

**ORGANIZATIONAL AND PHYSICAL ENVIRONMENTAL
CORRELATES OF BATHING-RELATED AGITATION
IN DEMENTIA SPECIAL CARE UNITS**

by

Heather A. Cooke

B.A., University of Calgary, 1994
Dip. Gero., Simon Fraser University, 2003

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

In the
Department of Gerontology

© Heather A. Cooke 2006

SIMON FRASER UNIVERSITY

Spring 2006

All rights reserved. This work may not be
reproduced in whole or in part, by photocopy
or other means, without permission of the author.

APPROVAL

Name: Heather A. Cooke
Degree: Master of Arts (Gerontology)
Title of Thesis: Organizational and Physical Environmental Correlates of Bathing-Related Agitation in Dementia Special Care Units

Examining Committee:

Chair: Dr. Anthony Perl, Professor, Urban Studies and Political Science, SFU

Dr. Gloria Gutman, Professor Emeritus, Gerontology Department, SFU
Senior Supervisor

Dr. Habib Chaudhury, Assistant Professor, Gerontology Department, SFU
Supervisor

Dr. Andrew Wister, Professor, Gerontology Department, SFU
Supervisor

Dr. Jean Francois Kozak, Assistant Professor, Health Care and Epidemiology, UBC
External Examiner

Date Approved: March 8, 2006



**SIMON FRASER
UNIVERSITY library**

DECLARATION OF PARTIAL COPYRIGHT LICENCE

The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection, and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author's written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library
Burnaby, BC, Canada



SIMON FRASER
UNIVERSITY library

STATEMENT OF ETHICS APPROVAL

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

(a) Human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

(b) Advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

(c) as a co-investigator, in a research project approved in advance,

or

(d) as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Bennett Library
Simon Fraser University
Burnaby, BC, Canada

ABSTRACT

Both the organizational and physical environments of long-term care facilities are believed to influence agitation levels among cognitively impaired residents. This thesis explores the relationship between selected organizational and physical characteristics of the facility bathing environment and bathing-related agitation. Findings are based on survey data obtained from 47 of the 90 Special Care Units in British Columbia. Of the 1,565 baths conducted during the study period, 46.8% involved some form of agitation. While the provision of initial and additional staff training reduced the likelihood of bathing-related agitation, the presence of a bathing policy and a dedicated bath team actually increased the likelihood of bathing-related agitation. Of the physical environmental features, only the provision of privacy was found to reduce the likelihood of bathing-related agitation. In order to enhance the quality of the bathing experience for residents, facilities are encouraged to direct their resources to improving the organizational bathing environment.

Keywords: Dementia, long-term care facilities, baths, agitation, built environment

DEDICATION

To Mrs. Brown who first started me on this journey.

ACKNOWLEDGEMENTS

My appreciation and thanks are extended to a number of individuals and organizations who helped bring this thesis to fruition. I thank my senior supervisor, Dr. Gloria Gutman for her continued encouragement and sage advice; Dr. Habib Chaudhury for helping to formulate the idea for this study; and Dr. Andrew Wister for his patience and guidance with the statistical analyses.

I thank the Michael Smith Foundation for Health Research for their generous funding support and for acknowledging the importance of this research. I am indebted to the many facilities who participated in the study and to the staff members who so candidly shared their experiences.

I am grateful to my classmates, Sara Danziger and Rita Cormier, for their support in facing the trials and tribulations associated with the pursuit of a graduate degree.

I thank my parents for instilling in me a lifelong love of learning and for encouraging me to set such high goals, and my brother for reminding me of the need for balance in one's life.

Finally, to my husband Mike, who now knows more about bathing-related agitation than he ever believed possible, your unconditional love and support continue to provide the impetus for my success.

TABLE OF CONTENTS

Approval	ii
Abstract	iii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
List of Tables	ix
Chapter 1: Introduction	1
Chapter 2: Review of the Literature	4
2.1 Prevalence of Agitation during Bathing	4
2.2 Antecedents of Agitation during Bathing.....	5
2.3 Implications of Agitation during Bathing.....	6
2.4 Role of the Organizational Environment.....	7
2.5 Role of the Physical Environment	10
2.5.1 Provision of Privacy	12
2.5.2 Appropriate Temperature.....	13
2.5.3 Appropriate Lighting and Noise Levels	14
2.5.4 Homelike Décor.....	15
2.6 Summary.....	16
2.7 Research Questions	17
Chapter 3: Theoretical Framework and Hypotheses	19
3.1 Ecological Model of Aging	19
3.2 Progressively Lowered Stress Threshold Model	21
3.3 Present Study	23
3.3.1 Hypotheses.....	24
Chapter 4: Methodology	26
4.1 Overview of Research Design	26
4.2 Sample	27
4.2.1 Sampling Frame.....	27
4.2.2 Sampling Procedure and Data Collection.....	28
4.2.3 Instruments	30
4.3 Variables.....	33
4.3.1 Dependent Variables.....	33
4.3.2 Independent Variables	34
4.4 Data Analysis.....	35
4.4.1 Analysis	35

4.4.2	Variable Manipulation	37
Chapter 5: Results – Bathing-Related Agitation and the Bathing Environment.....		39
5.1	Facility and Resident Demographics	39
5.2	Bathing-Related Agitation	41
5.2.1	Perception of Bathing-Related Agitation.....	44
5.3	Organizational Bathing Environment.....	46
5.3.1	Bathing Context	46
5.3.2	Bathing Policy	48
5.3.3	Staff Training.....	48
5.3.4	Staff Assignment	51
5.3.5	Perceived Importance of Organizational Environment	52
5.4	Physical Bathing Environment.....	52
5.4.1	Bathing Context.....	52
5.4.2	Provision of Privacy	53
5.4.3	Temperature Control.....	54
5.4.4	Lighting.....	55
5.4.5	Noise Levels	56
5.4.6	Homelike Décor.....	57
5.4.7	Bathing Equipment.....	58
5.4.8	Perceived Importance of Physical Environment.....	59
5.5	Bivariate Analyses.....	60
5.5.1	Mean Resident Age.....	62
5.5.2	Number of Beds.....	62
5.5.3	Size of Bathing Area.....	62
5.5.4	Age of Facility	63
5.5.5	Bathing Policy	63
5.5.6	Dedicated Bath Team	64
5.5.7	Staff Training.....	64
5.5.8	Provision of Privacy	66
5.5.9	Temperature Control.....	69
5.5.10	Lighting.....	69
5.5.11	Noise Control.....	70
5.5.12	Homelike Décor.....	70
5.5.13	Bathing Equipment	71
5.6	Multivariate Analyses.....	73
5.6.1	Presence of Any Agitation during Bathing.....	74
5.6.2	Presence of Physical Aggression during Bathing.....	76
5.6.3	Presence of Verbal Aggression during Bathing.....	79
5.6.4	Presence of Physical Agitation during Bathing	81
5.6.5	Presence of Verbal Agitation during Bathing.....	84
Chapter 6: Results – Staff Perceptions of Bathing-Related Agitation.....		89
6.1	Staff Demographics	89
6.2	Impact of Bathing-Related Agitation	89
6.3	Strategies for Dealing with Bathing-Related Agitation.....	91

