69 (±3.22). At post-test, one treatment subject had moved from moderately engaged to highly engaged. However, overall there were no significant differences (p=0.05) between the treatment conditions for either baseline or change at post-test. Our small sample appears to experience more profound occupational disengagement than the test population studied by Bejerholm & Eklund (2007). This is not surprising, as this study specifically recruited subjects who experienced profound occupational disengagement.

The lack of change in POES scores for the treatment group can be reflected upon in light of the categories measured by the tool, as well as the rating scale. The POES uses 9 categories with a 4 point scale for each one. In any given category (daily rhythm of activity and rest, variety and range of occupations, places, social environment, social interplay, client interpretation, extent of meaningful occupations, routines or initiating performance) a score of 1 reflects severe
disengagement, such as a total lack of meaning or purpose, lack of a routine or planning for self, exhibiting social withdrawal and little access to the community. A score of 2 represents slightly more engagement, such as a few non-demanding social interactions, with some purposeful activity but a chaotic routine with little planning. The move to a score of 3 requires changes such as established routines that exhibit active engagement in life, self-initiation, several meaningful occupations, and time spent in a variety of places with evidence of social participation. A score of 4 represents high engagement and includes movement through social situations and the community without hindrance, consistent engagement in meaningful activity and well-established and self-determined routines.

When examining the baseline scores of all the study participants by POES categories, both the median and mode score for all categories is 2. A post-test, the findings are the same, with the exception of places, which had a median of 1.5 and mode of 1. Clearly, our sample of clients, who scored in the range of low occupational engagement at pre-test and post-test, had difficulty making the large scale lifestyle changes that move an individual from a score of 2 in any given category to a score of 3. It is possible that the POES, a tool with limited research regarding its use, and no research regarding sensitivity to change, is not sensitive enough to detect micro changes in engagement behaviours. As well, this test had an overall n=9, therefore the power to detect change was very small. Post-hoc power analysis for the POES revealed that the power to detect differences between the groups was 7.3%; it is possible that changes that do exist have not have been detected.

As mentioned in the discussion of occupational balance, Prochaska et al.’s (1992) Stages of Change model may explain the lack of large-scale lifestyle change during our 12-week intervention. The treatment group’s shift in time use to increased activity gives evidence to support that they may be in the contemplation stage of change. Just as no specific shifts in time
use were seen in productivity and active pursuits (such as working, volunteering or exercising), no major shifts in occupational engagement were detected by the POES. However, perhaps it is too early to see any overt behaviour changes, as those would occur in the planning and action phases. A longer trial of the intervention would be useful to assess the degree of behaviour change that could be achieved.

**Engagement in Meaningful Activities Survey (EMAS) Outcomes**

The subjective measure of the study, the EMAS, was used to assess participants’ perceptions of their occupational engagement. The EMAS was pilot-tested with 32 out-patients with serious mental illness in a Canadian city (Goldberg et al., 2002). Although this sample included people with mood and personality disorders, they were demographically similar to the participants in our study. The mean EMAS score from Goldberg et al.’s study was 41.63 (±8.25), comparable to the overall baseline score of 40.67 (±11.01) from our study. The control and treatment groups did not differ significantly in scores at either baseline or post-test. The EMAS is a relatively unstudied instrument that has no published data regarding sensitivity or its use as an outcome measure, thus it is difficult to comment on its ability to detect change. This study’s small sample size, compounded by the forced removal of 6 EMAS scores due to therapist error, gave an overall n=6 for the EMAS comparisons. Post-hoc power calculations for the EMAS revealed that the power to detect differences between the groups was 5.9%; therefore there was very low power to reject the null hypothesis.

The use of subjective measures with clients with serious mental illness has recently been the subject of reflection by some researchers, who suggest that subjective measures are often affected by the client’s symptom severity and overall mood (Fakhoury & Priebe, 2002; Fakhoury, Kaiser, Roeder-Wanner & Priebe, 2002). At times, objective measures have detected client
change, while subjective measures collected directly from the clients show no change. It is possible that participant symptom severity and mood impacted their ratings, which would explain why there was significant change in time use, while the EMAS did not detect changes in the participant’s perception of their occupational engagement.

5.1.4 Health Behaviour Change

Research regarding health behaviour change for the general population as well as people with serious mental illness reveals the difficulty that clinicians face in educating people regarding health behaviours, and achieving behaviour change. Several studies of specific health behaviour changes within the Canadian and American population (increased physical activity, healthy eating, smoking cessation) had very low rates of participation and change. A 4-year project in a low-income Montreal, QC neighbourhood had a participation rate of only 2-3%, and was unsuccessful in decreasing cigarette smoking, high dietary fat intake and physical inactivity (O’Loughlin, Paradis, Gray-MacDonald, Renaud, 1999). A Canadian national health campaign to promote walking revealed that only 30% of adults meet the physical activity guidelines for health on a weekly basis. Over a period of 1 year, this well-funded and publicized campaign was only able to raise walking rates by 3.6% (Craig, Tudor-Locke & Bauman, 2007). A study of the use of action plans to help primary care patients achieve healthy behaviours showed that only 40% of the sample was able to make a simple health-related change over a period of 3 weeks, with follow up from the primary practice (Handley et al., 2006). These results show the difficulties that health professionals often have in engaging the general population in health promoting activities.

Health behaviour change for people with serious mental illness has been less thoroughly researched than changes made by the general population. To date, no known randomized controlled trials of exercise interventions exist, and drop-out rates of existing programs have been
reported at 50% or higher (Richardson et al., 2005). A recent program designed to increase physical activity for people with serious mental illness using an 18-week intervention reported an extremely high drop out rate of 69%, with a small weight loss for participants who finished the study (Richardson, Avripas, Neal & Marcus, 2005). An 8-session community based smoking cessation program for people with serious mental illness reported a drop-out rate of 40%, with a quit-rate of 19% (Currie et al., 2008). Several studies regarding HIV prevention education have reported lower drop-out rates (10-20%) and decreases in high risk sexual behaviour with interventions ranging in length from 7-16 sessions (Berkman, Cerwonka, Sohler & Susser, 2006; Otto-Salaj, Kelly, Stevenson, Hoffman & Kalichman, 2001; Weinhardt, Carey, Carey & Verdecias, 1998).

It is evident that although health behaviour change is difficult for the general population and for people with serious mental illness, small gains are achievable, particularly with structured interventions of at least 2 months. Therefore, the small changes in behaviour detected in this pilot study, with its comparatively low drop out rate (25%), are encouraging and warrant further study.

