**PSYCHOSOCIAL PROCESSES INFLUENCING WEIGHT
MANAGEMENT AMONG PERSONS NEWLY PRESCRIBED
ATYPICAL ANTIPSYCHOTIC MEDICATIONS**

by

Sarah Xiao

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Abstract

PURPOSE: To generate a theory of the psychosocial processes influencing weight management among persons newly prescribed atypical antipsychotic medications.

RESEARCH QUESTIONS:

1. What influences weight management in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?
2. How is weight management facilitated in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?
3. What psychosocial processes impede weight management in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?

METHODS: A qualitative, grounded theory research design was used to guide the study. Semi-structured interviews were the method of data collection and analysis was performed using constant comparison.

SAMPLE & SETTING: A sample of 10 participants with first-episode psychosis prescribed atypical antipsychotics for at least eight weeks and six participants with a diagnosis of chronic schizophrenia who have been taking atypical antipsychotic medication for at least three years were obtained from an Outpatient Psychiatric program using theoretical sampling.

FINDINGS: Contextual factors influencing weight management were: accessibility to resources, unstructured lifestyle, and others' perception of their weight. Conditions influencing weight management were: rapid weight gain, insatiable hunger, and a lack of motivation boosters. Participants' early responses to actions influencing weight gain management included discontinuing medications, choosing lower calorie foods, using walking in daily activities as exercise, accepting weight gain, and trying to manage weight but giving up. The consequences

revealed from data analysis were contemplating weight management and not trying, as the barriers to weight management substantially exceeded the facilitators and many procrastinated in taking on any weight management strategies.

CONCLUSION: The theoretical framework developed in this study can assist with the understanding and management of weight gain among this unique population.

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Table of Contents

Abstract.....	ii
Acknowledgements.....	iv
Chapter 1 Introduction	1
Chapter 2 Literature Review	4
2.1 First-episode Psychosis and Schizophrenia	4
2.2 Typical and Atypical Antipsychotics.....	6
2.3 Weight Gain Associated with Atypical Antipsychotic Medications.....	7
2.4 Effects of Weight Gain (Psychological and Physical)	8
2.5 Schizophrenia and Obesity	9
2.6 Early Intervention, Weight Management Methods and Outcomes	10
2.7 Psychosocial Processes and Symbolic Interactionism	13
Chapter 3 Methods.....	15
3.1 Research Tradition.....	15
3.2 Study Participants	17
3.3 Measurement Methods and Data Collection Approach	18
3.4 Data Analysis	19
3.5 Ethical Considerations	19
3.6 Rigour and Trustworthiness	20
Chapter 4 Findings.....	21
4.1 Contextual Barriers of Weight Management	22
4.2 Facing Limiting Forces	29
4.3 Responding to Weight Gain.....	34
4.4 Weight Management Inaction.....	36
Chapter 5 Discussion	39
5.1 Related Literature.....	40
5.2 Study Limitations.....	45
5.3 Nursing Implications.....	46
5.4 Future Areas for Research	49
Chapter 6 Conclusion.....	50
References.....	51

Appendix A Informant Data Sheet.....	63
Appendix B Interview Guide	64
Appendix C Consent Form	65

List of Figures

Figure 1 Weight Management Among Persons with First Episode Psychosis on Atypical Antipsychotic Medication.....	22
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List of Tables

Table 1 Demographic Characteristics of Participants.....	17
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Chapter 1

Introduction

A large proportion of patients who are on second-generation antipsychotic medications gain up to 20 percent of their baseline body weight. People with schizophrenia are often prescribed second-generation antipsychotics, also known as atypical antipsychotic medications, which have been shown to reduce the risk for extrapyramidal symptoms and increase treatment response (Keefe et al., 2006; Naber & Lambert, 2004). Treatment with atypical antipsychotic medications typically begins when patients are diagnosed with first episode psychosis. Rapid weight gain is often noted within the first few months after the initiation of treatment depending on the selected medication (Allison et al., 1999). Despite the increased tolerability of atypical antipsychotic medications, the side effects of weight gain still bear serious social and clinical implications. In addition to cardiovascular and metabolic health problems such as obesity, hyperlipidemia, and diabetes (Green, Patel, Goisman, Allison, & Blackburn, 2000; Kendrick, 1996; Sernyak, Leslie, Alarcon, Losonczy, & Rosenheck, 2002), lifestyle factors and the weight gain can contribute to psychological issues such as low self-esteem and/or negative self-concept (Mastrigt, Addington, & Addington, 2004; Strassnig, Brar, & Ganguli, 2003; Weiden & Mackell, 1999). Weight gain also decreases the quality of life of patients in the areas of social, sexual, physical functioning, and in the work place (Kolotkin, Crosby, Corey-Lisle, Li, & Swanson, 2006).

Currently, many researchers recommend intervention programs involving exercise and nutrition counselling but efforts to design long-term effective weight control programs have yielded limited success (Faulkner, Soundy, & Lloyd, 2003). Research has demonstrated the need for a wide array of early effective therapeutic weight management strategies in patients on

antipsychotic medications (Faulkner, et al., 2003). The majority of weight loss interventions found in the literature for persons with schizophrenia involve diet modifications (Evans, Newton, & Higgins, 2005; Jean-Baptiste et al., 2007), exercise (Archie, Wilson, Osborne, Hobbs, & McNiven, 2003; Duraiswamy, Thirthalli, Nagendra, & Gangadhar, 2007; Fogarty, Happell, & Pinikahana, 2004), or both (Ball, Coons, & Buchanan, 2001; Centorrino et al., 2006; Lee, Choi, & Kwon, 2008). It is unclear which of these strategies are most effective and appropriate for managing weight among persons on atypical antipsychotic medications since many studies were limited by attrition and participants' lack of adherence to the program. There are currently no known early intervention psychosis programs addressing weight management in this population. Although some exercise programs have demonstrated promising results (Fogarty, et al., 2004; Klam, McLay, & Grabke, 2006), more research is needed to examine the psychosocial barriers to and facilitators for weight management among patients recently prescribed atypical antipsychotic medication for a first episode psychosis. No studies have specifically investigated the psychosocial factors that influence weight management in this population.

A qualitative study using the grounded theory method was identified as appropriate to investigate this phenomenon as it allows a psychosocial theory to be generated that is grounded in data. In grounded theory studies, a sensitizing conceptual framework is integral to the study's implementation as it provides conceptual direction to the empirical inquiry. Symbolic interactionism was used as a guiding perspective in this study as it stresses the significance of human conduct resulting from continuous interactions with others and emphasizes the patients' definition of their reality. Specifically, their behaviours are conceived to be based on the meanings they attribute to the situations they are in (Eaves, 2001; Tavakol, Torabi, & Zeinaloo, 2006). Moreover, symbolic interactionism often informs grounded theory studies. It was,

therefore, selected as an appropriate sensitizing framework to this grounded theory study, whose purpose is to investigate and explain core psychosocial processes within human interactions that are grounded in data (Tavakol, et al., 2006).

The objective of the proposed study was, therefore, to develop a grounded theory guided by symbolic interactionism of the psychosocial processes of weight management in patients with newly diagnosed schizophrenia.

This qualitative study addressed the following research questions:

1. What influences weight management in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?
2. How is weight management facilitated in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?
3. What psychosocial processes impede weight management in persons with first-episode psychosis who are newly prescribed atypical antipsychotic medications?

Chapter 2

Literature Review

2.1 First-episode Psychosis and Schizophrenia

First-episode psychosis is characterized by the first appearance of psychotic symptoms, includes both mood-disorder-associated psychotic and schizophrenia-spectrum presentations, and can occur at any age (Craig et al., 2004; Strassnig, Miewald, Keshavan, & Ganguli, 2007). According to the Diagnostic and Statistical Manual of Mental Disorders-IV-TR (American Psychiatric Association, 2000), the nine formal psychotic disorders are schizophrenia, schizoaffective disorder, schizophreniform disorder, brief psychotic disorder, delusional disorder, shared psychotic disorder, substance-induced psychosis, psychosis due to a general medical condition, and psychosis-not otherwise specified. However, psychotic symptoms are not limited to these diagnoses; psychoses also exist in other disorders such as depression and bipolar disorder (American Psychiatric Association, 2000).

Schizophrenia is a mental disorder characterized by positive and/or negative symptoms persisting for at least six months and exhibits a mean prevalence of approximately 4.5 out of 1000 people in North America (Tandon, Keshavan, & Nasrallah, 2008). Positive symptoms are characterized by hallucinations and delusions, whereas negative symptoms are described as avolition, alogia, flat affect, and anhedonia (Austin & Boyd, 2008). Although individuals can be diagnosed with schizophrenia across the lifespan, the peak age of onset of schizophrenia usually occurs in the adolescent and young adult population, which ranges from 12 to 25 years of age (British Columbia Schizophrenia Society, 2008; McDonell & McClellan, 2007). According to the Diagnostic and Statistical Manual of Mental Disorders-IV-TR, a person receives a schizophrenia

diagnosis if they have actively experienced two or more psychotic symptoms for more than one month, and have exhibited continuous signs of disturbance for greater than six months (American Psychiatric Association, 2000). Treatment, however, often commences with a first-episode psychosis, even though not all persons with a first episode psychosis go on to develop schizophrenia. Nevertheless, early intervention is imperative when psychotic symptoms first appear, as it has been demonstrated to improve the illness trajectory (Drake, Haley, Akhtar, & Lewis, 2000; McGorry, Edwards, Mihalopoulos, Harrigan, & Jackson, 1996; Melle et al., 2004). There is currently no known cure for schizophrenia. Antipsychotics are essential in the treatment of schizophrenia and related disorders and improving the prognosis of mental illnesses (Nasrallah, 2003). Since schizophrenia and first-episode psychosis are often used interchangeably in research studies (Nasrallah, 2003; Schooler et al., 2005), both terms were included in the literature review.