6.4	Role of Physical Bathing Environment	92
6.5	Improving the Bathing Experience for Residents and Staff	95
Chapter 7: Discussion and Conclusion		99
7.1	Bathing-Related Agitation	99
7.2	Characteristic Features of Bathing Environments	101
7.3	Impact of the Organizational and Physical Environment	104
7.3.1	Organizational Environment	104
7.3.2	Physical Environment	107
7.4	Bath Staff Perceptions of Bathing-Related Agitation	113
7.5	Theoretical Framework	115
7.5.1	Ecological Model of Aging	115
7.5.2	Progressively Lowered Stress Threshold Model	117
7.6	Study Limitations	118
7.6.1	Sampling Frame	118
7.6.2	Data Collection Methods	119
7.7	Future Research Directions	122
7.8	Clinical and Environmental Design Implications	125
7.9	Conclusion	129
Appendices		131
Appendix A: Agitated Behaviour Classification Scheme		131
Appendix B: Introductory Letter to Facilities		132
Appendix C: Consent Letters and Forms		134
Appendix D: Agitated Behaviour Checklist		142
Appendix E: Bathing Area Therapeutic Environmental Rating Scale		144
Appendix F: Bath Aide Information Survey		154
Appendix G: Resident Background Information		160
Appendix H: Examples of Most Common Bathtubs in Use		161
Reference List		163

LIST OF TABLES

Table 4.1	Overview of Research Design	27
Table 4.2	Participating SCUs by Health Region and Health Service Delivery Area	30
Table 4.3	Study Independent and Dependent Variables	35
Table 5.1	Summary of Facility and Resident Demographics	41
Table 5.2	Bathing-Related Agitation by Category and Most Common Sub-Type	42
Table 5.3	Frequency of Bathing-Related Agitation by Sub-Type	43
Table 5.4	Bathing-Related Agitation Rates by Facility	45
Table 5.5	Organizational Bathing Context	47
Table 5.6	Bathing-Related Staff Training	50
Table 5.7	Bathing Staff Assignment	51
Table 5.8	Organizational Features Perceived Most Important by Directors of Care	52
Table 5.9	Physical Bathing Context	53
Table 5.10	Provision of Privacy	54
Table 5.11	Temperature Control Features	55
Table 5.12	Lighting Attributes	56
Table 5.13	Noise Control during Bathing	57
Table 5.14	Homelike Décor	58
Table 5.15	Bathing Equipment	59
Table 5.16	Physical Environment Features Perceived Most Important by Directors of Care	60
Table 5.17	Key Independent Variables Included in Bivariate Analysis	61
Table 5.18	Number and Percentage Distribution of Baths with and without Physical Aggression by Presence of Bathing Policy	63
Table 5.19	Number and Percentage Distribution of Baths with and without Verbal Agitation by Presence of Dedicated Bath Team	64
Table 5.20	Number and Percentage Distribution of Baths with and without Physical Agitation by Type of Initial Training Provided	65
Table 5.21	Number and Percentage Distribution of Baths with and without Verbal Aggression by Provision of Additional Training	66
Table 5.22	Number and Percentage Distribution of Baths with and without Any Agitation by Provision of Privacy	67

Table 5.23	Number and Percentage Distribution of Baths with and without Physical Aggression by Provision of Privacy	67
Table 5.24	Number and Percentage Distribution of Baths with and without Verbal Aggression by Provision of Privacy	68
Table 5.25	Number and Percentage Distribution of Baths with and without Physical Agitation by Provision of Privacy	68
Table 5.26	Number and Percentage Distribution of Baths with and without Verbal Agitation by Provision of Privacy	69
Table 5.27	Number and Percentage Distribution of Baths with and without Verbal Aggression by Presence of Windows	70
Table 5.28	Number and Percentage Distribution of Baths with and without Verbal Aggression by Number of Homelike Features	71
Table 5.29	Summary of Statistically Significant Bivariate Associations.....	72
Table 5.30	Variables included in Logistic Regression Analyses	73
Table 5.31	Logistic Regression Model Significance for Baths Involving Any Type of Agitation	74
Table 5.32	Logistic Regression: Predictors of Baths Involving Any Type of Agitation.....	75
Table 5.33	Logistic Regression Model Significance for Baths Involving Physical Aggression	77
Table 5.34	Logistic Regression: Predictors of Baths Involving Physical Aggression.....	78
Table 5.35	Logistic Regression Model Significance for Baths Involving Verbal Aggression.....	79
Table 5.36	Logistic Regression: Predictors of Baths Involving Verbal Aggression.....	80
Table 5.37	Logistic Regression Model Significance for Baths Involving Physical Agitation	82
Table 5.38	Logistic Regression: Predictors of Baths Involving Physical Agitation.....	83
Table 5.39	Logistic Regression Model Significance for Baths Involving Verbal Agitation.....	85
Table 5.40	Logistic Regression: Predictors of Baths Involving Verbal Agitation.....	86
Table 5.41	Summary of Statistically Significant Multivariate Associations	88

CHAPTER 1: INTRODUCTION

Dementia, a chronic, progressive condition, refers to a cluster of symptoms characterized by memory loss and a general decline in cognitive function. Currently, 8% of individuals aged 65 and over meet the criteria for a diagnosis of dementia. For those aged 85 or over, this proportion increases to 34.2% (Canadian Study of Health and Aging, 1994). In 2001, there were an estimated 83,200 new cases of dementia in Canada and by 2031, more than ¾ million Canadians will be affected by Alzheimer Disease or a related dementia (Canadian Study of Health and Aging, 1994). It is estimated that 57% of long-term care beds in both Canada and the U.S. are occupied by individuals with dementia (Morgan & Stewart, 1998), although some researchers suggest this proportion may be closer to 75% (Beck, Ortigara, Mercer & Shue, 1999; McCallion, Toseland, Lacey & Banks, 1999). Given the recent emergence of assisted living facilities, long-term care (LTC) facilities will likely shelter increasingly higher proportions of individuals with advanced dementia and complex care needs (Beck et al., 1999; Chappell & Reid, 2000).