5.1.5 Alternative Measurements

It is possible that the measures chosen for this study were not appropriate to the participant’s stage of change during the study. It may have been more fitting to test the participant’s level of knowledge regarding occupational balance and engagement, rather than behaviour change. The population targeted in this study experiences significant disengagement from activity. It has been shown that the general population has difficulty making behavioural changes in time periods longer than our 12 week pilot-test, therefore people with serious mental illness may experience an even greater challenge in this area. A recent small-scale study regarding the effectiveness of the Recovery Workbook (Barbic, 2007) revealed positive changes
in recovery related knowledge after a 12 week intervention. However, no statistically significant behaviour changes were found, supporting the notion that knowledge acquisition may be a more appropriate measure for a pilot project of 12 weeks.

A measure of readiness for change may be useful in future studies to assess a participant’s stage of change in relation to rehabilitation outcomes. The Change Assessment Questionnaire for People with Severe and Persistent Mental Illness (CAQ-SPMI, Hillburger & Lam, 1999) is a measure based on the Stages of Change model. This measure is tailored for use with people with serious mental illness and has been established as a valid measure of readiness to change. The CAQ-SPMI is a subjective measure that could serve to augment measures such as the EMAS.

In regard to subjectively measuring occupational engagement, a new tool (Eklund, 2004) called the Satisfaction with Daily Occupations (SDO) instrument might further supplement the EMAS in future trials. This interview style questionnaire, covering areas of work and productive activity, leisure, domestic tasks and self-care has promising initial data on validity. The incorporation of another subjective measure could strengthen a future study’s ability to detect differences in occupational engagement.

5.1.6 Clinical Utility of the Intervention

The third objective of this study was to assess whether the intervention showed clinical utility, measured by feedback questionnaires from the therapists and the treatment participants. A general goal of collecting feedback was to review if the participants found the intervention helpful and would recommend it to other clients, and whether the therapists found it useful and would use it in the future.
We were able to engage clients in the treatment, with 10 of 14 subjects finishing the study in the treatment group. All 10 participants that finished the treatment gave feedback, and all felt that the intervention had been useful, were able to recall educational content from the treatment, describe changes that they saw in themselves since participating and stated that they would recommend the treatment to other people with serious mental illness.

All 5 OTs provided feedback, and all felt that the intervention was useful, that it had produced some changes in the clients, and that they would use it with other clients, even clients without psychosis. One OT commented that she would like to trial the intervention in a group format. Verbal feedback from the OTs over the course of the study showed that they were encouraged by having a structured way to target occupational imbalance and disengagement. To date, no standardized intervention exists to target the occupational issues faced by many ACT clients, and the OTs and their ACT colleagues report the usefulness of the “Action over Inertia.”

No harms were reported during the study by participants, therapists, other ACT team members or the research team. Six participants discontinued their participation voluntarily and no participants had to be removed from the study at any time. Re-engaging with activity can be a potentially stressful process, and stress has been associated with vulnerability to mental illness (Krupa, 2004). It is encouraging that the “Action over Inertia” intervention appears to offer a high enough degree of support to people with serious mental illness as they attempt to re-engage in activity and deal with potential increases in stress levels.

5.2 Limitations Associated with the Research Study

When conducting research with human subjects in a community setting, there are often limitations associated with the findings. The use of control and treatments groups, as well as a
pre-test/post-test design served to mitigate some of the limitations, but the study design was not without issues.

The sample size was a large limitation for the study. “Action over Inertia” was designed to target clients that are experiencing occupational imbalance and disengagement. These clients often have difficulty engaging with traditional ACT services, and thus were difficult to recruit for a research study. To increase the power of the study, an attempt was made to increase the sample size by including 5 ACT teams and offering a small honorarium to acknowledge participation. However, the highest number of clients that were willing to participate from one team was 6, and the lowest was 3, giving an overall n=9 for the study. The small sample size of the study led to generally low statistical power in the data analysis, making the detection of differences between groups difficult.

Another limitation was the use of 3 cities with 5 different OTs to deliver the treatment. As this study was an unfunded pilot test, the PI did not have the time and financial resources to perform the pre- and post-testing of the participants, nor deliver the treatment to the treatment participants. Although the OTs were trained in the same way by the PI and similar clients were targeted from each ACT team, the differences in treatment setting and OT could influence the outcomes of the study. Statistical analyses were performed to analyze the effect of demographic differences and effect of therapist on the outcomes, revealing that both of these factors had no significant effect on outcomes.

Due to the small number of participants and OTs available for this study, it was not possible to have a third group of participants to act as controls in regard to OT contact. A third group, who received ACT care as well as weekly contact with an OT, but no “Action over Inertia” treatment, could have served to differentiate between the benefits of regular contact with
an OT and the specific benefits of the “Action over Inertia” workbook. The inclusion of a third participant group in future trials could help strengthen the evidence of the efficacy of “Action over Inertia.”

One threat to the internal validity of the study design was selection effects, referring to pre-existing characteristics of participants, such as severity of illness (Heard & Harris, 2004). Although control and treatment groups were used to reduce the threat of selection effects, due to the small sample size it is possible that one group differed in the severity of their illness. The treatment group was significantly older (p=0.016) and had a longer duration of illness (p=0.026). While this does not necessarily indicate stronger severity of illness, and correlational analysis did not reveal that these variables had a strong effect on the outcome measures, it is possible that the treatment group would have been more resistant to change due to age and length of illness.

Another issue regarding the internal validity of this study was rates of attrition, defined as differential rates of drop-out from groups (Heard & Harris, 2004). Four treatment subjects dropped out of the study, compared to 2 in the control group. Treatment participants who were not responding to the treatment may have dropped out of the study, making the average scores for the treatment group more positive than the control group. Intention-to-treat analysis was not used in this study because there was a lack of clarity in what “dropping out” of the study meant. In future studies, a section of the consent form should detail participant choices when dropping out of the study, such as removing themselves and all data entirely, or discontinuing participation but allowing data collected to that point to be used in analysis. If intention-to-treat analysis can be used in the future, it will serve to strengthen the internal validity of the study by accounting for the effects of attrition (Hollis & Campbell, 1999).
When considering rates of attrition during the study it is important to realize that study conditions do not necessarily reflect the options for the real-world use of the “Action over Inertia” intervention. In a clinical context, if a client is feeling overwhelmed by information, or needs to take a break due to frustration or unstable mental health, the intervention could be scaled back or shelved until the client is ready to move forward with change. In this way, drop outs from treatment may be avoided. However, in the context of a standardized study protocol, pauses in treatment must become study drop outs, leading to issues with attrition.