Special considerations should be made when treating acute symptoms and preventing relapses in adolescents and young adults (Schmidt, Blanz, Dippe, Koppe, & Lay, 1995). Treatment and prevention should occur as early as possible since the initial phase of schizophrenia tends to be more active and more severe in the younger population than in adults (Schmidt, et al., 1995). This severity is illustrated by frequent and persistent alternating periods of exacerbations and remission among those with early onset schizophrenia (Lieberman et al., 1998). In addition, the late adolescent and early adulthood years are crucial for social and vocational development (Schooler, et al., 2005). Early-onset schizophrenia in the younger population may display a variety of non-specific behavioural changes affecting development. These behaviours include difficulties in making friends and maintaining social relationships due to antisocial behaviour and social withdrawal, issues with concentration and memory, and poor school performance (Hollis,

1995, 2000). Thus, managing the illness at the earliest point in time when psychotic symptoms first appear positively enhances the illness prognosis and improves patients' health outcomes.

2.2 Typical and Atypical Antipsychotics

Treatment of first-episode psychosis or schizophrenia fundamentally involves either typical and/or atypical antipsychotic medications. Typical antipsychotics, also known as first generation antipsychotics, classical, or conventional antipsychotic medications, include common medications such as haloperidol, loxapine, chlorpromazine, and fluphenazine. Two decades after typical antipsychotic medications were developed, atypical antipsychotics, also known as second generation antipsychotics or nonconventional antipsychotic medications, were also developed to treat psychiatric disorders. Common atypical antipsychotic medications in Canada include quetiapine, olanzapine, risperidone, clozapine, ziprasidone, and aripiprazole. Notably, persons experiencing first-episode psychosis tend to respond to lower doses of antipsychotic drugs and demonstrate a greater therapeutic response compared to multi-episode patients (Lieberman, et al., 1998; Robinson et al., 1999).

Atypical antipsychotic medications have been commonly found to be more effective than typical antipsychotics in reducing negative symptoms and extrapyramidal side effects and to exhibit beneficial effects on depression, medication compliance, and cognitive dysfunctions (Möller, 2000a, 2000b, 2003). In a longitudinal randomized controlled trial by Schooler and associates (2005) comparing risperidone, an atypical antipsychotic, to haloperidol, a typical antipsychotic, risperidone was associated with higher relapse prevention for a longer period of time and less abnormal movements than haloperidol. However, the positive effects of atypical antipsychotics may have been overestimated, since recent reports have illustrated that the side effects include weight gain and metabolic effects. These effects include increased lipid levels and

inducing type II diabetes (Koponen, Saari, Savolainen, & Isohanni, 2002), all of which are risk factors for cardiovascular diseases. The issue of weight gain associated with atypical antipsychotic medications will be discussed in the following section.

2.3 Weight Gain Associated with Atypical Antipsychotic Medications

Weight gain often results due to slowed body metabolism, decreased energy expenditure, and/or an increased caloric intake (Gothelf et al., 2002). The majority of studies found in the literature indicate that 40 to 80 percent of people taking antipsychotic medications experience weight gain (Masand et al., 1999; Umbricht, Pollack, Kane, & Breier, 1994). In general, atypical antipsychotic medications cause more weight gain than typical antipsychotic medications. This difference in weight gain between antipsychotic medications was illustrated in a one-year analysis conducted by Strassnig and colleagues (2007) examining weight in newly diagnosed first-episode psychosis patients and a healthy comparison group. Olanzapine was associated with the most weight gain, with almost a 25 percent gain over baseline weight (37 lb), followed by risperidone (28 lb) and haloperidol (9 lb) (Strassnig et al., 2007). The significance of weight gain in atypical antipsychotic medications was illustrated in a systematic review conducted by Allison et al. (1999) examining antipsychotic-induced weight gain; atypical antipsychotic medications such as olanzapine were associated with an average weight gain of approximately 4.15 kilograms in 10 weeks. Despite the effectiveness of atypical antipsychotic drugs in managing symptoms of psychosis as well as the negative symptoms of schizophrenia, there is a need for early intervention methods to address substantial weight gain that often occurs following initiation of this treatment. The rapid onset of a significant increase in weight can greatly compromise the quality of life for patients prescribed these medications for long periods of time.

2.4 Effects of Weight Gain (Psychological and Physical)

Antipsychotic-induced weight gain is a widespread problem for persons who have experienced a psychotic episode. When compared to the general population, the rates of obesity and overweight are much higher in persons with schizophrenia and related disorders (Allison, et al., 1999). In addition, a review article examining the body mass index in persons with schizophrenia suggests that even before the initiation of antipsychotic medicines, this population exhibits a rate of obesity of two to three times more than the general population (Coodin, 2001). A recent study conducted by Sikich and colleagues (2008) comparing first and second generation antipsychotic drugs in patients with schizophrenia revealed that in addition to weight gain, risperidone and olanzapine, both atypical antipsychotics, were also associated with increased fasting cholesterol, low density lipoprotein, and low insulin levels. Therefore, weight gain from atypical antipsychotics may lead to health issues such as obesity, cardiovascular diseases, metabolic syndrome, and diabetes (Chagnon et al., 2004). Weight gain in this population has also been demonstrated to be associated with detrimental psychological effects such as decreased quality of life, decreased self-esteem, and high rates of self-reported distress (Mastrigt, et al., 2004; Strassnig, et al., 2003; Weiden & Mackell, 1999). Other complications resulting from weight gain include medication non-adherence in this population (Mastrigt, et al., 2004), leading to higher relapse rates (Coldham, Addington, & Addington, 2002; Robinson, et al., 1999), and a worsened long-term prognosis of the illness (Helgason, 1990).

Furthermore, people with schizophrenia have expressed great concern over their weight. In a study using focus groups to explore the views of individuals with schizophrenia about weight gain and weight management, the majority of participants reported that they cared about their weight and physical health and wanted to manage their weight to reduce complications associated

with obesity and to improve their aesthetic appearance (Weissman, Moot, & Essock, 2006). Other studies have revealed similar findings, demonstrating that individuals with schizophrenia valued the importance of weight and weighed themselves frequently (Weissman, et al., 2006) and expressed a desire to participate in activities to lose weight (Loh, Meyer, & Leckband, 2008). Some documented unhealthy measures that persons with schizophrenia have used in an attempt to lose weight included skipping meals, consuming laxatives and/or diet pills, and purging (Strassnig, et al., 2003). Thus, due to the physical and psychological effects of weight gain, managing of weight associated with psychotropic medication use is of great concern for patients, families, and clinicians. As a result, intervention programs have been developed to address weight-related issues in persons with first-episode psychosis and among those who go on to be diagnosed as having schizophrenia.

2.5 Schizophrenia and Obesity

A high prevalence of obesity exists among persons with severe mental disorders, particularly those with schizophrenia or a major mood disorder (Allison, et al., 1999; Dickerson et al., 2006). Body Mass Index (BMI) is a statistical measure of one's weight in relation to one's height (kg/m^2). Obesity, according to the National Institutes of Health, is defined as a BMI greater than 30 and described as an excess in body fat. Central obesity, specifically abdominal obesity, is most commonly reported in persons with schizophrenia (Gothelf, et al., 2002). Aside from weight gain resulting from antipsychotic medications, lifestyle and social factors also contribute to weight gain in persons with schizophrenia. Compared to the general population, persons with schizophrenia have been found to have a poorer lifestyle (Chan & Yu, 2004). This lifestyle consists of limited physical activity, exercise, and poor eating habits (Brown, Birtwistle, Roe, & Thompson, 1999; Gothelf, et al., 2002; McCreadie et al., 1998). Specifically, a study

conducted by Gothelf and associates (2002) revealed that male in-patients on olanzapine exhibited an increased caloric intake and BMI, when compared to patients on haloperidol. The patients who were on olanzapine experienced 27.7 percent increase in their caloric intake in four weeks, with no change in their diet composition of fats, carbohydrates, or protein (Gothelf, et al., 2002). It was also noted in the literature that this population consumed high amounts of sugar (Peet, 2004). Furthermore, studies have related eating habits and obesity (Holmberg & Kane, 1999; Thakore, 2005), with night eating syndrome and binge eating disorder exhibiting a high correlation with obesity (Pull, 2004). Thus, obesity in persons with schizophrenia appears to be a complex issue confounded by multiple factors that are independent of the antipsychotic medications.

2.6 Early Intervention, Weight Management Methods and Outcomes

The purpose of early interventions programs include the detection of untreated psychosis at the earliest point in time to improve the prognosis of schizophrenia and the initiation of phase-specific therapeutic regimens (McGorry, et al., 1996). This notion is supported by Birchwood and associates (1998), who have hypothesized that a critical period exists after the onset of psychosis where a window of opportunity is available to intervene and improve the long-term outcome of the illness. Thus, the aim of early interventions is to initiate secondary prevention interventions during first-episode psychoses before the diagnosis of schizophrenia can be made.

Early intervention methods found in the literature for patients with first-episode psychosis were primarily concerned with improving long-term outcomes related to psychotic and negative symptoms (Bertelsen et al., 2008; Garety et al., 2006; Linszen, Lenior, De Haan, Dingemans, & Gersons, 1998; Malla et al., 2007), relapses and/or hospitalizations (Craig, et al., 2004; Lenior, Dingemans, Linszen, De Haan, & Schene, 2001), and social functioning (Bertelsen,

et al., 2008; Garety, et al., 2006; McCay et al., 2007). The early intervention methods include behavioural therapy (Linszen, et al., 1998), cognitive behavioural therapy (Craig, et al., 2004; Garety, et al., 2006; Malla, et al., 2007; Wragg & Whitehead, 2004), cognitive remediation (Jolley et al., 2004; McCay et al., 2006; Ueland & Rund, 2004), family therapy (Garety, et al., 2006; Lenior, et al., 2001; Linszen, et al., 1998), and psycho-educational programs (Garety, et al., 2006; Malla, et al., 2007; Ueland & Rund, 2004). These therapeutic methods have either been used alone, together, or compared to one another in the research studies. In addition, the aforementioned non-pharmacological early intervention methods are always used in conjunction with a typical and/or atypical antipsychotic medication.