Dementia special care units (SCUs) are designated care units within LTC facilities (Beck et al., 1999). Prior to 1980, few such units existed (Maslow & Ory, 2001), however, in the last decade their growth has been dramatic. For example, in British Columbia, one SCU was established in 1976, 14 during the 1980s and 37 between 1990 and 1995 (Chappell & Reid, 2000). Common elements of SCUs include physically distinct units with controlled access, admission limited to individuals with a diagnosis of

dementia, modified physical environments, specialized staff and staff training, dementia-specific activity training and family involvement (Gutman & Killam, 1989; Beck et al., 1999, Chappell & Reid, 2000). However, there is much variation as to how these elements are operationalized within each facility (Beck et al., 1999).

The progressive nature of dementia results in an increasing dependence upon others for the provision of assistance with activities of daily living (ADLs), such as dressing and bathing. However, disease symptoms such as memory loss, speech difficulties, motor skill dysfunction, and perceptual difficulties can make care issues especially problematic (Burgener, Jirovec, Murrell & Barton, 1992). Indeed, research indicates that bathing is associated with considerable distress and agitation¹ among care recipients and significant job stress for care providers (Sloane, Honn, Dwyer, Wieselquist, Cain & Myers, 1995). It is estimated that between 40% and 73% of residents with dementia display behaviours ranging from verbal and physical resistance to hostile language, punches, hits and slaps during the bathing process (Hoeffler, Rader, McKenzie, Lavelle, & Stewart, 1997; Sloane et al., 1995a; Namazi & Johnson, 1996; Kovach & Meyer-Arnold, 1997).

Given the reduced competency of an individual with dementia, the organizational and physical environment of the care facility become increasingly salient (Lawton & Nahemow, 1973). While the occurrence of agitated behaviour during bath time is well-documented (Hoeffler et al., 1997; Kovach & Meyer-Arnold, 1996, 1997; Namazi & Johnson, 1996; Sloane et al., 1995a), minimal empirical data exist regarding the impact

¹ For the purposes of this study, agitated behaviour is defined according to the classification scheme developed by Gutman, MacFadgen and Killam (1995) that includes the four categories of: agitated/aggressive physical; agitated/aggressive verbal; agitated/non-aggressive physical; and agitated/non-aggressive verbal (see Appendix A for examples of these four categories).

of the organizational (i.e., bathing policy, training of bath staff, staff assignment) (Hoeffler et al., 1997; Namazi & Johnson, 1996; Maxfield, Lewis & Cannon, 1996) and physical bathing environment on agitated behaviour (Sloane et al., 1995a; Namazi & Johnson, 1996). For example, Day, Carreon, and Stump (2000) in their comprehensive review of empirical research on design and well-being for individuals with dementia, identify only three studies (Namazi & Johnson, 1996; Kovach & Meyer-Arnold, 1996; Whall, Black, Groh, Yankou, Kuperschmid & Foster, 1997) addressing the physical bathing environment. Sloane et al. (1995a) speculate that this may be due to the specialized nature of the bathing area and an absence of objective information regarding the environmental changes believed to be most useful. To date, the majority of recommendations involving the physical bathing environment are descriptive in nature (Brawley, 2002; Calkins, 2002; Briller, Proffitt, Perez, Calkins, & Marsden, 2001; Miller, 1997) and appear to be extrapolated from studies of the larger SCU environment. The purpose of this study was to explore the relationship between selected organizational and physical features of the bathing environment and bathing-related agitation in all SCUs across B.C. in an attempt to determine the relative importance of the organizational and physical bathing environment on bathing-related agitation.

CHAPTER 2: REVIEW OF THE LITERATURE

2.1 Prevalence of Agitation during Bathing

Estimates of the prevalence of agitation among cognitively impaired individuals during bathing range from 40 – 73% (Hoefffer et al., 1997; Kovach & Meyer-Arnold, 1996, 1997; Namazi & Johnson, 1996; Sloane et al., 1995a). In a sample of 18 adult day care participants and 15 SCU residents, Kovach and Meyer-Arnold (1996) reported that 73% of individuals exhibited agitated behaviours (classified as excessive physical/verbal restlessness, aggression, and expressions of displeasure) during a bath or shower. Of this group, 92% began to display agitated behaviours as soon as they were informed it was bath time.

Hoefffer and colleagues (1997) collected data on the bathing experiences of 86 residents of an intermediate and skilled nursing care facility over a one-month period. Forty-one percent of the residents were aggressive during at least one of the weekly baths, while 16% were aggressive during three of the four baths. The majority of these residents (60% and 72% respectively) had a diagnosis of Alzheimer's disease or a related dementia. Close to two-thirds of the aggressive residents displayed both physically and verbally aggressive behaviour during the bathing process. The most frequent type of physical aggression directed towards care staff included striking out (i.e. hits, punches or slaps) followed by pinching or squeezing. Verbally aggressive behaviour such as the use of hostile language, name calling and cursing was fairly evenly distributed (Hoefffer et al., 1997).

In a survey of bathing practices and problems among 60 nursing homes in North Carolina (Sloane et al., 1995a), 43.2% of residents with dementia were reported as being disruptive during the bathing process. As in Hoeffler et al's (1997) study, agitated behaviours included physical resistance (64.2%), verbal resistance (63.5%), hitting/slapping (63.1%), grabbing (58.2%), swearing/cursing (56.6%) and yelling/screaming (51.3%) (Sloane et al., 1995a). Similarly, Namazi and Johnson (1996) found that the most frequently observed agitated behaviours during the bathing of 22 SCU residents were verbal aggression (91%), verbal resistance (73%) and physical aggression (45%).

Sloane and colleagues (1995a) also examined one year's worth of incident reports for 25 nursing homes throughout the United States, and found that resident agitation or restraint for agitation accounted for 1 of every 4 bathing related incidents. More than 75% of these incidents resulted in injury to the resident.

2.2 Antecedents of Agitation during Bathing

Nursing staff commonly believe that the aggressive behaviours displayed during their attempts to provide personal care are both unexpected and unprovoked (Miller, 1997). However, studies of aggressive behaviour among cognitively impaired residents demonstrate that aggression is typically a response to personal care activities (Rader, Lavelle, Hoeffler, & McKenzie, 1996). Indeed, the most frequent antecedents of behavioural symptoms during personal care include: perceived loss of control or choice; lack of attention to personal needs/preferences; impaired expression/communication of needs and feelings; and caregiver characteristics such as tense caregiver appearance, nonengaged communication, or task-oriented behaviour (Hoeffler, Rader & Barrick,

2002). Environmental conditions such as lack of privacy, room and water temperature, excess noise, and the unfamiliar appearance of facility bathing areas and bathing equipment may also contribute to aggressive behaviour (Hoeffler et al., 2002; Maxfield et al., 1996).