While external validity was strengthened by the use of different treatment settings across southeastern Ontario, increasing generalization across conditions, it was decreased by the inability to complete follow up measures with the participants (Heard & Harris, 2004). Due to time constraints and lack of financial resources, follow up testing was not completed, limiting the generalization of the treatment effects over time.

The final limitation to the study is regarding time use studies in general. Although 2 days of data were collected at both pre- and post-test, to boost the reliability of the time use data, there are often external events that impact time use. A few clients documented that they were sick with the flu during a test period, and thus less active than usual. One client experienced the break up of her engagement during the study period and consequently spent less time socially at post-test. Other possible external events that may influence time use include visits by extended family and friends, infrequent visits to medical practitioners (such as the dentist) falling in a test period and seasonal changes in activity patterns.

5.3 Implications for Future Research

While this pilot test has offered some promising and encouraging findings, a larger scale trial, potentially with a longer treatment phase and added follow up, would serve to confirm the
findings and add additional evidence to its efficacy. Some information regarding generalizability has been collected due to the study’s multi-site format; however, more research is needed to confirm its efficacy in other settings. This pilot test used ACT teams, but could potentially be tested in in-patient settings, as well as out-patient services not part of the ACT model. The intervention could also be used in a group format to assess whether a group setting could promote more behaviour changes than the 1-1 format it was delivered in for this study.

While the issues of occupational imbalance and disengagement for people with serious mental illness have been well documented on a global level, research regarding the formal treatment of this issue has been sparse to date. This intervention may inspire other occupational therapists to specifically target these issues with structured interventions and document their findings. With the link between occupation and health now clearer than ever, it is an appropriate time for occupational therapists to focus on this area.

5.4 Implications for Clinical Practice

Clinicians often remark on client issues of occupational imbalance and disengagement, and until now have lacked a standardized tool to address these issues. Within the context of ACT teams, where OTs often work as generalists, the time therapists have to devoted to research and program development is often limited (Krupa et al., 2002). Many OTs are frustrated by the lack of occupational resources and tools they have to address the needs of clients with serious mental illness (Krupa et al., 2004). The creation of “Action over Inertia” (Krupa et al., 2007), a new occupational time use intervention fills a gap that has existed in practical resources to assist people with serious mental illness to engage in activity.

Feedback from participants and therapists in this study shows that the intervention is easy to use and follow, contains relevant educational content and provides a goal setting and
evaluation framework. In clinical practice, the intervention could be used for a period longer than 12 weeks if the client so desires, and can be tailored to individual needs and levels of understanding through choices in worksheets, order that the material is covered in, and length of time spent on each section. Ideally, the goal setting, monitoring and evaluation sections could be used in several cycles to implement several behaviour related goals and monitor their progress.

“Action over Inertia” is a concrete tool that gives occupational therapists a chance to share information with other mental health clinicians; raising awareness of the important link between occupation and health, and offering a framework to their colleagues to assist in addressing occupational imbalance and disengagement with clients.

5.5 Conclusions

This pilot test of “Action over Inertia” (Krupa et al., 2007), an occupational time use intervention, was the first documented attempt at the creation and use of a standardized tool to target occupational balance and engagement for people with serious mental illness. Initial findings are positive regarding its ability to initiate small scale behaviour changes, with potential for larger scale change with a longer intervention and follow-up period. “Action over Inertia” was found to have clinical utility based on feedback from treatment participants and from the occupational therapists involved in the delivery of the treatment. Further research on this intervention will serve to refine it and provide additional evidence on its effectiveness. “Action over Inertia” can serve as a tool to promote increased focus on two important health-related concepts: occupational balance and engagement, benefiting people with serious mental illness and the clinicians who serve them.
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Appendix A

Intervention: “Action over Inertia” Contents

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*****Please see the following 7 pages for examples of material from the 5 sections of the

“Action over Inertia” manual*****

100
A. Preparation: Week 1

Daily Time Use: Could This Group Help Me?

Sometimes people who have a mental illness…

~ don’t feel the same pleasure from activities that they used to
~ get nervous or anxious at the thought of participating
~ can’t concentrate when doing an activity they used to enjoy

Then they stop doing activities, leading to…
~ boredom
~ no structure to their days
~ isolation from other people
~ feeling separated from the community

If any of this applies to you, this program may help! It could help you to…
• participate in activities that you enjoy
• get a daily routine of work, play, and rest
• feel in control over your activities
• learn about healthy time use and its benefits
• develop new skills
B. Reflection: Weeks 3-5

Personal Values in Occupation
Rate the following statements in terms of how important each is to you in terms of your participation in activities. *(Derived from Rokeach, 1973)*

<table>
<thead>
<tr>
<th>I would like to participate in activities that…</th>
<th>Very Important</th>
<th>Kind of Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>contribute to my income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make the world more fair for everyone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>are exciting and active</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make my loved ones more secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make me more independent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>increase my physical and mental health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allow me to feel at peace with myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>help me to find love and intimacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allow me to feel safe and secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>are enjoyable and leisurely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>feel fulfilled spiritually</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make me feel good about myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make a lasting contribution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earn me respect and admiration from others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>contribute to my knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>help me find true friendship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make the world more peaceful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>allow me to appreciate nature and art</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Activity and Wellness

In order to have a healthy lifestyle, it is important that your daily routine includes a variety of activity. Each type of activity provides benefits that contribute to your wellbeing. Occupational therapists have come up with 3 categories to classify all of the different activities that people do. They are:

**Self-care**
- taking care of our mental and physical health

**Productivity**
- goal-directed activity that contributes to family, friends and/or community

**Leisure**
- things that we do for personal enjoyment

- Bathing
- Taking a course
- Playing games
- Going to appointments
- Working/volunteering
- Going for a ride or walk
D. Planning: Weeks 7-8

Creating Specific Plans for Action: SMART Goals

You are now ready to create an action plan. The first part of creating a plan is clarifying the goal. Good goals are…

- **Specific**
- **Measurable**
- **Action-oriented**
- **Realistic**
- **Timed**

**Specific**: Goals should as precise as possible. A good goal will answer the 4 W’s:
- *Who* is involved?
- *What* do I want to accomplish?
- *Where* will this occur?
- *Why* is this important to me?