Early intervention to control weight gain is crucial among persons on atypical antipsychotic medications and is defined as therapies, treatments, and/or services implemented at the earliest point in time after the initial presentation of symptoms to improve the illness trajectory and prognosis (Alvarez-Jimenez et al., 2006; Alvarez-Jimenez, Hetrick, Gonzalez-Blanch, Gleeson, & McGorry, 2008). Due to the rapidity of weight gain that often appears after the initiation of atypical antipsychotic medicines, immediate intervention is required for successful weight management (Alvarez-Jimenez, et al., 2006). Currently, however, there are no early intervention studies targeting weight management and/or weight reduction.

Weight management is defined as the maintenance of an appropriate body weight through the balance of weight reduction and weight gain, which can be achieved by regular exercise and healthy dieting. Weight reduction, weight loss, or the reduction of body mass, is comprised of the loss of fat tissue, water, and/or lean muscle. Weight management methods and programs published in the literature include exercise (Archie, et al., 2003; Beebe et al., 2005; Centorrino, et al., 2006), psychoeducation (Beebe, et al., 2005), Weight Watchers (Ball, et al., 2001; Evans, et

al., 2005), and/or nutrition counselling (Beebe, et al., 2005; Centorrino, et al., 2006; Evans, et al., 2005). The length of time these weight management interventions were implemented ranged from 10 weeks to 6 months. Participants were generally included for the study if they had been taking an antipsychotic medication for at least 4 to 12 weeks, had a diagnosis of schizophrenia, and/or exhibited a weight gain of over 7 percent of their baseline body weight. Research, however, has shown limited success with the aforementioned interventions in controlling weight in patients with schizophrenia or in persons who are being treated for psychosis. Notably, a pilot study conducted by Archie and associates (2003) to assess adherence to an exercise program in stable patients with schizophrenia that included a free membership to the Young Men's Christian Association (YMCA) revealed significant drop out rates: 40 percent at four months, 70 percent at five months, and 90 percent at six months. The participants reported that the lack of exercise and poor attendance rates were due to a lack of motivation (Archie, et al., 2003).

In another study, researchers who conducted an exercise program consisting of Weight Watchers meetings and exercise sessions among patients with schizophrenia who had olanzapine-related weight gain suggested that there was no correlation between exercise and weight loss (Ball, et al., 2001). The effect of diet choices and weight change was not examined (Ball, et al., 2001). Similarly, a recent literature review on the effectiveness of interventions for weight management for persons with serious mental illnesses revealed that there is little evidence on the efficacy of psychoeducation programs, or programs including exercise and education (Lowe & Lubos, 2008).

In comparison, persons with other mental disorders such as depression also experience medication-induced weight gain. Antidepressants, despite their efficacy in treating symptoms, have been associated with weight gain (Himmerich, Schuld, Haack, Kaufmann, & Pollmächer,

2004; Kachur, Hannan, & Ward, 2005). Non-adrenergic and specific serotonergic antidepressants and selective serotonin reuptake inhibitors were associated with a weight gain of 1.87kg and 1.83kg respectively in 24 weeks (Su & Tsang, 2006). Although the amount of weight gain caused by antidepressants is less substantial compared to antipsychotics, researchers have suggested several methods and interventions to address this side effect. Some of these interventions include aerobic exercise and the addition of another pharmacological agent, such as a stimulant, H₂ receptor antagonist, buspirone, and/or topiramate (Deshmukh & Franco, 2003; Janicak, Davis, Preskorn, & Ayd, 1997; Masand, 2000). No known studies, however, have presented significant findings using a non-pharmacological method to address antidepressant-induced weight gain.

Moreover, a systematic review conducted by Faulker et al. (2003), evaluating 16 pharmacological and behavioural modalities for weight control in persons with schizophrenia, revealed that only three studies demonstrated a weight reduction of more than five percent. Researchers suggest the need to identify more effective interventions and better delivery modalities for weight management in this vulnerable patient population (Faulkner, et al., 2003; Robbins et al., 2001). Likewise, other researchers suggest that more data is necessary to elucidate the participants' perspective on weight management programs in order to design and develop effective interventions that are satisfactory to the patients (Lowe & Lubos, 2008).

2.7 Psychosocial Processes and Symbolic Interactionism

It is important to understand the psychosocial processes affecting weight management in persons recently prescribed atypical antipsychotic medication to develop a possible theory to explain this phenomenon. Grounded theory focuses on social and psychosocial processes to describe, explain, and comprehend phenomena (Tavakol, et al., 2006). Developing a theory to explain the psychosocial processes influencing weight management among this population will

aid in the development of effective early interventions to address the widespread epidemic of antipsychotic-induced weight gain. Symbolic interactionism is a sensitizing, underpinning theoretical framework frequently used to guide grounded theory studies and emphasizes that human behaviour is formed from human interactions, which undergo a continuous process of negotiation (Tavakol, et al., 2006). In addition, as symbolic interactionism focuses on the meanings people give to their realities, it assists in understanding peoples' definitions of events and behaviors in their lives (Eaves, 2001). Thus, this grounded theory study used symbolic interactionism as a sensitizing framework to provide a perspective on the psychosocial processes affecting weight management when people begin to take atypical antipsychotic medication.

Chapter 3

Methods

3.1 Research Tradition

The purpose of grounded theory, developed in the 1960s by sociologists Glaser and Strauss (1967), is to uncover social psychological processes involved in a situation under investigation. Grounded theory studies focus on social structures and social processes, and aim to use the research to generate one of two types of theories, substantive or formal (Glaser & Strauss, 1967). The objective in developing a substantive theory through a grounded theory study is to elucidate a behavioural pattern that is ambiguous and relevant to the study participants. Grounded theory does not commence with a sharply focused problem -- this emerges during the study. An essential component of grounded theory involves simultaneously collecting data, analyzing data, and sampling participants. Constant comparison is a method used in the data analysis to develop and clarify theoretically relevant categories generated from the data obtained. The steps of grounded theory are iterative; data are collected and categorized, emerging central phenomena are described, and earlier steps are reused. Codes and categories are constantly compared with data elicited earlier so that similarities and differences can be determined, and broader, more encompassing concepts can be developed (Loiselle, Profetto-McGrath, Polit, & Beck, 2006). As data collection continues, the investigation progressively becomes more focused on central processes and emerging phenomena of concern.

The purpose of this qualitative study was to develop a substantive grounded theory to identify psychosocial factors that affect weight management in patients who are on atypical antipsychotic medication following a first episode psychosis. Although the grounded theory

methodology was developed within the post-positivist paradigm, in recent years, a number of investigators have embedded it within a constructivist perspective (Charmaz, 2006). The constructivist paradigm guided this grounded theory study, which is based on the assumption that multiple subjective realities exist (Loiselle, et al., 2006). The constructivist paradigm, provides a general perspective on disciplined inquiry, whereby maximal knowledge is achieved through the interactions between the researcher and study participants (Charmaz, 2006; Loiselle, et al., 2006). Grounded theory based on constructivism examines the reasons for, and the processes of, the way in which participants interpret situations and their subsequent actions in them (Charmaz, 2006). This paradigm includes the notion of relativism – individuals construct multiple interpretations of reality, thus, there is no feasible method to determine the truth or falsehood of such constructions (Loiselle, et al., 2006). Thus, the substantive theory that emerges from the use of the grounded theory methodology is considered to be a construction synthesized from the interpretation of others' constructions of their realities.

Theoretical sampling was adopted; this sampling method involves simultaneously collecting and analyzing data, with the emerging analysis compelling what data are to be collected. The data collected in this study was gathered through semi-structured interviews with participants newly prescribed atypical antipsychotic medications and with persons diagnosed with schizophrenia who had been on atypical antipsychotic medication for some time. The categories that emerged from the analysis of the interviews guided the nature of the data that was sought in the collection process. With theoretical sampling, data collection terminates when repetitive data or no new data are obtained, a phenomenon also known as concept saturation (Loiselle, et al., 2006).

3.2 Study Participants

Participants were recruited from the Heads Up! Mental Health Program at the Hotel Dieu Hospital in Kingston, Ontario. As noted, participants recruited for this study consisted of those who were diagnosed with first-episode psychosis or schizophrenia and were on atypical antipsychotic medications for a minimum of eight weeks. Most participants who were recruited were males. Following the theoretical sampling approach, efforts were made to actively recruit more female participants but unfortunately were unsuccessful. All patients and their family are counselled regarding the side effects of their medication by the health care professionals at the Heads Up! Mental Health Program. The weight management services provided by the Heads Up! Mental Health Program focus on monitoring the patients' health status and educating them on healthier lifestyles. All patients' height and weight are taken at each appointment and a resultant BMI is calculated. Patients and their family who receive weight management counselling are educated on lifestyle changes and provided additional resources, such as the Heart & Stroke "Healthy Habits, Health Weights" brochure for guidance on healthy eating and building an active lifestyle. Various caseworkers in the program also hold monthly health-teaching sessions for patients to attend.

Sixteen participants were interviewed. All lived in the community of Kingston, Ontario. Eleven participants had been diagnosed with first-episode psychosis and had been on atypical antipsychotic medications for less than three years, and five participants were diagnosed with schizophrenia and had been on atypical antipsychotic medications for more than three years. A detailed summary of the participants recruited for this qualitative study is illustrated in Table 1.