In a study examining the environmental correlates of resident agitation on SCUs, Sloane and colleagues (1998) found that both the physical environment and staff actions have the potential to substantively impact agitation levels among residents with dementia. They suggest that quality in one domain (i.e., the physical environment) is typically associated with quality in the other (i.e., the organizational environment). The authors conclude that the provision of quality care in SCUs necessitates attention to each of these environments.

2.3 Implications of Agitation during Bathing

The findings of the above studies possess important implications for both residents and nursing staff. The bathing process may be sufficiently distressing to upset the resident for the remainder of the day, colouring her/his interactions with fellow residents and staff (Hoeffler et al., 2002; Namazi & Johnson, 1996). Frequently, the resident becomes perceived as difficult and troublesome, and psychoactive medication or physical restraints may be used in an attempt to control the behavioural symptoms (Talerico, Evans & Strumpf, 2002).

Nursing staff indicate that the bathing of residents with dementia is one of the hardest, if not the most difficult, personal care tasks to perform (Namazi & Johnson, 1996; Miller, 1997). Researchers have noted that residents' aggressive behaviour can

alienate staff, lower staff morale and decrease the quality of patient care (Ryden & Feldt, 1992; Rovner et al., 1986; Mentis & Ferrario, 1989, all in Miller, 1997). A number of economic consequences of aggressive behaviour have also been documented such as increased staffing needs, burnout, absenteeism and turnover (Koggan et al., 1991, in Miller, 1997). Miller (1997) conducted in-depth interviews with nursing staff to examine the effects of physically aggressive behaviour during personal care on staff. Staff reported declines in both their mental health (e.g., frustration, anger, anxiety) and physical health (e.g., pain, exhaustion). In addition, staff perceived a number of changes in their caregiving practice including a decline in perceived quality of care, increased potential for staff-resident abuse or neglect, and a desire to leave the unit, facility or even the profession (Miller, 1997).

2.4 Role of the Organizational Environment

Components of the organizational environment related to the bathing process include the facility's philosophy, policies and procedures, staff support and education, and staffing patterns and assignment (Rader & Barrick, 2000). Hoeffler et al. (2002) argue that these components are critical for quality caregiving. However, in a review of one nursing home's policies and procedures relating to personal care, Namazi and Johnson (1996) found only a brief description of bathing issues for residents in the nursing home at large, and no specific policy on the bathing task or needs of cognitively impaired residents of the SCU. According to Rader and colleagues (1996), the majority of long-term care (LTC) facility bathing policies and procedures do not address resident comfort and dignity, particularly for individuals with dementia. In some facilities, bath aides are pressured to conform to rigid procedures and schedules that leave little room for

flexibility or creativity in the bathing process (Hoeffler et al., 2002). Not surprisingly, care providers report that the support they receive from colleagues and supervisors, and from the culture of the facility, influences their approach in bathing residents with dementia (Hoeffler et al., 2002).

Rader and colleagues (1996) contend that ensuring the provision of a resident-focused bathing process entails changing long-standing beliefs about how personal care is delivered. For example, in many LTC facilities, bath day and time is dictated by the bed/room occupied by the resident as opposed to the resident her/himself, with the number of baths provided for each resident determined by facility or corporate policy (Rader et al., 1996). On units where only one tub room exists and/or staff are frequently rotated, changes to the bathing process require considerable effort. While having consistent and permanently assigned bath aides is conducive to determining how best to individualize the bathing process for each resident, the decision to proceed with a bath is typically based on the beliefs, skills, and philosophy of nursing staff (Rader et al., 1996) as well as task considerations (Miller, 1997), as opposed to the assessed needs of the resident. Rader et al. (1996) stress the importance of staff acknowledgement of resident autonomy in the decision of when and how to bathe. When staff fail to do so, the resident's sense of personal identity and self-esteem is besieged (Miller, 1994).

In a pilot study designed to help nursing staff reduce aggressive behaviours during the bathing of cognitively impaired residents, Hoeffler et al. (1997) observed that staff were concerned that if they were to alter standard bathing routines, they may be viewed by their supervisors and colleagues as not doing their job. The researchers concluded that

validation and support from all colleagues is critical for ensuring the success of new approaches.

In spite of the demanding nature of the bathing process, the majority of nursing staff have not received the necessary training to develop the skills for such a task (Maxfield et al., 1996). Education in this area is typically informal, limited to safety guidelines and the mechanics of bathing (Sloane et al., 1995b; Briller et al., 2001). Namazi and Johnson (1996) contend that this type of emphasis serves only to depersonalize an extremely intimate activity. On examining anecdotal staff reports, Namazi and Johnson (1996) found that a number of the difficulties associated with bathing could be linked to a lack of staff understanding about the nature of dementia. Staff also lacked knowledge on how to manage disease-related behaviours while allowing for resident autonomy, normalcy and functionality during the bathing process. The researchers consequently emphasize the importance of staff training in strategies that may avoid or reduce agitated behaviours.

Maxfield et al. (1996) examined the impact of two one-hour classroom sessions (focussing on dementia, the use of supportive behaviours, and individualization of approach), in conjunction with follow-up instruction on the nursing unit, on the reduction of aggressive behaviour during the bathing of cognitively impaired elders. The researchers noted a 50% reduction in both the number of aggressive incidents, and in the use of PRN (as needed) medications associated with bathing. Staff injuries resulting from resident aggression also decreased from an average of four per month to zero.

Similarly, Hoeffler and colleagues (1997) found that the number of physically and verbally aggressive resident behaviours displayed during bathing significantly decreased

following training sessions provided by a clinical nurse specialist. The sessions, designed to shift bath aides' perspective from task-focused (i.e., completing the assigned bath) to person-focused (i.e., attending to the resident and individualizing the bathing care), and to display adept verbal and non-verbal approaches during bathing, were also effective in altering the aides' perceptions of residents' behaviour during bathing and the caregiving experience. For example, residents were viewed as being less upset and aggressive and more calm and relaxed, while the bathing process was viewed as less frustrating and frightening.

Sloane et al. (1995b) conclude that while some bath aides appear to possess intuitive abilities that enhance their ability to bathe residents with dementia, "nearly anyone can learn the craft if properly trained" (p.673).

Drawing on the research reviewed above, it stands to reason that certain features of the organizational environment, namely bathing policy, staff assignment and staff training, may substantively impact the occurrence of resident agitation during bathing. However, as the next section illustrates, certain features in the physical bathing environment may also influence bathing-related agitation.