**Measurable**: It should be clear to you if you have attained your goals. They should be able to complete the statement “*I have attained my goal when…*” using concrete criteria. Tangible objects are often useful to measure success.

A good measurable goal…

I will go to the grocery store every Monday and spend $10 on fresh fruits and vegetables.

A not-so-measurable goal…

I will make sure there is always food in the house.
**Action-oriented**: Good goals can be achieved by doing something. You should set goals in which success relies most heavily on your own action, as opposed to external events that are beyond your control. For example, say your goal is to make new friends. An action-oriented goal would be “I will approach one new person when I am volunteering”, as opposed to “I will be polite to people who strike up conversations with me”.

~ Ask yourself “What actions will I take to achieve my goal?”

**Realistic**: A good goal is one that you can begin to work towards right now. Realistic goals may be challenging but should not be overwhelming. Breaking down an overarching goal into smaller, more manageable steps may be helpful.

**Timed**: Goals should have a set beginning time and an end date for completion. Also, goals should state how much time is required on an ongoing basis. You should be able to answer the following questions:

- *When will I begin to work towards my goal?*
- *When will I have achieved my goal by?*
- *How often will I work towards my goal? For how long?*
E. Action & Evaluation: Weeks 9-12

Evaluating My Actions

Congratulations! You have made some important changes to the activities that you participate in. Think about how last week went, and use this worksheet to write down some reflections.

The most difficult activity was ______________________

It was difficult because …
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I dealt with the challenges by …
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

The easiest activity was ______________________

It was easy because …
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

The most enjoyable activity was ______________________

It was enjoyable because …
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Do you feel that there were any benefits to participating? Any downfalls?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Did you find that you used the rest of your time any differently because of your new activities?


Look back at the 3 areas of occupational engagement that you identified as areas to work on in **D2: Prioritizing Change** in the planning phase. Are these areas being improved by your participation in these new activities? Fill in the chart below.

<table>
<thead>
<tr>
<th>Area of occupational engagement that I wanted to work on…</th>
<th>My new activity(s) that target this area…</th>
<th>How is this area being improved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B
Identifying Client’s Current Time Use Patterns

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Client Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>The person’s daily activities demonstrate an imbalance between self-care, productivity and leisure.</td>
<td></td>
</tr>
<tr>
<td>The person spends a large amount of time without defined activity on a day-to-day basis.</td>
<td></td>
</tr>
<tr>
<td>Much of the individual’s day is spent in passive activities or rest</td>
<td></td>
</tr>
<tr>
<td>There is a lack of organized routine/structure to the person’s daily activity.</td>
<td></td>
</tr>
<tr>
<td>The person’s daily activities limit his/her contact with others.</td>
<td></td>
</tr>
<tr>
<td>The person’s daily activities limits his/her access to a range of community environments.</td>
<td></td>
</tr>
<tr>
<td>The person cannot define activities/occupations that are meaningful or of personal interest.</td>
<td></td>
</tr>
<tr>
<td>The person experiences distress, or is easily overwhelmed in activity.</td>
<td></td>
</tr>
<tr>
<td>The person’s involvement in activity is impacted by a limited experience of enjoyment.</td>
<td></td>
</tr>
</tbody>
</table>

If you have checked off **3 or more** of these criteria then this intervention may be beneficial for this individual.
Appendix C
Demographic Questionnaire

To the Therapist: Please complete the form below for each of your participants.

1. Unique Identifier:_________

2. Age:_______

3. A. Psychiatric Diagnosis?________________________________________
   ______________________________________________________________
   B. Date of diagnosis or first hospitalization?______________________
   ______________________________________________________________

4. Length of time served by ACT?__________________________________

5. A. What type of housing does this person live in? (apartment, house, boarding house, other)____________________________________
   B. He/she rents or owns?_______________________________________
   C. Lives alone or with other people? Please explain__________________
   _____________________________________________________________
   _____________________________________________________________


7. Children or other people that they care for on a daily basis? Please explain.______________________________________________
   _____________________________________________________________

8. Any pets that they care for on a daily basis? Please explain.___________
   _____________________________________________________________

9. At what grade did he/she finish attending school?____________________
   Did they attend post-secondary school? Circle (Y/N) If yes, what degree did they pursue?____________________________________
   How many years did this take?__________________________________
10. Is he/she currently employed? Circle(Yes/No) If yes, how many hours per week? _____ Please describe the current job: ________________________________

11. If they are not currently employed, have they had a job in the past? Please explain last 2 jobs (if applicable), with length of time employed at each and hours worked per week.
   1. ______________________________________________________
   2. ______________________________________________________

12. What is/are their source(s) of income? (ODSP, employment, pension, family support) __________________________________________________________________________
    __________________________________________________________________________
    __________________________________________________________________________

Please use the space below to add any additional information
Appendix D
Daily Time Use Log

Please fill in the first box for each hour. If the activity was ½ an hour in length, the box for that hour can be divided in half. Your Occupational Therapist will help you complete the rest of the form. (Actual forms used in study were larger to allow space for data collection).

### MORNING

<table>
<thead>
<tr>
<th>TIME</th>
<th>What did you do?</th>
<th>Was there anyone with you? Who?</th>
<th>Where were you?</th>
<th>How did you experience the activity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 am (midnight)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1 am</td>
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<tr>
<td>11 am</td>
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<td></td>
</tr>
</tbody>
</table>
### AFTERNOON AND EVENING

<table>
<thead>
<tr>
<th>TIME</th>
<th>What did you do?</th>
<th>Was there anyone with you? Who?</th>
<th>Where were you?</th>
<th>How did you experience the activity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 pm (noon)</td>
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<td></td>
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<td></td>
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<tr>
<td>1 pm</td>
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<td>2 pm</td>
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<tr>
<td>11 pm</td>
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</tbody>
</table>

Please record today’s date here: ______________________________
Appendix E
Profiles of Occupational Engagement for people with Schizophrenia (POES)

Fig. 2. POES: Data collection and assessment.

Part I: Data collection. (Extract from the instructions)
The client is asked to fill in the diary and provide an account of the use of time during the previous 24 hours. The assessor goes on to perform a supplementary interview which works as a cognitive aid and helps the client to recall the chronological order of the events and the associated experiences. The interview data are added to the time-use diary.