Table 1 Demographic Characteristics of Participants

Demographic characteristic	Count (n)	Percentage (%)
Age		

18 - 23	11	68.7%
24 – 29	4	25%
30+	1	6.2%
Gender		
Female	2	12.5%
Male	14	87.5%
Length of antipsychotic use		
Less than 3 years	11	68.7%
More than 3 years	5	31.2%
Antipsychotic medication		
Olanzapine	5	31.2%
Risperidone	4	25%
Other atypical medication	7	43.7%
Education Level		
Post-secondary degree	2	12.5%
Some post-secondary	6	37.5%
High school diploma	1	6.2%
Some high school	7	43.7%
Occupation		
Full-time job	2	12.5%
Part-time job	1	6.2%
Student	6	37.5%
Student & job	2	12.5%
N/A	5	31.2%

3.3 Measurement Methods and Data Collection Approach

In-depth interviews were the major data collection method. Each interview lasted approximately one hour at a convenient location for the participants and was audio-recorded. Basic demographic data were also collected from the participant using an informant data sheet (Appendix A). To ensure confidentiality, each participant was assigned a numeric code, which was used in all documents such as transcripts and audio files to protect the identity of the participant. A non-structured interview guide was used to facilitate the interview process; Appendix B presents the interview questions and general themes that were discussed and explored with the respondents. Interviews were transcribed verbatim after the interview and coded. Memos were also recorded related to the emerging theoretical framework; linkages and relationships of concepts were made. Due to the emergent design of the grounded theory method

and the use of theoretical sampling, interviews were tailored and/or modified as needed as the analysis phase evolved.

3.4 Data Analysis

Data analysis was inductive in nature, using the constant comparative method, which involved comparing and contrasting each component of each person's interview. Data analysis began as data were collected; newer data were compared with previous data obtained during the progression of the study. The interview transcripts were coded according to three levels: open, axial, and selective (Strauss & Corbin, 1990, 1998). Open coding uses codes which are similar to the original data obtained and consists of labeling the raw data. As the study progressed, codes were continuously revised and grouped into broader, more complex categories. In axial coding, data were regrouped in novel methods through drawing connections between classifications using a coding paradigm that consists of context, conditions, action/interactional strategies, and consequences. Finally, selective coding involved establishing connections between concepts. Throughout coding, memos were written to reflect on the codes. Memos related to the emerging conceptual framework were formed; diagrams and/or figures were developed to visually represent the linkages among concepts. When no new data altered the concepts in the emerging theoretical framework, data saturation was achieved and sampling was terminated.

3.5 Ethical Considerations

Participants signed a consent form with information related to the proposed study, detailing the extent of the participants' involvement, and their right to withdraw from the study at any point in time (Appendix C). The consent form also promised confidentiality; participants' names were not shown on any documents associated with them. Participants were made aware that the interview tapes were only listened to by the researcher and would be kept in a locked safe

for up to five years and then destroyed. Ethics approval was obtained from the Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (REB). Thus, it was ensured that ethical informed consent was obtained.

3.6 Rigour and Trustworthiness

Methods used in this grounded theory study to enhance the trustworthiness of findings include: using the participants' exact words in illustrating the findings, and giving contextual details about the participants to provide thick description, constant checking and rechecking the emerging theory with the data obtained from the participants during the analysis, and keeping an audit trail of all coding decisions, and memos of the coding, categorizing, and theory generation (Chiovitti & Piran, 2003).

The process of coding and the resultant conceptual categories carefully reflected the clients' quotations in the interviews, so that the concepts that emerged from the analysis can be traced to the raw data. Using the participants' exact words in the development of the theory aids in supporting the trustworthiness of the analysis (Strauss & Corbin, 1990). Checking the emergent conceptual framework was done by changing and adding questions in the interview guide as codes were developed during data analysis (Chiovitti & Piran, 2003). A continuous process of revising and comparing emerging codes was performed using the constant comparative method and an audit trail was consistently updated to achieve confirmability (Speziale & Carpenter, 2007).

Chapter 4

Findings

A conceptual framework describing the psychosocial processes influencing weight management among persons newly prescribed with atypical antipsychotic medications (Figure 1) was developed through this study. The context for these various psychosocial processes will be described, followed by the conditions that this population experienced and their responses to weight gain. Finally, the consequences of their early responses to weight gain on weight management will be presented. The concepts and linkages between them will be illustrated with quotes from the participants in the study.

Figure 1 Weight Management Among Persons with First Episode Psychosis on Atypical Antipsychotic Medication

4.1 Contextual Barriers of Weight Management

The context for weight management involved the participants' difficulties in accessing resources, their unstructured lifestyle, and others' perception of their weight and weight gain.

Contextual factors were defined as elements in the participants' lives or in their lifestyle that had a substantial impact and influence on their weight management activities.

Accessing resources. In describing the types of resources that were readily available or not available to them, the participants identified several barriers to successful weight management. The notion of accessibility involved two areas: financial and geographical.

Financial limitations were a recurring theme among the participants; many of them did not have jobs, and were unable to afford healthier foods and/or a gym membership. For instance, when asked why he didn't continue with a desired activity, one participant noted, "Yeah, it just, it [recreational sport] just costs so much money. So there's – I was like, "Yeah, whatever", and then, I never got to play again. (4)". Similarly, another participant added,

Well, yeah, there was a while where I'd wake up at 5 in the morning, go for a run, do yoga and pilates, and um... Yeah, I used to work out. I took kick-boxing for a month once. Yeah, I would've kept going with it, but I couldn't afford it, so... (12)

Regarding the burden of expenses, one participant explained, "...uh – cost factor... which, I'm already over running by food, so... any extra cost would just... kinda, tip the scales... a little too far... (10)".

Likewise, another participant illustrated the expenses of healthier foods with,

Sometimes, I mean, it is a little more expensive to build up, like... ingredients, for like, proper meal, um, depending on what it is I mean... you know, sometimes it's just cheaper to buy something premade, and bad for you, than it is to buy... you know, couple pounds of vegetables and a sack of rice, or something to make, you know, a proper meal. (6)

Persons in this population may already have a low income early in the course of the disorder, which affects their ability to afford healthier foods and gym memberships substantially. One participant, when discussing his credit cards, recounted his experience with,

And... uh... when I – when I got sick, I just... I lived off one of them for a month, and then, like, couldn't pay it back, obviously. Um... I had a big overdraft on my bank account that was, like, 500 bucks. Phone bill I racked up to, like, a thousand and 40 bucks. (14)

For some participants, however, with family or advocacy support, expenses were less problematic. Participants in frequent contact with their family or who resided with them had less of a financial burden since their family often covered the costs for their basic needs such as food and shelter. Participants who received support from their professional support networks also had greater access to gym facilities. This was noted in one particular participant who said he went working out every Thursday and bowling every Friday at the local YMCA. When asked how he got in for free, he responds with,

Yeah. Well it's just uh... it's part of the... the social worker that was seeing me, works for the ACT team, right? I'm not part of the ACT team, but I know the social worker who did it – so he got me in there, like – for free. Because he knew me. And I was sick, and... people that are sick can get in free on Thursday, so – (7)

A couple of participants also mentioned that they had been referred to a nutritionist by their psychiatrist, however, it was noted that this was not a service that was offered to all participants. Nevertheless, financial limitations, remained a major barrier to achieving a healthier lifestyle for this population.

Geographical factors, affected participants' ability to access exercise facilities as they did not reside close to these facilities and lacked transportation or found using the public transportation too complicated. The inaccessibility to exercise facilities was further accentuated by the lack of coverage offered by schools for part-time students to access their schools' exercise facilities. For example, one student illustrated geographical inaccessibility by saying,

...I'm not a full-time student, so I'd have to pay for a membership? And then again, um it'd be... like it takes 40 minutes to get to the college? It's still a long bus ride, and what I could probably do is maybe like... you know, go do my classes and then work out? But I

don't know if there's like, really a locker room there or anything like, it's just a small little gym and I don't really – there's no – I don't know, I don't really shower there, I don't wanna work out and get all sweaty, and then take the bus home in my coat and feel all grimy. So... it's, it's mainly a problem of location, I mean, if there was gym like, in 10 minute walking distance from my house? Man, I'd go there – all the time. (6)

The financial limitations and geographical inaccessibility of sports and exercise facilities experienced by the participants in this study created a contextual barrier to weight management strategies. Many of the participants were unemployed and still recovering from a first-episode psychosis or were part-time students with limited financial support. Therefore, limited transportation, access to facilities, and ability to afford healthier foods, were contextual factors that affected weight reduction and management among participants.

Unstructured lifestyle. Most participants' daily lives were unstructured except for a few who were full time students or employees. For those who weren't working or going to school, a typical day for participants involved “hanging out” with friends, watching T.V., and playing video games. When asked what his typical day was like, one participant said,

Well, yeah... wake up in the morning, and... I don't know, I don't really do a lot during the day. Like uh... I'll hop out of bed – help my mom cook, and... I'll help do the dishes here and there and... get the mail and stuff, and... go shopping, and... do my laundry, and... play video games. (7)

Interestingly, regardless of whether one attended school or had a day-time job, participants noted that video games were a component to their daily routine with, “Uh, I eat breakfast... shower... uh, probably go to school... have lunch, and... uh, play video games, like, hang out with friends... have supper... watch T.V... hang out with friends... (11)”,

Um... probably wake up around 7 o'clock, brush my teeth, go to the washroom... um... drink a glass of... s – soy milk? Then, probably head off to class... that's between 9:30 to around... 5:30, sometimes? Uh... might – end up a little earlier, sometimes... go home after around 6 o'clock, 7 o'clock have dinner... uh... write up some notes... uh, play a little bit of game for like, 30 minutes or something... uh, then take the medication around 10 o'clock, head off to bed at around 11. Then usually, wake up at 7 again, and repeat cycle. (10),

and

Um... usually, get up – um... by 8 o'clock – now, to go to school... um... I ride in with my parents, and... drop them off at work... and, then I go to school and have fun... wander two hour long classes... um... then I have some lunch, and... then I go home and... do my homework, or... read a book, or uh... play video games, um... and, go pick my parents up, for around uh... uh, 4:30 or 5:00, and then – come home, have dinner... and, um... either, stay home... uh, or – go to a friend's house... (9).