2.5 Role of the Physical Environment

In many LTC facilities, the bathing area is the last stronghold of the institutional model of care, where design and layout are dictated by the goals of efficiency and utility as opposed to the psychological and emotional comfort of the individual being bathed (Calkins, 2002, p.99). Schultz (1987, in Sloane et al., 1995a) comments that recommendations regarding environmental design for individuals with dementia pay little

attention to the bathing area, which Sloane et al. (1995a) note is likely due, in part, to the paucity of objective data about what features are most important or useful. Similarly, Day and Calkins (2002) report that descriptions of LTC facilities frequently lack discussion of the bathing area, which they believe is suggestive of the lack of innovation in this area.

Researchers (Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996; Briller et al., 2001; Sloane et al., 1995a; Epp, MacPhee, Whitfield & Pickett, 2001) have identified several features in the physical environment believed to influence agitated resident behaviour during bathing. For example, the majority of bathtubs found on SCUs bear little resemblance to those found in most homes. Lift-over bathtubs require that a resident be elevated approximately four feet into the air by mechanical lift, turned, and then lowered into a tub already filled with water (Namazi & Johnson, 1996; Briller et al., 2001). Not surprisingly, researchers report that residents display considerable apprehension when elevated into the air by mechanical lift (Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996). Current literature (Sloane et al., 1995a; Epp et al., 2001) consequently advocates the use of 'no-lift' tubs to reduce fear and any resulting agitation. However, while the use of a mechanical lift is avoided in side-entry tilting bathtubs (where a side door swings up to allow ambulatory residents to seat themselves in the tub), the bathtub cannot be completely filled with water until the resident is seated in the tub and the door is closed, at which point the bathtub is reclined to a level plane (Briller et al., 2001).

Resident agitation and confusion have also been noted to be induced by inappropriate water/air temperature (too hot/too cold), running water, loud noises, and the

mechanical devices on the bathtub (Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996).

Bath aides in Namazi and Johnson's (1996) study identified poor lighting, an inadequate number of mats and handrails, and a small and cluttered workspace as contributing to awkwardness and difficulty during the bathing process. Indeed, in a survey of nursing homes in North Carolina in which respondents (either the nursing director or charge nurse) were asked to identify characteristics of an ideal bathing environment, suggestions included appropriate equipment (i.e., heat lamps, specialty tubs, ample storage areas and shower curtains/partitions for privacy), layout (i.e., spacious, private), and appearance (i.e., more effective use of colours and more homelike) (Sloane et al., 1995a).

A number of researchers (Brawley, 2002; Miller, 1997; Sloane et al., 1995b) have developed recommendations regarding the physical environment of SCU bathing areas. Recommendations focus on the provision of privacy, appropriate temperature control, appropriate lighting and noise levels, and a homelike (residential) décor. Although Day et al. (2000) in their review of design and well-being for individuals with dementia do not list any specific recommendations for the bathing environment, they do recommend that environmental factors that appear to increase stress during bathing be eliminated.

2.5.1 Provision of Privacy

In a pilot project examining aggressive behaviour during bathing in two Oregon nursing homes, Rader et al. (1996) observed care staff entering the bathing room (where supply carts were located) 12 times in a 10-minute period while an agitated resident was

being bathed. Clearly, such a violation of personal privacy would serve only to exacerbate the resident's distress. To ensure privacy, researchers recommend that bathing rooms not be used as storage areas, that do-not-disturb signs be posted on bathing room doors (Rader et al., 1996; Miller, 1994), and that policy be developed and enforced to restrict the entry of staff during a resident bath (Briller et al., 2001). Sloane et al. (1995b) suggest that only one bath should be accommodated at any one time in the bathing area. In bathing areas that include a shower stall, a homelike shower curtain should be draped on hooks across the shower opening. A half-height shower curtain may also be useful in providing privacy while keeping bath staff dry (Briller et al., 2001). Briller et al. (2001) also note that the provision of hooks for robes and a clothing storage area allow residents the opportunity to dress in the bathing area at the conclusion of their bath - an important feature for residents who share their bedroom with a roommate.

2.5.2 Appropriate Temperature

In older adults, a loss of subcutaneous fat and loss of regulation of the skin's blood flow patterns contribute to impaired heat retention and ease of chilling (Hampton, 1991). In order to feel comfortable, many older adults require an environmental temperature 10-15 °F higher than that of younger adults (Hampton, 1991). Consequently, the evaporative cooling that occurs during or following a bath may result in an uncomfortable sensation of cold for the resident (Miller, 1994). According to Brawley (2002), the provision of sufficient heat is the most requested improvement for bathing environments. Temperature control can be improved by having a separate thermostat for the bathing room (and turning the thermostat up), placing heat lamps above the

drying/dressing area, and using large towels or terry cloth robes that have been warmed in a blanket warmer (Sloane et al., 1995b; Briller et al., 2001).

2.5.3 Appropriate Lighting and Noise Levels

A number of age-related visual changes occur in older adults. These include decreased sensitivity under low levels of illumination, increased sensitivity to glare, decreased sensitivity to colours and decreased ability to discriminate between colours (Holliday & Gutman, 1994). Lighting is especially salient in the bathing area as visually impaired residents are without their glasses while being bathed (Brawley, 2002). As daylight is considered the best source of light, artificial lighting in the bathing area should resemble it as closely as possible (Brawley, 2002). If the bathing area is located adjacent to an exterior wall, etched or frosted glass windows and skylights can provide additional natural light without compromising privacy. For bathing areas with 9-foot ceiling heights cove lighting or indirect lighting fixtures should be used. In rooms where the ceiling is lower, recessed indirect light fixtures are recommended (Brawley, 2002). If a shower stall is located in the bathing area, a light fixture safe for use in wet areas should be used, as typically the shower curtain blocks the light from the main bathing area. In order to minimize glare, the floor covering in the bathing area should be low glare and should not be waxed (Sloane et al., 1995a). White walls and tiles should also be avoided (Miller, 1994).

Over time, many individuals with dementia lose the ability to filter out distracting noises and sound (Brawley, 2002). Consequently, one of the most effective nonpharmacologic interventions for reducing disruptive behaviour during bathing is to reduce the amount of stimulation and noise to which the resident being bathed is exposed

(Brawley, 2002). Noise levels in bathing areas are often high as a result of the high-echo, tiled walls and loud voices necessary to talk over the sound of running water or the bathing equipment (Miller, 1994). As hard surfaces exacerbate noise levels, vinyl wall coverings and moisture-resistant acoustical panels (that adhere to either ceilings or walls) are recommended (Brawley, 2002; Briller et al., 2001). Noisy exhaust fans and equipment should be avoided, as should conversation between staff members if more than one staff member is present during the bath (Sloane et al., 1995a).

