



Bipolar Affective Disorder and older Adults (BADAS) Study

Norm O'Rourke - SFU

Erin Michalak – UBC

Andrew Sixsmith - SFU

Peter Borwein (SFU), Anita DeLongis, Colin Depp, Uwe Glässer (SFU), Marnin Heisel, Rachelle Hole, Christiane Hoppmann, Nasreen Khatri, Ted Kirkpatrick (SFU), Wendy Loken (SFU), Atiya Mahmood (SFU), Alex Mihailidis, and Ivan Torres

OVERVIEW

Large numbers of persons with severe mental illness are living to later life for the first time in human history. This includes bipolar disorder (BD), an often severe and disabling psychiatric condition that afflicts roughly 75,000 Canadians 50+ years of age (based census data and prevalence estimates; Schaffer et al., 2006). At present, BD may account for 20% of all mood disorders among older adults (Cassano et al., 2000). Moreover, BD accounts for a sizeable and growing proportion of the \$45 billion annual cost of mental illness in Canada (Lim et al., 2008). Yet despite growing costs and numbers, social science research specific to older adults with BD is virtually nonexistent (Thomas, 2010).

In spite of advances in treatment and management, BD remains highly debilitating; often with profound, deleterious effects upon both quality of life (QoL) and well-being (co-PI Michalak et al., 2005; 2011). Also disconcerting, BD is associated with cognitive decline in later life (Bearden, 2001; Gildengers et al., 2004). To date, research has yet to determine how, and to what degree, gerontological factors affect later life for those with BD (e.g., comorbid physical health conditions, retirement, bereavement). Persons 50+ years of age with a 10+ year BD diagnosis will be recruited from 4 sites over 12-months ($N = 205$; Vancouver, Calgary, Toronto & Kelowna). This proposed 5-year, mixed-methods study will synergistically combine participatory, mixed methods, and experiential sampling methods (ESM).

Twice-daily data collection will enable intensive examination of mood-in-the-moment, hassles/uplifts and medication adherence during three 2-week periods, spaced at 8-month intervals. In addition, *location* and *place* Global Positioning System (GPS) information will be recorded every 20 seconds during these 2-week data collection periods. GPS data will enable us to identify associations between patterns of movement and BD symptom patterns vis-à-vis current and future participant well-being.

We envision use of a GPS monitor such as a nondescript watch electronically tethered to a 3G enabled iPad or similar tablet-type device. This will enable transmission of encrypted ESM responses and questionnaires pre- and post each 2-week ESM period. GPS data will be automatically downloaded to the tablet-type device when in proximity; ESM, GPS, and other data will be stored in the tablet until within either Wi-Fi or mobile telephone range then transmitted to us.

Our goal is to capture range of movement in relation to BD symptom patterns. We will measure phenomena such as the expansion and contraction of movement concurrent with episodes of mania and depression (e.g., more frequent liquor store trips while depressed; 14+ hours in the casino when manic). Specific tools, software, and study methods will be finalized during an initial phase of community consultation and systematic technology testing. Our goal is to devise an ESM tool that will serve also as a BD self-care aid, and can be used with a range of mental health and other older adult populations.

OBJECTIVES

Our intent is to examine symptom patterns, severity of both depression and mania symptoms, cycling between the two (i.e., rapidity of shifts between poles) and interactions between symptom levels and cycling as predictors of QoL and factors which affect these associations over time. This will enable us to identify clinical features and contextual factors which precipitate symptom variability. Contemporary statistics enable analyses of complex patterns of behaviour and change over time (Chow et al., 2009). Also, qualitative data and mixed-methods analyses will enable better understanding of later life with BD (e.g., ageism + psychiatric stigma).

We seek to identify psychosocial determinants of well-being and QoL as well as factors which affect QoL and well-being over time. Figure A in the Research Proposal Appendix depicts an organizing framework we devised within which socio-demographic, BD symptom and resilience factors appear as distal and proximal determinants of well-being. This framework is an adaptation of the stress and coping model we have adapted to inform psychosocial research with this population (cf. co-applicant DeLongis & Holtzman, 2005; Zarit, 1990). Examples now appearing under model headings are not exhaustive; community-based participatory methods (CBPR) will enable us identify the range of factors contributing to QoL. These data analyses will be undertaken to identify causal patterns and change over time.

We define *BD in later life* as a longstanding BD diagnosis of 10+ years among those 50+ years of age. This definition is in accord with previous studies (Bartels et al., 1997). Although the onset of BD can occur after age 50, cases are few and may represent a distinct population (Beyer et al., 2008). Late-onset participants will not be recruited, only those who have lived with a BD diagnosis for decades.

This program of study brings the *Collaborative REsearch Team to study psychosocial issues in Bipolar Disorder* (CREST.BD; www.crestbd.ca; Michalak et al., 2011) together with academic clinicians, and technology experts with The Interdisciplinary Research in the Mathematical and Computational Sciences (IRMACS; <http://www.irmacs.sfu.ca>). Our team includes experts in BD research and practice, clinical geropsychology, social work, technology and aging research, geography, computing science, health psychology, cognitive aging, mathematics and neuropsychology. We constitute a multinational and multidisciplinary team (Canada, USA, & Australia). Significant synergies exist across this network of experts in BD research, practice and technology. We will use of advanced qualitative and quantitative research methods (e.g., mixed methods, experiential sampling, latent growth and hierarchical linear modelling). Exceptional research training and knowledge translation (KT) opportunities are proposed.

The following points capture the research questions for the varied components of this program of study:

- Are socio-demographic or other contextual factors associated with the wellness of older adults with BD over time (controlling for symptoms, cycling and person-specific factors as required)?
- What person-specific factors moderate and/or mediate the association between BD symptomatology and the wellness of older adults with BD over time?
- Does the frequency and extent of manic and depressive symptoms, cycling between the two (and possible interactions between depression/manic episodes and cycling) predict wellness, and change in wellness, over time?
- Does the frequency and extent of manic and depressive symptoms, cycling between the two (and possible interactions between depression/manic episodes and cycling) predict cognitive deficits, and change in cognition, over time?
- To what degree do patterns of geographic movement harbingers the onset of depressive and manic episodes (e.g., novelty seeking, rapid habituation to novel circumstances, terrain covered)?
- How can this technology be adapted for use as a BD self-care tool to promote health and wellness?
- To what other mental health and older adult populations can technology emerging from this study be applied?