Many participants reported that the most difficult part for them in getting active was starting a routine and believed that only a strict and structured exercise and diet regime would help with successful weight management. One participant who went to the gym every day for 30 days noted the importance of a routine and what happens when it gets interrupted:

....cause I went to Thanksgiving and I broke the cycle, so I was like, I didn't – I'm a perfectionist at heart, so I don't really care... if there's like, you do 30 days, and I miss a day – what's the point of going the every day after that? You still have that blemish of one day, so it's – it's – it's not perfect anymore, so I'm like, "Ahhh....," that's when I started, faltering, and not going so much... (6)

Another participant commented on the importance of a routine with,

Well, you gotta have a plan. You know, you can't bike, whenever you want, you have to do it every second day, or work out, every second day, or something. You can't just, be like, do it once a week, one once week, and like, four times the next week. You gotta have a plan, so... That's always important. (4)

The issue of being recently diagnosed may have contributed to the lack of structure in their lives and sedentary activities, which subsequently affected their ability to manage their weight. Participants were primarily occupied with recovering and/or coping from their illness, plagued with the fatigue and restlessness during the day, and lacked motivation to construct meaningful plans. As a result, especially for participants who were unemployed and were not in school, the lack of routine to engage in activities and exercise in their lifestyle contributed to their lack of weight management. Concurrently, many participants noted in the interviews that they believed an externally imposed structured exercise routine and diet would be necessary for successful weight management.

Others' perception of weight. The participants' perception of their weight and desire to manage it were influenced by their peers, family, and professional support networks. Both negative and positive views of their weight reduced or lessened their motivation to manage their weight. Many participants received criticism from their social support systems regarding their weight gain. The most common criticism involved their weight gain being seen as the result of a poor lifestyle, such as laziness and consuming unhealthy foods. The main issue for participants regarding others' perception of weight and weight gain was that they felt the problem they faced was not understood and this affected their level of confidence and subsequent desire to achieve

weight management. One expressed his frustration about a friend, who often told him to go lose weight with,

Well it's kind of redundant, I mean... all the time – he's let up a little bit, but... um... I don't know, it's just like... it's hard, for someone, like, for someone who's been overweight, and then someone who's never been overweight, in their life? It's a little, it's a – it's a big difference in – between experiences, so... it's like... someone who's n- n – never been overweight in their life, saying, “Aw! Lose weight!” you know, it's – they don't know what it's like, so, it's a little different. So that's the thing that gets me, like - like I get – not angry, but I'll get like, peeved, when he says that... so I'm like – bring it up and – I don't know. He has pretty good arguments, he's hard to argue against, on that – subject, so... it's not okay – it's not like I know, he's wrong – he's obviously right, when he talks about it. But... you know, it's just frustrating at times. (6)

Others' criticisms about their weight gain often had a negative and discouraging effect and deterred participants from trying to manage their weight. One client illustrates this when asked about her most frustrating experience with her weight with,

Well when I first got out of the ward, uh – when I was like, 17, I gained – 40 pounds. Previously I had a stick figure – like – I was like – 105 pounds – 110, something like that, and uh... I got out and I ran into an old friend of mine, she's like, oh! [client's name], are you pregnant? And I was like – shhh – I was like – no... and she's like, “oh, you're just getting fat, eh?” (12)

This participant also noted that she was always asked if she were pregnant by her peers from her school, which frequently upset her, since she was previously “stick skinny”.

In contrast, several participants had received positive reinforcement for their weight gain from others. This was illustrated by one participant, who described what others have said to him: “My face is a lot fuller... I just looked, like, a lot healthier in general. Even my friends say that I look bigger – like bigger. (14)”. As a result, no weight management activities were carried out due to the influence of the participants’ peers and/or families, who perceive their weight gain as a positive attribute.

4.2 Facing Limiting Forces

A number of conditions experienced by participants limited their ability to achieve weight management. These included rapid weight gain, insatiable hunger, and a lack of motivation boosters.

Rapid weight gain. All participants experienced a degree of rapid weight gain following the initiation of antipsychotic medication regimen; participants reported that the weight gain was primarily on their face and abdomen, which for most, had greatly affected their self-confidence and perception of body image. A young adult commented on the magnitude of weight gain with, “I came here, he [psychiatrist] put me on uh, Quetiapine, or Seroquel, its other name, and... I went from about 145, 150 pounds... to... 210, 215 in about two or three months. (3)”. Another participant further illustrated this point: “Well, I – I – it kind of happened real fast eh? So I’m kind of used to it now and, I didn’t even really notice it when it was going on but... I eat well, so that’s good. (5)”. The latter quote illustrated that the fundamental issue with the weight gain being instantaneous, left the participant with a very narrow window of time to recognize the need for weight management. In addition, participants were often unprepared for the magnitude of weight gain. Although participants were informed of the antipsychotic-induced weight gain and advised to engage in activities to counteract the effects, they were often taken by surprise. One

participant in particular even expressed that he was not aware that his medications would cause weight gain, or any of the negative side effects associated with the medication.

Insatiable hunger. All participants also identified an increase in appetite. One participant in particular described himself as having a “bottomless pit” stomach, where he could continuously eat but never reach a feeling of fullness. Likewise, another noted,

But like for Olanzapine, it was, like I was hungry nonstop. Like I had... seven heaping plates of pasta and I'm still starving. Like, like, there was no end to my appetite, so... It was kind of like people were watching me “No (patient’s name), can’t eat anymore”, so...

(1)

One participant even confessed,

Like, if they [patients with anorexia] ordered a pizza, a sub, or something – they wouldn’t eat it – it would just be chillin’ there, so the - the nurses would put them back like, in this big tray... uh, cart - wheeling thing, so like after when I saw it I’d go in and take some and eat it – I was hungry! (4)

Some had made a conscious but unsuccessful effort to curb their appetite, in order to control their food consumption. One participant, who described his experience of curbing appetite as “shrinking his stomach”, commented,

But lately, like this past week, like I – I didn’t feel good - went – a couple days, so I didn’t eat much those two days, and my stomach shrunk, and now I don’t eat as much... so I was waiting for that to happen... (6)

Similarly, another explained, “I felt like I had like bottomless pit stomach, where I could just keep eating... (8)”.

Their insatiable hunger was related to grazing, where participants would snack frequently on high calorie foods, particularly at night, with some of these snacks being meal-portions. One participant who described his midnight snack as “the second supper” explained,

Because I get hungry, you know... like I'll eat supper around 5 or 6... or 4:30, or – whatever... and I get hungry later. Like... four, five hours later, I'll get hungry again, and... and then I'll eat... right before I go to bed. (7)

Likewise, another participant said, “Sometimes I snack at night because I'll get hungry around eleven or midnight, so I'll eat... like ah... chocolate bars, um... chips, uh cookies... Like anything you can really snack on, I guess. (3)”.

The contextual factor of living alone and having an unstructured schedule was also related to grazing, as one young adult commented,

When I get hungry, it's not usually a certain time? Um... no, it's just whenever, whenever I get hungry, I mean... sometimes, I won't get hungry till 9 o'clock? Sometimes I'll get hungry at 5 o'clock, it's really just when I'm hungry, it's – the flexibility of living by yourself, or not with your parents I should say... (6)

Moreover, when asked what the hardest part of controlling weight was, one adolescent reported, “Um... just the snacking, really... I find – um... I always wanna snack, like... it's just hard for me to... let go of that feeling, so... that's really hard I think... (9)”. The problematic issue of grazing and craving for food was also illustrated in this participant: “But now, it's like, the slightest thing gets me going and it's, I have to, I have to settle it or I can't... you know, get comfortable doing something one, one way or another? (3)”. One participant compared grazing to the effects of Olanzapine and smoking marijuana by saying,

Well you – you know, I go for that full feeling, that’s what I like, you know, I don’t want like... to me I think... eating is such like... it – it’s not unnecessary, but it’s such like... I don’t need – food... if I didn’t have to eat, and just like, lived, and... food wasn’t a problem, I mean, that’d be like, less distractions, you know? It’s just like a... it’s just like a chore, you know? To have to eat, and all this stuff, it’s – I don’t know, it’s hard to really explain... but... you know, it’s – like you get hungry, it’s like it’s – it’s suffering, you know? You’re – you get hungry, you have to eat, and you’re bleh... I just don’t like it. Um... but I mean, you are constantly hungry, and you’d eat, and be like, you know, someone who smokes pot all the time, like, you know, they smoke pot, they get the munchies, it was like Olanzapine was giving you the munchies. (6)

Lacking motivation boosters. Participants were all quite knowledgeable about healthier food choices and options to increase their level of activity. As one said, “I don’t need someone to go okay, look you – you should eat an apple instead of a hamburger, you know, it’s – it’s – it’s pretty obvious what I should be eating. (6)”. Their desire for a lifestyle change was also quite high. Another explained, “I still wanna – I’m still motivated to get in shape and – um... be healthy... because that’s really important” (8). Participants reported, however, that they lacked sufficient motivation, and would only be stimulated to manage their weight if a peer or family member were involved. A participant explained the motivation issues with,

Sometimes it’s... it’s uh, you gotta kind of force yourself into it. You know, you gotta like... you know, a lot of people get lazy and want to - like they’ll like talk themselves out of doing it. So sometimes you gotta find the motivation or the will or whatever. (4)

When asked what he thought would be helpful, an adolescent participant commented,

Um... Motivation, definitely... Like if I had someone who was pushing me or whatever, you know, in a good manner like... you know, get out of the house... [inaudible] to the gym, working out, working out with him... spotting each other, that'd – that'd be motivation, as soon as we notice in each – in each other that we were putting on muscle or something, like when someone tells you that, that makes it all... kind of worthwhile eh... (5)

Many, who had received weight management support from others, tended to thrive on positive encouragement as well as on the reinforcement they received when there was an improvement in their aesthetic appearance.