2.5.4 Homelike Décor

The cavernous, sterile bathing areas in many SCUs bear little resemblance to the bathing areas experienced by residents prior to the onset of their dementia (Sloane et al., 1995b). Lack of short-term memory and sporadic long-term memory compound such discrepancy as bathing for these individuals may be remembered as a basin of hot water and a washcloth used once a week (Sloane et al., 1995b; Briller et al., 2001). Bathing rooms that incorporate a more homelike environment or enhanced ambiance can contribute to feelings of comfort and security among residents (Epp et al., 2001). The character of a bathing area can be easily changed with the addition of colour, wallpaper, borders and visually interesting knickknacks (Calkins, 2002). For example, the use of warm paint colours such as peach or coral may make the bathing area feel warmer without actually changing the temperature (Briller et al., 2001). Peach or coral coloured walls also cast a pinkish glow on resident's skin, thereby improving their pallor (Cluff, 1988). The presence of plants, pictures, curtains, decorative hooks for clothing and towel racks with flowered or brightly coloured towels can also help to create a more homelike appearance (Sloane et al., 1995a; Briller et al., 2001; Epp et al., 2001).

Unfortunately, bathing rooms often serve as storage areas for incontinence supplies, wheelchairs and other equipment (Epp et al., 2001; Brawley, 2002). Such equipment should be removed thereby providing space for simple furnishings such as a table next to the bathtub (for items such as soap and shampoo), an armoire or cabinet for storing towels and other necessities, and a comfortable chair where the resident can sit and dry off (Brawley, 2002). For many women, bathing is associated with grooming (Calkins, 2002; Brawley, 2002). The presence of a small vanity or dressing table enhances the homelike ambiance as well as providing an environmental cue as to the purpose of the room (Calkins, 2002; Brawley, 2002; Briller et al., 2001).

In a recent study of the bathing areas of six nursing homes in south-western Ontario, Epp et al. (2001) observed a variety of environmental practices in use. While several of the bathing areas displayed homelike features such as windows and curtains, none of the areas contained pictures or plants. Contrary to the recommendations presented above, a number of the bathing areas had noisy bathing equipment, fear-provoking lifts and were used as storage areas for lifts and supplies (Epp et al., 2001).

2.6 Summary

In addition to highlighting the perceived importance of both the organizational and physical environment in bathing-related agitation, the preceding literature review reveals a number of gaps in our knowledge base. Little is known about the pattern of bathing-related agitation in Canadian SCUs as previous studies have focused exclusively on American facilities (e.g., Hoeffler et al., 1997; Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996; Sloane et al., 1995a). These studies have relied primarily on observational reports from a single facility (Hoeffler et al., 1997; Kovach & Meyer-

Arnold, 1996; Namazi & Johnson, 1996). While Sloane and colleagues (1995a) sampled a number of facilities state-wide, they relied on prevalence estimates of bathing-related agitation from nursing directors or charge nurses. Few researchers have specifically examined the relative importance of the organizational and physical bathing environment on bathing-related agitation. Consequently, the majority of recommendations regarding the physical bathing environment are opinion rather than evidence-based (e.g., Brawley, 2002; Calkins, 2002; Briller, Proffitt, Perez, Calkins, & Marsden, 2001; Miller, 1997). Given the current emphasis on health care reform and fiscal responsibility, it is important to identify key features within the organizational and physical bathing environment towards which resources should be directed in an attempt to improve the quality of the bathing experience.

2.7 Research Questions

In order to address the limitations of the current bathing literature, specific research questions for this study included:

1. How frequently does resident agitation occur during the bathing process in B.C. SCUs?
2. What types of agitated behaviour are most commonly displayed by residents during the bathing process in B.C. SCUs?
3. What are the characteristic features of the organizational and physical bathing environment in B.C. SCUs?
4. What is the relative importance of selected features in the organizational environment (i.e., bathing policy, staff training, staff assignment) as compared with selected features in the physical bathing environment (i.e., provision of privacy, temperature

control, lighting, noise, homelike décor, bathing equipment) on bathing-related agitation?

5. What is the impact of bathing-related agitation on staff?
6. What practices do bath aides employ to deal with bathing-related agitation?

CHAPTER 3: THEORETICAL FRAMEWORK AND HYPOTHESES

Central to much of the literature examining the interplay between aging and the environment is the idea that as individuals age, their lives become more closely integrated with their environment, resulting in an increased salience of the person-environment (P-E) transaction (Wister, 2005). The rationale for the current research stems from P-E theory, namely, Lawton and Nahemow's (1973) Ecological Model of Aging.

3.1 Ecological Model of Aging

The model conceives of two major constructs as predictors of the P-E transaction – environmental press and competence (Lawton, 1998). Individual behaviour and well-being are viewed as a function of the dynamic balance between these two constructs. Environmental press refers to the demand that the environment, or some aspects of it, make on an individual. Demand can originate from physical or social surroundings and can range from positive to negative in terms of its impact. Competence represents the ability of the individual to respond adaptively and is believed to depend on the individual's functional health, social roles, sensory-motor and perceptual functions and cognition (Wister, 2005). A positive P-E fit is believed to arise when there is a balance between environmental demand and the competence of the individual to cope with such demand. Conversely, an environment that is too demanding for the individual's level of competence results in a negative P-E fit. The exposure of a resident with dementia to the sterile, noisy, dimly lit and wholly unfamiliar setting of the SCU bathing environment is a

classic case of incongruence between environmental press and individual competence. Lawton (1998) suggests that while small mismatches between environmental press and competency may still be associated with positive outcomes, larger mismatches are associated with negative outcomes. The experience of a resident with dementia in an institutional bathing area is consistent with such a premise.

Asymmetry between the effects of excess and deficient environmental press is hypothesized to be mediated by adaptation level, the point at which the perceived value of the external stressor is neither weak nor strong (Lawton, 1998). Press levels that are incrementally below the adaptation level are associated with reduced energy output and competent behaviour and affect. The lack of demand accompanying this low-press state contributes to a state of relaxation, known as the zone of maximum comfort (Lawton, 1998).

Central to Lawton and Nahemow's (1973) model is the environmental docility hypothesis which states that the effect of environmental press of a given magnitude on an individual's behaviour and well-being becomes greater as personal competence diminishes. Consequently, individuals with a high level of competence (e.g., cognitively intact individuals) can withstand greater levels of environmental press, while individuals with low competence (e.g., individuals with dementia) cannot. The docility hypothesis postulates that loss in function typically leads to negative outcomes (i.e., maladaptive behaviour), unless the individual undergoes rehabilitation (an unlikely option for an individual with a progressive dementia), or more commonly, changes are made to the physical and social environment (Wister, 2005). The environmental docility hypothesis is particularly salient to the current study as it is for individuals with a progressive

dementia that the surrounding physical and social environment has the potential to play the most substantive role.