What did you do? Record everything that you did, and how long the activities were performed.
One-hour intervals

Was there anyone else around at the time? Record who you were with, if other people were present, or if you were on your own.

Where were you at the time? Name the place and location.

How did you experience the activity? Record your personal reflections and comments.

Part II: Assessment. (Extract from Items: Place)
Circle the ranking category that suits the client’s situation

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spends time mainly in one place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The client rarely leaves the living base, such as the home environment, or some other setting demanding environment, such as a ward, for long periods of time. Some occasional visits to public places related to fulfilling immediate needs, such as being hungry or having the urge to move, may occur.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 2 | Spends time in a limited number and type of place | | | |
|   | The client does not leave the living base during the quieter periods of the day. The more active periods are likely to be spent in day care centres or other care facilities, or in a family member’s house. Public places are likely to be visited, often around the neighbourhood, either the living base or seeks places for reasons other than to satisfy immediate needs. |

| 3 | Spends time in several places | | | |
|   | The client does not usually spend an excessive amount of time in the home environment. Often environments that support participation in societal activities are visited. Moves around in public places, not only in the neighbourhood but sometimes also to destinations further away from home. |

| 4 | Spends time in a variety of places and moves without hindrance in society | | | |
|   | The client leaves the living base for at least some period of time every day and the client range from private to public places, associated with ongoing engagement in occupations. |

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Appendix F

Engagement in Meaningful Activities Survey (EMAS)

FIGURE 1. Engagement in Meaningful Activities Survey (EMAS): Likert Scale

Below is a list of statements about your activities. Please read each one carefully and place an X in the box that best describes **to what extent these statements are true for you**.

Take your time and try to be as accurate as possible.

I will calculate the totals when we are all finished.

| The activities I do help me take care of myself (e.g., keep clean, budget my money). |
|--------------------------------------------------|--------------------------------------------------|
| The activities I do reflect the kind of person I am. |
| The activities I do express my creativity. |
| The activities I do help me achieve something which gives me a sense of accomplishment. |
| The activities I do contribute to feeling competent. |
| The activities I do are valued by other people. |
| The activities I do help other people. |
| The activities I do give me pleasure. |
| The activities I do give me a feeling of control. |
| The activities I do help me express my personal values. |
| The activities I do give me a sense of satisfaction. |
| The activities I do have just the right amount of challenge. |

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Total**
Appendix G
Feedback Questionnaire for Treatment Participants

Any opinions you share in this form will be kept confidential. We are interested in your thoughts about the daily time use treatment you received from your ACT Occupational Therapist. Any information you can provide us will help to design a useful and relevant intervention.

1. LOGISTICS
   a. How did you find the 12 week time line of the treatment? Was it too short, too long, just right?
      Comments_____________________________________________________
      _____________________________________________________________

   b. Would you change organization of treatment if you could? Circle (Yes/No) If yes, what changes would you make to the time line?
      _____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________

   c. Did you find the content of the treatment helpful? Please explain_____
      _____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________

2. LEARNING
   a. Name up to 3 things you learned about the way you use your time and how that is important to your health and well-being:
      1.____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________
      2.____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________
      3.____________________________________________________________
      _____________________________________________________________
      _____________________________________________________________
b. Is there anything you wanted to learn about during this treatment that you did not have the chance to? Please explain__________________________________________________________

__________________________________________________________

c. What could we change to make the treatment easier to understand and use in your daily life? Comments__________________________________________________________

__________________________________________________________

3. PERSONAL CHANGES

a. Has participating in the treatment changed your daily routine in any way? Circle (Yes/No). Please explain__________________________________________________________

__________________________________________________________

b. Has participating in the treatment changed how you feel about your ability to participate in activities? Circle (Yes/No). Please explain__________________________________________________________

__________________________________________________________

c. Has your ability to socialize (talk with other people) improved, decreased, or stayed the same since beginning this treatment? Please explain__________________________________________________________

__________________________________________________________

d. Has anyone in your life noticed a change in how you use your time or feel about yourself since beginning this treatment? Circle (Yes/No). Please explain__________________________________________________________

__________________________________________________________

e. Would you recommend this treatment to other people who have a mental illness? Circle (Yes/No). Why or why not?__________________________________________________________

__________________________________________________________
4. Is there anything else you would like to tell us about how to improve this treatment?

Comments

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
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________________________________________________________________
________________________________________________________________
________________________________________________________________

Thank you for your time in giving this feedback!
Appendix H

Feedback Questionnaire for Therapists

We are interested in your thoughts on the daily time use intervention you provided to your ACT Treatment Group participants. Any information you can provide us will help to design a useful and relevant intervention.

1. LOGISTICS
   a. How did you find the 12 week time line of the treatment? Was it too short, too long, just right?
      Comments_____________________________________________________
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________

   b. Would you change organization of treatment if you could? Circle (Yes/No) If yes, what changes would you make to the time line?
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________

   c. Did you find the content of the treatment relevant? Please explain
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________

2. LEARNING
   a. What content appeared easiest for the clients to grasp?
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________
      ______________________________________________________________

   b. What content appeared hardest for the clients to grasp?
      ______________________________________________________________
How could we simplify these concepts?
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

3. Would you use this intervention for your other ACT clients who experience Occupational Disengagement? Circle (Yes/No). Why or why not?________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

4. Is there anything else you would like to tell us about how to improve this treatment? Comments________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Thank you for your time in giving this feedback
Appendix I
Statistics Canada Activity Codes, 1998

Productivity

A. PAID WORK AND EDUCATION

1. Paid Work
   011 Work for Pay at Main Job
   012 Work for Pay at Other Job(s)
   021 Overtime Work
   022 Looking for Work
   023 Unpaid Work in a Family Business or Farm
   030 Travel During Work
   040 Waiting/Delays at Work
   070 Coffee/Other Breaks
   080 Other Work Activities
   832 Hobbies Done For Sale or Exchange
   842 Domestic Home Crafts Done For Sale or Exchange

2. Education
   500 Full-Time Classes
   511 Other Classes (Part-Time)
   512 Credit Courses on Television
   520 Special Lectures: Occasional
   530 Homework: Course, Career/Self-Development
   550 Breaks/Waiting for Class
   580 Other Study