Some participants specifically commented that having a friend or a group to go with, would help increase motivation, as illustrated by,

Yeah, it's good to have someone to go with, someone – it's more motivating, um... 'cause when you're by yourself, you're just like – uh... it's kind of a drag... but um... being um... having a friend to go with really helps... (8)

Another stated:

Well – I think, it has a lot to do with, motivation, like – if you know you're going to a – a group, that's going to work together, for weight loss... that's – that's pretty motivating I would say... um – I would probably go to that... and I can see why after it's done, why people gain the weight back, is – is because – they're not motivated to do it on their own, and I think that comes along with um... being diagnosed with, um, a mental illness is, sometimes – you don't, feel like – feel like doing much of anything? And uh... I guess it's just – everyone – to everyone's own... they just need to... figure it out for themselves I guess, and... I – I – it could be really hard, I – I – I think, so... (9)

4.3 Responding to Weight Gain

Participants identified five major strategies to deal with their weight: discontinuing medications, choosing lower calorie foods, using walking in daily activities as exercise, accepting the weight gain, and trying and giving up.

Discontinuing medications. Some participants, in response to the rapid and immense weight gain, discontinued their medications to control the process. Unfortunately, they experienced relapses and were admitted to the hospital, and subsequently complied with taking their medication to prevent future hospitalizations. One participant illustrates this experience with,

Um... and I, started gaining weight in the hospital, like, it was apparent, like people were telling me and I noticed it myself, and it was, pretty bad... and then like, I had all these nice new pants, and they were like – really small sizes and everything, and then I gained all the weight – my weight I lost before my hospitalization, I went, from like 160, to like, 210 or 200... in like a very short amount of time, and then I'm like – I'm like, "Screw this," I stopped taking my medication, I didn't – I didn't like any weight... or lose much. Um, and then... uh... my – my recent hospitalization, I – you know – I'm like, "Okay, I better take the medication 'cause I don't wanna, go in the hospital again – it really sucks..." and I gained like, a hundred pounds... over a year. (6)

Choosing lower calorie foods. As noted, participants enjoyed eating a lot of fast foods and instant meals that were particularly high in fat content and calories. Rather than changing this pattern, they opted to "cut corners" elsewhere, such as limiting the amount of sugar in their tea or choosing low-fat options for salad dressings. When a participant was asked if and how he managed his weight, he expressed,

No... but *now* though, like... like I drink a lot of tea and coffee [*inaudible*] – like, these days... like I don't know, I'll have – probably have like... 5 or 6 cups of tea or coffee a day... and I used to put like... two teaspoons of sugar in each cup, now I only put like, one heaping, so I try to cut that – cut the sugar out, eh? 'Cause that stuff kills ya... but... yeah so... yep! Just trying to... little things, and... what that thing, you know? Every little thing counts, and every little thing helps, so... (7)

Likewise, when asked if there was anything he'd like to say about weight and weight management strategies, another participant added,

“Oh! I know, I have one good – thing. If you're drinking like, Coke and Pepsi, all that crap? Try drinking the diet stuff... even if it's bad – worse for you? I mean, there's no calories in it... I mean, I went from drinking like, Coke and Pepsi and... all that stuff, and then I started like... drinking the diet stuff? And then, you know, it wasn't as good at first, but now I can't – I prefer it over the... the sugary stuff. (6)

Using everyday walking as exercise. All participants considered using the walking they did in their daily lives as a primary mode of exercise to manage weight, such as walking to and from work or school, or during the day time when they were completing errands. None actually engaged in an exercise routine. For instance, one participant describes his exercise routine by saying,

...I'm not really much of a dieting person... um... I – I'm pretty weight conscious though, like I don't want to get fat... 'cause that would – really not be good... um... but I usually just... eat till I'm full... um... um, I usually exercise too, as much as I can... um... like I like walking, that's my favourite thing to do, I – I just go on walks randomly sometimes... um... I haven't gone to the (gym) yet, the gym? (8)

Accepting weight gain. Although most wanted to lose weight, some participants accepted it. Specifically, several participants reported that although their weight gain was not ideal, they didn't perceive it as an immediate threat; their foremost focus was on recovering from their illness. For example, one participant describes his thoughts on weight gain with,

You gotta be able to live with it, you know..? Like, so... how I deal with it is... I don't deal with it, so... it – if I can start going to gym, I start going to the gym, so... but uh... yeah... basically just, if you're alright with it then... you're alright, right.? Like it doesn't bother me too much, like I can stand or – stand up for like, the longest time, so... it's not like it's weighing me down too much. (5)

Trying and giving up. A few participants had actually taken measures to participate in weight management activities, but, unfortunately, had been unsuccessful with their goals of weight reduction or management. One adolescent who had given up on going to the gym noted her difficulties in losing weight with,

It's nice to be able to weigh yourself, and uh... do some yoga exercises at home. But uh... I don't think I really made much progress with losing any weight, though... um... I'm just – stayed around the same... same – uh, in the 150's area... so um, having a bit of trouble losing weight. (9)

It was noted that participants who had made efforts to manage their weight often couldn't maintain the activities or found that it was ineffective and gave up.

4.4 Weight Management Inaction

The participants' efforts to respond to their weight by discontinuing their medication, choosing reduced calorie foods, using walking in daily activities as exercise, accepting their own

body image, and trying but giving up had been ineffective. The outcome for participants was that they achieved limited weight management.

Although most participants expressed a desire for lifestyle changes and had the knowledge base to adopt a healthier lifestyle, they had been unable to achieve weight management. The consequence was they either continued to contemplate initiating a weight management regime without doing so or were not trying to manage their weight.

Contemplating weight management. Many participants continued to contemplate getting into an exercise or diet regime; they were interested and were aware that they should be making healthier changes to their lifestyle. One participant mentioned his desire to experience the long term effects of leading a healthy lifestyle:

Oh, if you feel good, like I guess like, the older you get, the better you feel when you're working out, you know?... kinda thing, like... 'cause there's like a, I guess he was like, "Do I look 50?" Like he – we were, cancelling our things 'cause we couldn't get there anymore eh? But he, he worked there, and he was 50 years old, and he was asking us if he looked 50, and he did not look 50... 'cause he wasn't – he was... going to the gym and he was – ah, in good shape and stuff, so... definitely, he - he was, doing good for himself, so... I definitely should hit the gym sometime, so I – I – I do feel good, when I'm at that age so... (5)

Not trying. Although, as noted, the majority of participants were aware that they should be making healthier choices for their lifestyle, some had given up and no longer tried to manage their weight. Others accepted their current weight as a natural course of their illness and its treatment and did not perceive it to be a high priority to be dealt with because it had not posed any threats to their health, or had given up on weight management. For example, one participant

believed that the weight gain was solely due to his medication, and not attributed to his increased appetite and sedentary lifestyle. When asked if he had changed his lifestyle after noticing rapid weight gain, he explained, “Nah, nah, I didn’t do anything... I mean, I didn’t change anything. (6)

It was identified that a multitude of barriers exist for this population of first-episode and chronic schizophrenia participants. Although facilitators such as social support and participant advocacy can be put in place to reduce the stressors that these participants face on a daily basis, more emphasis and focus is needed to target the specific contextual factors, conditions, and responses that were found in this study. In particular, it was revealed in the interviews that these daily challenges range from disruptions in activity, as illustrated by the participants’ sedentary and unstructured lifestyles, to rapid weight gain, that occurs as a result of low activity level and increased appetite. Such factors are not only disturbances that participants report very little control over, but are detrimental to their illness trajectory and health as well. The factors contributing to the lack of, or limited weight management, were illustrated in the interviews with factors such as a knowledge deficit and lack of social support. As such, it was also revealed that most participants were contemplating or had contemplated weight management, and therefore, positive reinforcement, behavioural interventions, and increased psychoeducation in the earliest phase hold potential to substantially improve weight management in this population.

Chapter 5

Discussion

This chapter will discuss the study's key findings in relation to current literature on this topic, expose study limitations, provide the implications for nursing practice, as well as present areas for future research.

To my knowledge, this study is the first to examine the psychosocial processes of weight management among persons newly prescribed atypical antipsychotic medications. Most participants in this study experienced some weight gain. Although the exact percentage of weight gain was not measured, most desired to lose weight, and many knew what a healthier diet and/or lifestyle entailed. However, despite participants having relatively good knowledge about diet and exercise and wanting to make lifestyle changes, their efforts to do so were limited by the many challenges they faced. Some of these challenges and barriers included inaccessibility to exercise facilities or healthier food options due to financial and/or geographical constraints, insatiable hunger, and lifestyle habits. A couple of barriers related to accessibility were addressed by the participants' case worker through the provision of a complimentary gym membership or referral by the participants' psychiatrist to a nutritionist for further follow-up and diet-planning. Furthermore, due to the fact that most participants in this study had recently experienced a first-episode psychosis, they were primarily concerned with rehabilitating or "getting themselves back on track". As a result, weight management was less of a priority at this point in time. Nevertheless, weight and weight management are particularly sensitive issues among this adolescent and young adult population and represent an area that needs to be addressed in early intervention programs.

Facilitators that emerged from the participants' interviews were related to social support from the participant's professional networks, peers, or family, education, and the implementation of a structured lifestyle and regular routines. Most participants reported that having a friend or family, who could participate or be involved in an exercise regime with them, would be a great source of encouragement and motivation to increase their activities. Whilst the majority of participants were aware of the changes they should make to manage their weight, many actually wanted more in-depth knowledge about the mechanism of weight loss, such as the processes involved in building muscle mass. Related to a gap in knowledge about effective weight loss techniques, participants also desired a strict and structured exercise and diet routine set by a professional to help them stay focused and to provide guidance.

Interesting barriers that emerged in the analysis included: a few participants enjoyed the medication-induced weight gain and many played sedentary video games for long periods of time. The few participants who enjoyed their weight gain were previously thin and had received compliments about their improved aesthetic appearance with the weight gain, and almost all participants played video games on a daily basis. Playing video games appeared to be linked to the unstructured lifestyle most lived and may have encouraged them to engage in a "fantasy world" and erode motivation for weight management activities. Playing video games is also a sedentary activity with minimal opportunity to "burn" the calories.

5.1 Related Literature

The following section will present recent literature that relates and contradicts this study's findings. Novel findings that have not been previously found in the literature will also be discussed.