3.2 Progressively Lowered Stress Threshold Model

The proposed research is further explicated by Hall and Buckwalter's (1987) Progressively Lowered Stress Threshold (PLST) Model. While rooted in P-E theory, the PLST model focuses specifically on dementia and provides an increased understanding of the consequences of environmental stressors for individuals with dementia.

The foundation for this model is the belief that individuals with dementia exhibit three main behavioural states over the course of the disease: baseline, anxious and dysfunctional. Baseline refers to a relatively calm state, in which the individual with dementia is socially accessible and aware of or oriented to the environment. Over time, baseline behaviours are increasingly replaced by anxious and dysfunctional behaviours. Anxious behaviour occurs when the individual with dementia feels stressed, at which point an attempt is made by the individual to avoid the offending stimuli. If the individual continues to experience stress (i.e., is unable to avoid the negative stimuli), dysfunctional or catastrophic behaviour can result. Examples of dysfunctional behaviour include fearfulness, agitation and combativeness (Hall & Buckwalter, 1987).

The model is conceptually linked to the psychological stress and coping theories proposed by Lazarus (1966, in Hall & Buckwalter, 1987), and Selye (1980, in Hall & Buckwalter, 1987). For example, if biological mechanisms are compromised, as is the case in dementia, an individual's ability to cope with the surrounding environment is impaired (Lazarus, 1966, in Hall & Buckwalter, 1987). Normal sensory and physical

changes associated with the aging process, combined with the sensory and cognitive losses associated with dementia, therefore place the individual with dementia at higher risk for dysfunctional behaviour (Foster et al., 1986, in Hall & Buckwalter, 1987). As the disease progresses, neuronal cell loss renders the individual with dementia less able to receive and process stimuli and information from the surrounding environment and decreases the existing stress threshold (which is greatly dependent on intact cerebral functioning) (Hall & Buckwalter, 1987). Dysfunctional behaviour is believed to result when the anxiety associated with environmental stimuli exceeds the stress threshold of the individual with dementia. In accordance with this premise, stimuli in the SCU physical bathing environment (lack of privacy, less than optimal air and water temperature, inadequate lighting, high noise levels, institutional appearance) may provoke sufficient anxiety to exceed the stress threshold of residents resulting in agitation and combativeness.

The PLST model proposes that an individual's baseline behavioural state (and maximum functioning) can be achieved by supporting losses in a prosthetic manner and by controlling those factors believed to create stress (i.e., internal/external demands to function beyond the limits imposed by cortical deterioration, competing multistimulus situations) (Hall & Buckwalter, 1987, p.403). It is important to note however, that the quality of a stimulus and not just the quantity of a stimulus is also key. The reduction of stimuli to which an individual is exposed should not be interpreted to mean a complete absence of stimuli. Drawing on their model, Hall and Buckwalter (1987) advocate that the environment be modified (through the quality and quantity of stimuli) to support

losses and enhance safety, and that ongoing education and support be provided to caregivers.

Lawton and Nahemow's (1973) Ecological Model of Aging and Hall and Buckwalter's (1987) Progressively Lowered Stress Threshold model provide valuable insight as to the influence of the organizational and physical bathing environment on the occurrence of bathing-related agitation. The majority of residents in B.C. SCUs experience significant cognitive impairment that substantively diminishes their level of competence and stress threshold. In a SCU in which few environmental features, identified in the preceding literature as important, are present (i.e., bathing policy, staff training, permanent staff assignment, privacy, appropriate temperature control, lighting, noise, homelike décor and side or end entry bathtubs), the incongruence between environmental press and individual competence (or environmental stimuli and the resident's stress threshold) is likely to result in maladaptive resident behaviour such as agitation and combativeness. Conversely, facilities in which such environmental features are present are likely to help minimize the incongruence between press and competence (or stimuli and stress threshold) and, as a result, report fewer incidents of maladaptive (i.e., agitated) behaviour during the bathing process.

3.3 Present Study

As noted in the previous chapter, little is known about the prevalence of bathing-related agitation in Canadian SCUs or the relative contribution of the organizational and physical bathing environment to bathing-related agitation. Consequently, the objectives of this study were to: 1) determine the extent of bathing-related agitation on B.C. Special Care Units (SCUs); 2) identify the characteristic features of organizational and physical

bathing environments in B.C. SCUs and the extent to which organizational and physical environmental features recommended in the literature as reducing bathing-related agitation have been implemented; 3) explore the role of organizational and physical environmental features of the bathing area in the occurrence of bathing-related agitation; 4) determine the impact of bathing-related agitation on staff; and 5) identify practices used by staff to deal with bathing-related agitation.

3.3.1 Hypotheses

Based on the preceding literature review and theoretical framework it was hypothesized that:

1. Baths in SCUs that have a bathing policy, regular staff training, or permanent staff assignment will involve less agitation.

Rationale: Bathing policy, staff training and permanent assignment of bath aides have each been identified as critical components in the provision of quality caregiving (Hoeffler et al., 2002). Previous research (Maxfield et al., 1996; Hoeffler et al., 1997) demonstrates that staff education/training can dramatically reduce the number of aggressive incidents during bathing. Having consistent and permanently assigned bath aides allows for the determination of how best to individualize the bathing process for each resident (Rader et al., 1996), and provides bath staff with the opportunity to develop a repertoire of approaches for ensuring the comfort of residents during the bathing process.

2. Baths in SCUs that provide privacy and utilize recommended temperature control methods, lighting, noise control, homelike décor, or side or end-entry bathtubs will involve less agitation.

Rationale: While minimal empirical data exist in this area, the rationale for the inclusion of the provision of privacy, appropriate temperature control and lighting is extrapolated from the recommendations suggested by experts in the field of dementia care and design (Brawley, 2002; Calkins, 2002). The manipulation of the amount of stimulation and noise to which a resident being bathed is exposed has been noted as one of the most effective nonpharmacologic interventions for reducing disruptive behaviour (Brawley, 2002). Given that the bathing areas of many SCUs bear little resemblance to bathing areas experienced by residents prior to the onset of their dementia (Calkins, 2002; Sloane et al., 1995b), a more homelike bathing environment can contribute to feelings of comfort and security among residents (Epp et al., 2001). Mechanical lifts associated with lift-over bathtubs have also been noted to provoke fear and apprehension in cognitively-impaired residents (Namazi & Johnson, 1996; Kovach & Meyer-Arnold, 1996; Epp et al., 2001).

CHAPTER 4: METHODOLOGY

4.1 Overview of Research Design

This study utilized a cross-sectional research design. Between May 2004 and May 2005, four questionnaires were delivered to facility administrators and bath staff in Special Care Units (SCUs) across British Columbia to gather information regarding: 1) the number and type of agitated behaviours witnessed during the bathing process²; 2) the organizational and physical environmental features of each bathing area³; 3) the perceptions and experiences of bath staff; and 4) the demographics of the SCU residents (to preclude the need to obtain consent forms from all residents in B.C. SCUs, only the aggregate characteristics of the residents in each facility were collected). All four questionnaires were pilot tested at a SCU in the Southern Interior of B.C.; no items were added or deleted as a result. Table 4.1 provides an overview of the research design.