3. Day Program Activities (Added for the purposes of this study)
   1001 Work at Program Site for Pay
   1002 Attend Outing for Meal/Coffee
   1003 Prepare Meal at Site
   1004 Attend a Field Trip
   1005 Attend Presentation/Meeting/Class
   1006 Eat Meal at Site
   1007 Attend Recreational Event
   1008 Attend Support Group
   1009 Attend Social Group
   1010 Socialize at the Site

4. Commuting
   090 Travel: To/From Work
   590 Travel: Education/Day Program
   893 Travel: Hobbies and Crafts for Sale

B. UNPAID WORK

5. Cooking/Washing Up
   101 Meal Preparation
   102 Baking, Preserving Food, Home Brewing, etc.
   110 Food (or Meal) Cleanup

6. Housekeeping
   120 Indoor Cleaning
   130 Outdoor Cleaning
   140 Laundry, Ironing, Folding
   151 Mending/Shoe Care
   152 Dressmaking and Sewing

7. Maintenance and Repair
   161 Interior Maintenance and Repair
   162 Exterior Maintenance and Repair
   163 Vehicle Maintenance
   164 Other Home Improvements

8. Other Household Work
   171 Gardening/Grounds Maintenance
   172 Pet Care
   173 Care of House Plants
   181 Household Management
   182 Stacking and Cutting Firewood
   183 Other Domestic/Household Work, n.e.s.
   184 Unpacking Groceries
   185 Packing and Unpacking Luggage and/or Car
   186 Packing and Unpacking for a Move of the Household
   190 Travel: Domestic Work

9. Shopping for Goods and Services
   301 Groceries
   302 Everyday Goods and products (Clothing, Gas, etc.)
   303 Take-out Food
   304 Rental of Videos
   310 Shopping for Durable Goods
   320 Personal Care Services
   331 Financial Services
   332 Government Services
340 Adult Medical and Dental Care (Outside Home)
350 Other Professional Services (Lawyer, Veterinarian)
361 Automobile Maintenance and Repair Services
362 Other Repair and Cleaning Services
380 Other Shopping and Services
390 Travel: Shopping for Goods and Services

10. Child Care
200 Child Care (Infant to 4 Years Old)
211 Putting Children to Bed
212 Getting Children Ready for School
213 Personal Care for Children of the Household
220 Helping/Teaching/Reprimanding
230 Reading/Talking/Conversation with Child
240 Play with Children
250 Medical Care - Household Child
260 Unpaid Babysitting
281 Help and Other Care - Household Children
291 Travel: Household Child

11. Adult Care
271 Personal Care - Household Adults
272 Medical Care - Household Adults
282 Help and Other Care - Household Adults
292 Travel: Household Adults

12. Civic and Voluntary Activity
600 Professional, Union, General Meetings
610 Political, Civic Activity
620 Child, Youth, Family Organizations
630 Religious Meetings, Organizations
651 Fraternal and Social Organizations
652 Support Groups
660 Volunteer Work, (Organizations)
671 Housework and Cooking Assistance
672 House Maintenance and Repair Assistance
673 Unpaid Babysitting
674 Transportation Assistance
675 Care for Disabled or Ill
676 Correspondence Assistance
677 Unpaid Help for a Business or Farm
678 Other Unpaid Help
680 Other Organizational, Voluntary and Religious Activity

691 Travel: Civic and Voluntary Activity
800 Coaching
892 Travel: Coaching

Self-Care

13. Meals (excl. Restaurant Meals)
050 Meals/Snacks at Work
430 Meals/Snacks/Coffee at Home
431 Meals/Snacks/Coffee at Another Place (excl. Restaurants)
540 Meals/Snacks/Coffee at School
642 Meals/Snacks/Coffee at Religious Services
661 Meals/Snacks/Coffee at Place of Volunteer Work

14. Other Personal Activities
400 Washing, Dressing
410 Personal Medical Care at Home
411 Private Prayer, Meditation and Other Informal Spiritual Activities
460 Incidental Sleep, Naps
480 Other Personal Care or Private Activities
492 Travel: Other Personal Activities
640 Religious Services/Prayer/Bible Readings
692 Travel: Religious Services

Leisure

15. Socializing
060 Idle Time Before/After Work
440 Restaurant Meals
491 Travel: Restaurant Meals
701 Professional Sports Events
702 Amateur Sports Events
711 Pop Music, Concerts
712 Fairs, Festivals, Circuses, Parades
713 Zoos
720 Movies, Films
730 Opera, Ballet, Theatre
741 Museums
742 Art Galleries
743 Heritage Sites
751 Socializing with Friends/Relatives (No Meal)
752 Socializing with Friends/Relatives (With Meal)
753 Socializing with Friends/Relatives (Non-residential or institutional)  
754 Socializing with Friends/Relatives (Institutional, e.g. Hospital, Nursing Home)  
760 Socializing at Bars, Clubs (No Meal)  
770 Casino, Bingo, Arcade  
780 Other Social Gatherings (Weddings, Wakes)  
791 Travel: Sports and Entertainment Events  
792 Travel: Socializing (Between Residences)  
793 Travel: Other Socializing  
950 Talking, Conversation, Phone  

16. Passive Leisure  
911 Watching Television (Regular Scheduled TV)  
912 Watching Television (Time-shifted TV)  
913 Watching Rented or Purchased Movies  
914 Other Television Watching  
900 Listening to the Radio  
920 Listening to CDs, Cassette Tapes or Records  
931 Reading Books  
932 Reading Magazines, Pamphlets, Bulletins, Newsletters  
940 Reading Newspapers  
961 Reading Mail  
962 Other Letters and Mail  
980 Other Media or Communication  
990 Travel: Media and Communication  
470 Relaxing, Thinking, Resting, Smoking (moved from self-care for this study)  

17. Active Sports  
801 Football, Basketball, Baseball, Volleyball, Hockey, Soccer, FieldHockey  
802 Tennis, Squash, Racquetball, Paddle Ball  
803 Golf, Miniature Golf  
804 Swimming, Waterskiing  
805 Skiing, Ice Skating, Sledding, Curling, Snowboarding  
806 Bowling, Pool, Ping-pong, Pinball  
807 Exercises, Yoga, Weightlifting  
808 Judo, Boxing, Wrestling, Fencing  
809 Rowing, Canoeing, Kayaking, Windsurfing, Sailing (Competitive)  
810 Other Sports  
811 Hunting  
812 Fishing  
813 Boating  
814 Camping  
815 Horseback Riding, Rodeo, Jumping, Dressage  
816 Other Outdoor Activities/Excursions  
821 Walking, Hiking, Jogging, Running  
822 Bicycling  
891 Travel: Active Sports  
560 Leisure and Special Interest Classes  
831 Hobbies Done Mainly for Pleasure  
841 Domestic Home Crafts Done Mainly for Pleasure  
842 Other Sport or Active Leisure  
894 Travel: Other Active Leisure  