Current literature on weight management among persons newly prescribed atypical antipsychotic medications is highly limited. However, research on antipsychotic-induced weight gain suggests that it affects medication compliance, poses severe health risks, and is poorly managed among patients with schizophrenia (Green, et al., 2000; Kendrick, 1996; Sernyak, et al., 2002). Congruent with these findings, the impact of weight gain influenced some participants to stop taking their medications to lessen the effect. Some participants in this study also reported that they were at risk for health problems as a result of their weight gain, with increased cholesterol levels, increased low-density lipoprotein, and high blood sugar.

For health professionals, weight gain may appear to be an acceptable side effect of antipsychotic medication when the treatment of psychotic symptoms is a priority. Although many participants in the present study were informed of the potential weight gain associated with their medications, they were unprepared and uninformed about the magnitude and rapidity of the weight gain. In addition, weight gain was distressing to most of the participants and affected their self-esteem, confidence, as well as contributed to health risks, as was seen in other studies (Mastrigt, et al., 2004; Strassnig, et al., 2003; Weiden & Mackell, 1999). A recent meta-analysis and systematic review conducted by Alvarez-Jimenez and associates (2008) examining non-pharmacological management of antipsychotic-induced weight gain in persons with first-episode or chronic schizophrenia supports this claim by recommending that weight management should be a priority. Specifically, weight management should be a preventative measure and introduced in the earliest phase of pharmacological treatment. This was noted in a randomised-controlled trial included for the review, which revealed a greater weight reduction when the behavioural intervention was implemented earlier rather than later to routine care (Alvarez-Jimenez, et al., 2006). Further supporting these findings, participants in this present study reported that the most

substantial rapid weight gain was experienced within their first year of being prescribed atypical antipsychotic medications before their weight stabilized with few fluctuations. This rapid weight gain supports the implementation of an immediate weight management intervention that takes into account an unstructured lifestyle, access issues, and the need for external structure and external motivation boosters. Thus, not only does the literature support that weight management is important, it also suggests that weight management should be incorporated into early intervention programs at the earliest phase possible, to assist in counteracting the major effects of weight gain immediately after the initiation of medications.

The involvement of the participants' family or close peers appeared to be a facilitator to weight management in this study. Most participants reported that if someone in their family or a close friend were to partake in an exercise program or diet regimen with them (identified as a "motivation booster" in the theoretical framework), that their compliance with the modality would increase substantially. This piece of information has not been identified in previous studies and may provide a useful recommendation for program developers. Moreover, it was also noted that participants who received some form of participant advocacy by their case workers or psychiatrists were more likely to be provided with services such as nutrition counselling and complimentary access to exercise facilities (a concept noted as increased accessibility). Despite that, researchers note that a common barrier to physical activity among persons with mental illnesses is a lack of social support (Ussher, Stanbury, Cheeseman, & Faulkner, 2007). Nevertheless, a report by the Schizophrenia Patient Outcomes Research Team (PORT) in 2009 on psychosocial treatment recommendations highlighted assertive community treatment, supported employment, family-based services, and weight management as pertinent areas that need to be addressed. It is important to recognize that weight management is a great concern for persons

who are on atypical antipsychotic medications despite the lack of motivation to carry out weight management activities.

The participants in this study were knowledgeable about a healthy lifestyle and eager to learn more if they had the opportunity. Some were particularly eager to learn more effective techniques to successful weight loss. This enthusiasm was also found in a study conducted by Archie et al. (2007), which revealed that 68 percent of participants desired and were prepared to modify their diet and 54 percent were prepared to increase their level of physical activity, higher than what the researchers had anticipated. Consistent with these results, several focus groups conducted by Weissman and colleagues (2006) among persons with schizophrenia and schizoaffective disorder on their perspectives of weight and antipsychotic-induced weight gain revealed that these participants had similar concerns regarding weight gain to that of the general population. These participants reported apprehension about their appearances and health as a result of weight gain and expressed the challenge of adhering to a diet and exercise regimen (Weissman, et al., 2006). Moreover, similar to reports given by the participants in the current study, the Schizophrenia PORT acknowledges the need for psycho-education with a focus on nutrition counselling, portion control and calorie intake, goal-setting, consistent weigh-ins, behavioural self-management, diet and lifestyle modifications, and self-monitoring of daily food intake and level of activity. Specifically, participants in the present study were interested in knowledge beyond what is commonly known; participants wanted to learn effective exercise techniques as well as the physiological basis of the weight loss process. This suggests that participants in this population not only desire for proper nutrition and exercise, but are also motivated to develop a deeper knowledge base relating to the topics. These findings support previous research postulations regarding participants' perceived barriers, however, it also offers

insight into some of the specific barriers, as well as possible ways to address them, which are presented in a later section on the implications for nursing.

Related to the aforementioned topics of psycho-education and social support, the participants' reports suggested an interesting interplay between these two factors. Many previous studies using a weight reduction technique have been successful during the trial, but unsuccessful, post-completion of the study (Faulkner, et al., 2003). In essence, participants were able to maintain a strict and structured exercise and/or diet regime during the study, but did not continue the intervention once the study was complete. Participants in the present study have provided a possible solution – they opined that a stringent exercise and diet routine implemented by their professional support system would increase the likelihood of compliance to the regimen. Some participants specifically reported that their unsuccessful weight management was a result of their knowledge deficit; they were unaware of what they should do to increase their level of activity or to begin a nutritional diet. Others commented that they rested their faith in their professional support systems, as they had the knowledge base and resources to help them change their current lifestyle habits. Interestingly, it was noted in a study by Daumit and colleagues (2005) that persons with severe mental illnesses such as schizophrenia or an affective disorder were more likely to report walking as their primary form of physical activity compared to the general population. Similarly, walking was also noted in the present study to be a common mode of exercise for the participants interviewed. Researchers suggest that future programs involving weight reduction interventions should use strategies to increase walking in this population (Daumit et al., 2005). It is anticipated that using walking as an intervention bears potential to increase participation, adherence, and greater physical activity in this unique population.

In summary, some findings presented in the theoretical framework support findings in previous studies. Rapid weight gain and insatiable hunger were noted in a study by Kurzthaler and Lfeischhacker (2001), who examined antipsychotic-induced weight gain. Their results revealed that 20 percent of patients gained over 10 percent of their baseline weight in 10 weeks after being prescribed antipsychotic medications and described increased caloric intake as one of reasons for the quick onset of weight gain (Kurzthaler & Fleischhacker, 2001). Participants also yearned for motivation boosters in the form of social support and desired to change their current lifestyles, characteristics that have not previously been identified in the literature. Furthermore, the findings from this qualitative study highlight the complexity of weight management among this population. Weight management issues necessitate further understanding and need to be addressed within a more comprehensive understanding of the activity and lifestyle disruptions that occur in the wake of psychosis.

5.2 Study Limitations

Since weight and weight gain are highly sensitive issues and are frequent topics discussed in the media, this knowledge may have influenced the participant's responses in this study. In addition, awareness that they were part of a research study may have influenced how participants described their behaviour, leading to biased findings (Loiselle, et al., 2006). The sample was recruited at a single hospital, and comprised of predominantly male young adults (N=14 male, N=2 female). Although the aim of this study was to achieve theoretical sampling, some limitations were present, which involved the lack of success in recruiting female participants. The gender differences in the age of onset may have affected the number of females recruited for this study. The peak incidence is more predominant for males in the young adult population, specifically, 3 to 5 years earlier than for females (Gureje, 1991; Loranger, 1984; Messias, Chen,

& Eaton, 2007). Häfner (2005) investigated the gender differences in schizophrenia and reported that the mean age of onset was found to be 26.5 years for males and 30.6 years for females. These findings are similar to the results of a 10-country study conducted by the World Health Organization, which revealed a mean onset of 26.7 years for males and 30.1 years for females (Hambrecht, Maurer, Häfner, & Sartorius, 1992). Nevertheless, the few females recruited for this study may have limited the transferability of the findings to the general population of patients with schizophrenia and thus, further research may be warranted to compare and contrast the experiences of males and females to increase the applicability of the findings.

5.3 Nursing Implications

Nurses play a significant role in the prevention, treatment, and rehabilitation of illnesses. The nursing scope of practice includes a variety of health promotion activities to positively influence the physical and psychosocial health outcomes of patients with schizophrenia. Mental health nurses can greatly contribute to the effective management of patient's weight during, and/or after, their hospital stay (Speck, 2002).

Early intervention weight management programs to assist persons on atypical antipsychotic medications should address some of the contextual factors and conditions affecting weight management in this population. Researchers and/or program developers need to bear in mind that interventions should be implemented immediately due to the rapid onset of weight gain. Moreover, consideration and sensitivity should be taken regarding the complexity of the issues related to accessing resources, need to boost motivation with external support, challenges of the insatiable hunger from the medications, and physical developmental level, particularly of adolescents, who were illustrated in this study to be accustomed to their own food choices.

Several recommendations will be given below in an attempt to address the challenges revealed in this qualitative study.

Accessibility may be addressed by providing complimentary or discounted gym memberships, bus tickets and/or a carpooling system for those with limited transportation, and coupons and/or vouchers for local food markets. It is essential for health care professionals to educate and inform patients about the difference between healthy and unhealthy weight gain. Specifically, research has indicated that a weight gain of more than 7 percent in persons with schizophrenia is considered significant and warrants clinical intervention (McQuade et al., 2004; Strassnig, et al., 2007). Participants in this study indicated a preference for a strict, externally imposed and supported structured routine. Due to the lack of routine present in many clients' daily activities, implementing a regular schedule of healthy meals and activities at specified times may be helpful. For example, clients can be enrolled in diet programs that provide helpful suggestions for simple and affordable meals, such as Weight Watchers, and/or signed up for league sports at local community centres to allow participants to have regular practices and exercise.

