



**University
of Victoria**

Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Science

of

JACLYN MORRISON

BSc (University of Victoria, 2008)

**“The Impact of Stroke Assessment on Patient Outcomes Following an
Initial Transient Neurological Event (TNE)”**

School of Health Information Science

Tuesday, July 21, 2015

10:30AM

Technology Enterprise Facility

Room 264

Supervisory Committee:

Dr. Scott Macdonald, School of Health Information Science, University of Victoria (Co-Supervisor)

Dr. Elizabeth Borycki, School of Health Information Science, UVic (Co-Supervisor)

External Examiner:

Dr. Lynne Young, School of Nursing, UVic

Chair of Oral Examination:

Prof. Linda Hardy, Theatre Department, UVic

Abstract

As one of the major causes of death and disability in Canada, research into the treatment and prevention of acute cerebrovascular syndrome (ACVS) remains a priority for clinicians, researchers and the general public. Understanding the relationship between current treatment practices of a rapid stroke clinic and patient outcomes is an essential part of measuring success and considering opportunities for quality improvement.

This study compared the 90-day and 1-year hospital admission and mortality outcomes of patients who were referred to and seen in a rapid stroke clinic (**the shows**) following an initial transient neurological event (TNE) with those who were referred to but not seen in the same clinic (**the no-shows**). The specific outcomes examined were stroke events, cardiovascular events and all other hospital events.

In this post-test only non-equivalent group design, data on patient outcomes was collected in the Victoria-based Stroke Rapid Assessment Unit (SRAU) between 2007 and 2013. Analysis included an assessment of group equivalency for possible confounders (age, sex and severity score) and two sets of multivariate logistic regressions were conducted on nine outcomes.

An independent t-test revealed there was a statistically significant difference between the mean age of the shows ($\bar{X}=68.26$) and no-shows ($\bar{X}=69.90$) ($p<0.01$). While the proportion of males and females in each of the groups was similar (Fisher's Exact test, $p = 0.831$, ns), the severity score of the treatment group ($\bar{X}=3.64$) was statistically more severe in the show group than the no-show group ($\bar{X}=3.50$; $t = 2.137$, $p<0.05$). Controlling for age, sex and severity score, the odds ratios (ORs) were calculated to compare the odds of various outcomes in the treated (shows) versus the untreated (no-shows) patients groups. ORs for the 90-day and 1-year hospital admissions for stroke-related events were 0.071 ($p<0.01$) and 0.091 ($p<0.01$), respectively; the OR for 1-year stroke deaths was 0.167 ($p<0.01$), indicating a strong protective factor related to attending the clinic appointment. For the cardiovascular outcomes, the ORs for hospitalizations were 0.967 (ns) at 90-days and 0.978 (ns) within 1-year and the OR for the 1-year cardiac-related deaths was 0.391 (ns). For all other outcomes, the ORs were 0.525 ($p<0.01$) for hospitalizations within 90-days, 0.579 ($p<0.01$) for hospitalizations within 1-year and 0.299 ($p<0.01$) for deaths within 1-year. These findings remained consistent with re-analysis excluding subjects who had an event within 5.4 days of their initial TNE. These latter finding largely rules out the possibility that the primary reason the no-shows did not make their clinic appointment, was due to a subsequent hospital event.

The ORs for the outcomes show a protective effect of stroke and all other hospital outcomes (but not cardiac events) for patients treated in the rapid assessment clinic. The exclusion of patients who experienced an outcome while waiting for a clinic appointment, lowered the protective effect of the treatment and emphasized the need for rapid assessment but did not alter the main study conclusions. Future research that explores factors influencing appointment adherence and patient attitudes towards acute treatment of TNEs might reveal strategies that could help to reduce the number of patients that remain untreated and at a higher risk for poor outcomes.