Sleep  
450 Night/Essential Sleep  
460 Incidental Sleep/Naps
Appendix J

Study Information Sheet

Add Meaning and Activity to Your Daily Life

STUDY INFORMATION SHEET

TITLE OF PROJECT: Efficacy of an Occupational Time Use Intervention
Investigators: Terry Krupa, PhD, Megan Edgelow, BScOT, School of Rehabilitation Therapy, Faculty of Health Sciences, Queen’s University

You are being invited to participate in a research study to evaluate the usefulness of a new Occupational Therapy Intervention for people with mental illness, designed to improve satisfaction and meaning experienced in daily activities.

As a part of this study, the Occupational Therapist (OT) on your Assertive Community Treatment (ACT) team will be involved in delivering this treatment and can meet with you in the community for this purpose.

If you participate in this study you will begin by having the OT interview you about your current habits and activity levels. For the next 12 weeks in between, the Occupational Therapy Intervention will take place. Half the people who agree to participate in this study will be placed randomly in the Treatment Group and will receive this Intervention. The other half will be randomly placed in the Control Group and will simply continue to receive their usual ACT services during the 12 week intervention period. After the 12 week intervention period, the OT will repeat the interview that was conducted at the beginning of the study. Before the study begins you will be informed of which group you have been randomly selected to participate in.

Your privacy and confidentiality will be maintained at all times during the study. Please be assured that you will be provided with the support required to participate in this study. We are able to offer payment of $10 for your participation in the initial and final interviews with your OT ($20 total).

Please let XXX, your ACT team Occupational Therapist, know if you are interested in participating or if you would like to speak to one of the project investigators to receive more information about this opportunity. You will be provided with a copy of this information sheet for your own records.

Thank you
Appendix K

Study Consent Form

School of Rehabilitation Therapy
Faculty of Health Sciences
Queen’s University

CONSENT FORM

Title of Research Project:
Efficacy of an Occupational Time Use Intervention

Investigator(s):
Principal Investigators:
Terry Krupa, PhD, Queen’s University  613-533-6236
Megan Edgelow, BScOT, Queen’s University    613-331-1449

You are being invited to participate in this research study. Before you consent to be part of this research study, please take the time to carefully read and consider the following information that describes the purpose, the possible benefits, and other information about the study.

Purpose of the Research:
In the proposed study, we will pilot test a new Occupational Therapy Intervention that focuses on enhancing the daily life activities of people with mental illness. There is a great deal of evidence indicating that people living with mental illness would like to see more attention paid to ensuring that they have opportunities to participate in roles and activities that they find meaningful in the community. The primary goal of this research study is to examine the ability of this new intervention to create positive change in the way people with mental illness connect with and experience activity in their daily lives. A secondary goal is to help improve the usefulness of the intervention for future use.

Description of the Research:
If you agree to participate in this study, you will be randomly selected to be part of either a Control or Treatment Group. All participants will participate in data collection at the beginning and end of our study. The data that will be collected at both these times will involve you in collecting information about your time use, the activities you typically do, for 2 weekdays in the same week, and a survey about the meaning you associate with your daily activities.

At the beginning, you will meet with your ACT team Occupational Therapist twice in the same week, each meeting for approximately one hour. At these meetings you will be interviewed about the previous day’s time use, for which you will have been asked to keep a 24-hour diary. In this way the OT will collect 2 full days of your daily time use
information. At the second meeting with your OT, you will be asked to complete a short survey about the meaning you associate with your daily activities.

This process will be completed again in 12 weeks time, at the end of the 12 week intervention period.

Participants that are randomly selected to be part of the Control Group will not receive the intervention and will simply continue to receive their regular ACT care during the 12 week intervention period.

Participants randomly selected to be part of the Treatment Group will receive a 12 week time use intervention, provided by the ACT team OT. The time commitment would involve a weekly meeting with the O.T., lasting about an hour, for 12 weeks. The intervention will involve you in thinking about how you spend your day, the activities you do and identifying and planning for how you would like to make positive changes in these areas. The intervention also includes an educational component that will provide you with important information about the relationship between mental illness, activity and health and well-being. You will also be asked to provide feedback about the intervention. The researchers are interested in learning your ideas about how the intervention might be improved.

**Potential Harms, Injuries, Discomforts or Inconveniences:**
There are no known harms or risks associated with participation in this study. In order to minimize any inconveniences that may arise from participation, every effort will be made to accommodate your preferences regarding time and place of the meetings.

**Potential Benefits:**
While you may not benefit directly from this study, results from this study may improve the potential benefits of the intervention. You may experience a change in the way you feel about activities and participating in social and community events. The goal of this intervention is to help people with mental illness make changes to the way they use their time, so that they can improve their feelings about activity and find ways to become more active.

**Confidentiality:**
Confidentiality will be respected and no information that discloses your identity will be released or published without your consent. Since the study involves intervention provided by the occupational therapist on your ACT team, your participation in the study will be noted in your health record. Any information obtained in this study will not identify you by name, only by a coded number. Your name will not appear in any reports (published or unpublished) as a result of this study.

**Reimbursement:**
A $20 honorarium will be paid for completion of the data collection sessions dispersed at the beginning and end of the study; $10 dispersed at the beginning and $10 at the end.
Participation:
Participation in this research is voluntary. If you choose not to participate, you will continue to have access to quality care through your ACT team. You will be given a copy of this consent form for your records. In no way does signing this consent form waive your legal rights nor does it relieve the investigators, sponsors or involved institutions from their legal and professional responsibilities.

Consent:
By signing this form, I agree that:
1) The study has been explained to me. All my questions were answered.
2) The possible harms and discomforts and the possible benefits of this study have been explained to me.
3) I know about the alternatives to taking part in this study. I understand that I have the right not to participate and the right to stop at any time. The decision about whether or not to participate will not affect my health care.
4) I am free now, and in the future, to ask any questions about the study.
5) I have been told that information collected during the study will be confidential.
6) I understand that no information that would identify me, will be released.

I hereby consent to participate.