To counter the internal forces faced by participants of rapid weight gain, psycho-education as an early intervention to promote the immediate implementation of a healthy lifestyle regime may reduce the amount of weight gained. Similarly, it was noted in this study that insatiable hunger was common amongst the participants and was often difficult to control. It may be helpful for health care professionals to educate and forewarn clients about the potential effects of the medications and subsequent increase in appetite, as well as advise participants to record their food intake in a 24-hour food recall diary to keep track of their daily meals. Nurses and others who work in healthcare can influence the success of interventions by advocating for their

patients and involving the patient's immediate family and close peers in their care. It was noted in the interviews that participants desired the company of people they are close to and believed that with their support, the likelihood of successful weight management would increase. Thus, rather than limiting the weight management intervention to participants prescribed atypical antipsychotic medications, involving the participant's immediate family and/or peers may increase the success of the early intervention programs in the long-term as measured by weight reduction and the continuation of activities. Finally, although most participants had a good general knowledge of lifestyle factors affecting weight, they desired more in-depth knowledge related to effective techniques. Thus, professionals in the healthcare field can address this gap in knowledge by further educating participants and providing the necessary resources to address this knowledge deficit.

It is also important that the five strategies participants used in response to weight gain be recognized (stopping medications, choosing selected lower calorie foods, using everyday activities as daily exercise, accepting weight gain, and trying but failing) when treating and/or developing weight management programs for this patient population. Health care professionals need to be mindful and sensitive to the impact of weight gain for this population, particularly those who are newly diagnosed and are within the adolescent and young adult age range. Being aware of the actions that these participants may potentially perform may also provide deeper insight on a more successful treatment and subsequent success of the participant's management with the mental illness. For instance, the act of discontinuing medications due to the medication-induced weight gain is a serious issue that needs to be prevented to avoid relapses and hospitalizations of patients.

The findings from this study provides preliminary knowledge that may be used in developing an early intervention involving exercise and education among adolescents and young adult patients who are newly prescribed atypical antipsychotic medications. The results from this study may also provide a “stepping stone” for larger studies in the future and a source of information for other research to provide greater research-based evidence on this issue.

5.4 Future Areas for Research

The findings from this study provide directions for future areas of research. Although no significant differences were found in the experiences reported by the female participants interviewed for this study, they described the impact of weight gain differently using terms, such as being mistaken for being pregnant or feeling frustrated when shopping and having to buy clothes in a larger size. Further research comparing the experiences of weight gain and weight management between males and females may provide information to tailor early intervention programs for the unique needs and experiences of each gender.

Focus groups among this population to gain insight into their “ideal” weight management program would be useful for researchers/and or program directors interested in designing a weight management and/or reduction intervention. With this information, piloting an early intervention program targeting weight management for newly diagnosed persons would be helpful to determine the efficacy and success of the strategies before implementation in the clinical setting and/or conducting the intervention on a larger scale.

Chapter 6

Conclusion

This study examined the processes of weight management among persons newly prescribed atypical antipsychotic medications. The results of the study further understanding of weight management in individuals with a first episode of psychosis and provide insight into the many challenges faced by this vulnerable population in responding to medication-induced weight gain effectively. A key finding noted was that participants were knowledgeable about what a healthier lifestyle should be, even though their efforts to manage their weight were ineffective. Many associated their weight gain with their medications, and some discontinued taking their medications to control their weight gain. The consequence of their initial responses to weight gain was weight management inaction. They either contemplated ways of addressing their weight without putting them into effect or had decided not to try to manage their weight. The knowledge gained from this study, specifically, the contextual factors, internal forces faced, early responses to rapid weight gain, and consequences for weight management, should be considered in future studies involving weight reduction interventions for this population to improve their success.

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Appendix A

Informant Data Sheet

Code:

Date:

Age:

Gender:

Primary Psychiatric Diagnosis:

Other:

Medical Diagnoses:

Current Antipsychotic Medications:

Past Antipsychotic Medications (if relevant):

Current Weight:

Current Height:

Documented Weight Change (if available):

Education Level:

Present Employment Status/Occupation:

Appendix B

Interview Guide

1. Tell me about your typical day.
2. If you go to early intervention services, what would you change?
3. Tell me about your experiences with weight and weight management.
4. How has weight influenced your life?
5. Are there people involved with your weight management?
 - a. How have people helped you?
 - b. What have they done that was helpful? Not so helpful?
 - c. Have you discussed the issue of weight gain with antipsychotic medications with your psychiatrist?
6. Tell me about your weight now compared to prior being diagnosed.
7. How satisfied are you with your weight? Why? Why not?
8. What measures/activities have helped? Which measures/activities have not helped?
9. What do you think would help you control your weight more effectively?
10. What do you think is the hardest part of controlling your weight?
 - a. Which of these do you think are changeable? Not changeable?
11. What kinds of medications are you currently taking to control your symptoms?
 - a. Are you taking any other medications?
 - b. Are you taking all of your medications regularly?
12. Do you have anything else you'd like to say about your weight management strategies?

Appendix C

Consent Form

Researchers: Sarah Xiao, BNSc, RN – Masters of Science candidate at Queen’s University. 613-533-2668
Cynthia Baker, RN, PhD – Academic Supervisor. 613-533-6000 ext. 75323.

Introduction: I am a Registered Nurse and a Master’s student at Queen’s University. This research study is part of the requirements for my degree. I would like to invite you to participate in my research study, which is focused on potential weight gain among individuals who are on atypical antipsychotic medications.

Before agreeing to take part in this research study, it is important that you read all of the following information. It includes details that I think you need to know to decide to wish to take part in the research study. If you have any questions, please feel free to discuss them with me or anyone else that you choose. You should not sign this form until you are sure you understand the information. All research is voluntary and you have the right to leave the research study at any point.

Purpose of the Research: You are invited to participate in this research study because you are taking atypical antipsychotic medications.

Weight gain is a risk with taking antipsychotic medications. In this research study I would like to talk with you about your weight and how it affects your life. My interest is learning from you what processes have helped or have not helped in your experience with

weight.

Description of the

Research:

If you agree to participate in this research study:

- Your current care will not change.
- You will be asked to attend one interview with Sarah Xiao that will last a total about 1 hour. The 1 hour can be split up into sessions depending on how long you feel comfortable talking. The interviews will be scheduled at a time and place that is convenient for you and Sarah.
- The interviews will include questions about your weight and your lifestyle.
- Your clinical record may be used to gather information about you and your medications.
- Sarah Xiao, with your permission, will audiotape the conversation and may make some notes.
- Up to 20 people at the Heads Up! Mental Health Program will participate.
- You can decide not to answer any questions or can withdraw from the research study at any time without giving an explanation.

**Potential Harms
(Injury, Discomforts,
or Inconvenience):**

There is minimal risk, but the conversation might touch on sensitive issues around your weight and make you uncomfortable. You can choose not to answer any questions that make you uncomfortable.

Potential Benefits:

You may not get anything out of participating in the research study. However, you will be contributing to nursing knowledge.

**Protecting Your
Health Information:**

I will use the information to understand how you experience your weight. Your interview will be assigned a code. All the information will be grouped together with no names and nothing will identify you. Only Sarah and her supervisor Dr. Cynthia Baker will have access to the audiotapes interviews and they will be kept in a locked filed cabinet in the research office at the Queen's University School of Nursing.

This information will be published in my thesis and there may be articles in the literature and/or presentations at conferences.

Potential Costs of Participation and Reimbursement to the Participant:

The interventions will be arranged at a time and place that is convenient for both you and Sarah. You will receive bus tickets for your travel and coffee or tea and a snack will be provided for you during the interview.

Compensation for Injury:

If you suffer any injury from your participation in this research study, please seek medical care as you would normally. In no way does signing this form change your legal rights nor release Sarah Xiao from her legal or professional responsibilities.

Participation and Withdrawal:

Participation in any research study is voluntary. If you choose not to participate you and your family will continue to have access to customary care at HDH. If you decided to participate in research study you can change your mind without giving a reason, and you may withdraw from the research study at any time without any effect on the care you and your family will receive by HDH.

Research Ethics Board Contact:

If you have any questions regarding your rights as a research participant, you may contact Dr. Albert Clark, Chair, Research Ethics Board (Queen's University) at 613-533-6081 during business hours.

The research study protocol and consent form have been reviewed by the Queen's University Research Ethics Board. The Research Ethics Board may review this research study as part of quality improvement and someone may contact you from the Research Ethics Board to discuss your experience in the research study.

Research study

Principal Investigator:

Contacts: Sarah Xiao, BNSc, RN, MSc (c) at 613-533-2668.
Or
Academic Supervisor:
Dr. Cynthia Baker, RN, PhD at 613-533-6000 ext.75323

Code number: _____

**Psychosocial Processes Influencing Weight Management Among Persons Newly Prescribed
with Atypical Antipsychotic Medication**

The research study has been explained to me. I have had the opportunity to ask any questions I have and they have been answered to my satisfaction. I can choose not to participate. If I choose to participate, I can withdraw at any time or I may decide to not answer any question and this would not affect the care I receive now or in the future.

I still keep all my legal rights. The investigator or involved institutions are not released from their legal and professional responsibilities. I know that I may ask now, or in the future, any questions I have about the research study. All research study documentation on me will be kept confidential and no information will be disclosed without my permission unless required by law. I have been given sufficient time to read the above information.

If at any time I have further questions, problems or issues, I can contact:

Principal Investigator:

Sarah Xiao, BNSc, RN, MSc (c) at 613-533-2668

or

Academic Supervisor:

Dr. Cynthia Baker, RN, PhD at 613-533-6000 ext.75323

or

Departmental Head:

Dr. Jennifer Medves, RN, PhD at 613-533-2669

I consent to participate in this research study. I will receive a copy of this signed consent form.

Signature of Participant

Date

Signature of Witness (if available)

Date

Statement of Investigator:

I certify that I have explained the purpose, the objectives and the implications of the research study, and have answered all of this/her questions to his/her satisfaction, and I have explained that he/she is free to end his/her participation in the research study at any time without having to justify this in any way.

Signature of Principal Investigator

Date