______________________________________________  The person who may be contacted about the research is:

Name of Participant  Terry Krupa, who may be reached at telephone #:

______________________________________________  613-533-6236

Signature

Name of person who obtained consent

______________________________________________  Date

If you have any concerns about this research project please contact Dr. Elsie Culham, Director, School of Rehabilitation Therapy, Queen’s University at 613- 533-6727.

For answers to questions about research subjects’ rights and research-related injury, please contact Dr. Albert Clark, the Chair of the Research Ethics Board at Queen’s University at the following phone number: 613-533-6000 x 74579.
Appendix L
Queen's University REB Approval

QUEEN'S UNIVERSITY HEALTH SCIENCES & AFFILIATED TEACHING HOSPITALS RESEARCH ETHICS BOARD

July 4, 2007

Ms. Megan Edgelow
School of Rehabilitation Therapy
Queen's University

Dear Ms. Edgelow,

Study Title: Efficacy of an Occupational Time Use Intervention
Co-Investigators: Dr. T. Krupa

The members of the Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board have examined the protocol and consent form for your project (as stated above) and consider it to be ethically acceptable. This approval is valid for one year from the date of the chair’s signature below. Please attend carefully to the following list of ethics requirements you must fulfill over the course of your study:

➢ Reporting of Amendments: If there are any changes to your study (e.g. consent, protocol, study procedures, etc.), you must submit an amendment to the Research Ethics Board for approval. (see http://www.queensu.ca/vpr/reb.htm).

➢ Reporting of Serious Adverse Events: Any unexpected serious adverse event occurring locally must be reported within 2 working days or earlier if required by the study sponsor. All other serious adverse events must be reported within 15 days after becoming aware of the information.

➢ Reporting of Complaints: Any complaints made by participants or persons acting on behalf of participants must be reported to the Research Ethics Board within 7 days of becoming aware of the complaint. Note: All documents supplied to participants must have the contact information for the Research Ethics Board.

➢ Annual Renewal: Prior to the expiration of your approval (which is one year from the date of the Chair’s signature below), you will be reminded to submit your renewal form along with any new changes or amendments you wish to make to your study. If there have been no major changes to your protocol, your approval may be renewed for another year.

Yours sincerely,

[Signature]
Chair, Research Ethics Board

[Signature]
Date: July 10, 2007

Study Code: REH-401-07

➢ Investigators please note that if your trial is registered by the sponsor, you must take responsibility to ensure that the registration information is accurate and complete.
Appendix M
Providence Care Research Review Committee Approval

August 22, 2007

Dr. Terry Krupa
Associate Professor
School of Rehabilitation Therapy
13 George Street, LDA Building
Queen’s University

Re: Efficacy of an Occupational Time Use Intervention

Dear Dr. Krupa

The above-named proposal was reviewed by the Providence Care Research Review Committee at their meeting on Monday, August 20, 2007.

While the committee had no major concerns with the proposal, they did have a few comments about the consent form which they felt should be passed along to the student, Ms. Megan Edgelow, for future consideration. They noted that although the consent form was rewritten at the request of the Queen’s REB, it was not very clear and concise. They found that the language in the original information sheet was much clearer and a better sample of how a consent form should read. They addressed the issue of acronyms (such as ACT) and agreed that it is good general practice to include a list of Abbreviations/Definition of Terms used within the proposal or to not use abbreviations/acronyms if they appear infrequently throughout the document. The committee had requested assurance that the consent form would be explained to the client by the person obtaining the consent and Ms. Edgelow has already verified that this will be done.

I am pleased, therefore, to confirm that you have the support of the Research Review Committee to proceed with your proposal.

Yours sincerely,

Marcy Saxe-Braithwaite
Chair, Providence Care Research Review Committee

Ms. Megan Edgelow, MSc Rehabilitation Science Candidate
Dr. L.J. Edmonds, Director, Queen’s Office of Research Studies
Ms. M. Halladay, Director, Providence Care Patient Records & Registration

one of the university hospitals of kingston
Appendix N

Quinte Health Care REB Approval

October 11, 2007

Ms. Megan Edgelow & Dr. Terry Krupa
Rehabilitation Science Candidate
School of Rehabilitation Therapy
Queen's University
76 Stuart St.
Kingston, ON

Re: “Efficacy of an Occupational Time Use Intervention for People with Serious Mental Illness”

Dear Ms. Edgelow & Dr. Terry Krupa

I am pleased to advise you that Quinte Health Care's Research Ethics Board has provided final approval on the above mentioned proposal based upon your response to our concerns. Please provide an amended application and research study that include the amendments and associated explanations as set out in your letter.

Please submit the amended version of your research proposal and application to Debbie Freeburn.

If you require additional information, please feel free to contact our office.

Regards,

Dr. Elizabeth Christie, Chair
Quinte Health Care
Research Ethics Board
Appendix O
Royal Ottawa Health Care Group REB Approval

Services de santé
RoyalOttawa
Health Care Group

RESEARCH ETHICS BOARD

November 20, 2007
Dr. Terry Krupa
Principal Investigator

Re: REB# 2007028
Efficacy of an Occupational Time Use Intervention for People with Serious Mental Illness.

Dear Dr. Krupa,

This letter is to acknowledge receipt of your letter (dated November 6, 2007) and e-mail (dated November 20, 2007) with supporting attachments in which you address points expressed to you in our letter (dated October 18, 2007) and e-mail (dated November 15, 2007) and provide a revised copy the Consent Form to Participate in a Research Study (version date: November 16, 2007) for the above-titled protocol.

Your responses to questions regarding the Protocol and modifications made to the Information and Consent Form have been reviewed and your protocol has now received approval for the period of one (1) year from the date of this letter.

This approval is contingent upon maintaining adherence to the normal approval process, namely,

- reporting to the Board any adverse events of the project in progress
- seeking prior approval from the Board of any direct use of public media to recruit research participants

Approval will be reconsidered if Hospital/Institutional resources are used beyond those specified on the Checklist of Resources or the impact on Hospital resources and/or if Grant funding applied for is not received. However, in either case, the protocol can be re-submitted with revised Checklist information and will be reconsidered.

Annual progress reports must be submitted to the Board for continuation of Research Ethics approval. A termination report is required at the conclusion of the study.

Sincerely, on behalf of the Board,

Alan Douglass, MD FRCP
Dip. ABSM; Dip. ABPN
Chair, Research Ethics Board

cc. Megan Edgelow