² The term “bathing process” refers to the time the resident is first approached to the time the resident leaves the bathing area at the conclusion of the bath.

³ For the purposes of this study, organizational environmental features include bathing policy, staff training and staff assignment, while physical environmental features include the provision of privacy, temperature control, lighting, noise, homelike décor, and bathing equipment.

Table 4.1 Overview of Research Design

Sample	Research Questions to Be Answered	Data Collection Methods	Data to be Collected
All (90) SCUs in British Columbia	<ol style="list-style-type: none"> 1. Frequency of bathing-related agitation 2. Types of bathing-related agitation most commonly displayed 3. Characteristic features of organizational and physical bathing environment 4. Relative importance of organizational & physical environmental features on bathing-related agitation 5. Impact of bathing-related agitation on staff 6. Practices used by staff to deal with bathing-related agitation 	Mail-out survey delivered to: <ol style="list-style-type: none"> a) administrators b) bath aides 	<ol style="list-style-type: none"> a) <i>From administrator:</i> <ul style="list-style-type: none"> • Resident characteristics • Organizational features present • Physical features present • Incident reports involving bathing over the last year b) <i>From bath aide(s):</i> <ul style="list-style-type: none"> • Bath aide characteristics • Number/type of agitated behaviours witnessed during bathing over a two-week period

4.2 Sample

4.2.1 Sampling Frame

At the time of the study, no comprehensive directory of SCUs in B.C existed. Consequently, the researcher contacted each of the five health authorities in B.C. (Fraser Health Authority, Interior Health Authority, Northern Health Authority, Vancouver Coastal Health Authority, and Vancouver Island Health Authority) to inquire as to the individual in charge of residential care. Once this contact person was identified, an email was sent asking for a list of the SCUs in their region. The email explained that for the purposes of the study a SCU was a unit that possessed: a) a physically distinct area for dementia care; b) a secured area; c) a majority of residents with a dementia diagnosis; d) staff who receive dementia-specific training; and e) special activities and programs designed for residents with dementia. Only two individuals were able to readily provide

the researcher with a complete list of SCUs in their respective health authority. Individuals in the remaining three health authorities were only able to provide lists for some of the health service delivery areas. Consequently, the researcher had to contact the appropriate individual within each of the missing health service delivery areas. Again, an email detailing the study and inclusion criteria for the SCUs was sent out to each individual. Using this approach, the researcher was able to generate a list of 90 SCUs province-wide. The geographic distribution of these is shown in Table 4.2. As can be seen, 22 were in the Fraser Health Authority, 17 in Interior Health, 5 in the Northern Health Authority, 31 in Vancouver Coastal and 15 in the Vancouver Island Health Authority.

4.2.2 Sampling Procedure and Data Collection

A package containing an introductory letter⁴, a letter of support for the project from the Alzheimer Society of B.C., consent forms for the Director of Care and bath staff⁵, an Agitated Behaviour Checklist, a Bathing Area Therapeutic Environment Rating Scale (BATHERS), three Bath Aide Information Surveys (complete with envelopes), a Resident Background Information Sheet and a self-addressed⁶ return envelope was mailed to the administrators of all 90 SCUs between May and June 2004. Facilities in the Fraser Health Authority also received a letter of support from the Manager of Residential Capacity Building for the region. Facilities were also asked to include a copy of their bathing policy in the return envelope. One to two weeks following the mail-out for each health authority, the researcher contacted facilities to confirm that the

⁴ See Appendix B

⁵ See Appendix C

⁶ Due to the varying sizes of the SCUs and the subsequent varying weight of the completed packages, envelopes were not stamped.

Administrator/Director of Care had received the package and to answer any questions/concerns they may have had. Initial response to the project was positive. However, a number of facilities were unable to collect the data prior to the start of the summer vacation period, and requested that they postpone participation until the Autumn. Between September 2004 and April 2005 monthly follow-up phone calls were made to facilities that had not returned completed surveys in order to remind/encourage Administrators/Directors of Care (hereafter referred to as Directors of Care). Once a completed survey package was received from a facility, a card was mailed thanking the Director of Care and bath staff for their participation in the project. Included in the card was a request for a photograph of the facility's bathing area.

By the time data collection was terminated in May 2005, 54 of the 90 SCUs had agreed to participate (for a response rate of 60%), and 53 SCUs had returned the surveys (one package was lost in the mail). Incomplete packages were received from six facilities resulting in a final sample size of 47 (or 52.2% of B.C. SCUs). Reasons for non-participation among the remaining 36 facilities included a) being too busy with care issues (n=11), b) staffing issues (n=8), c) being too busy with other projects (n=6), d) renovations (n=1), and e) facility for sale (n=1). Nine facilities failed to respond to the researcher despite the monthly follow-up phone calls. Table 4.2 shows the final sample by health authority and health service delivery area.

Table 4.2 Participating SCUs by Health Region and Health Service Delivery Area

Health Authority/Health Service Delivery Area	No. of SCUs	No. of Participating SCUs	Participation Rate
Fraser Health Authority			
East	5	4	68.1%
North	9	5	
South	8	6	
<i>Total</i>	22	15	
Interior Health Authority			
East Kootenay	5	3	58.8%
Kootenay-Boundary	1	1	
Thompson Cariboo Shuswap	2	1	
Okanagan	9	5	
<i>Total</i>	17	10	
Northern Health Authority			
North East	2	1	20%
North West	2	0	
Northern Interior	1	0	
<i>Total</i>	5	1	
Vancouver Coastal Health Authority			
North Shore/Coast Garibaldi	6	2	38.7%
Vancouver/Richmond	25	10	
<i>Total</i>	31	12	
Vancouver Island Health Authority			
Central Island	6	5	60%
North Island	3	1	
South Island	6	3	
<i>Total</i>	15	9	

4.2.3 Instruments

Agitated Behaviour Checklist

In order to determine the extent of bathing-related agitation in B.C. SCUs, bath aides at each facility were asked to complete one *Agitated Behaviour Checklist*⁷ for every

⁷ See Appendix D

bath conducted over a two-week period. The *Agitated Behaviour Checklist* was based on the Cohen-Mansfield Agitation Inventory – Long Form (Cohen-Mansfield, Marx, & Rosenthal, 1989) and the work of Gutman, MacFadgen and Killam (1996). It listed 26 possible behaviours in 4 categories: agitated/aggressive physical; agitated/aggressive verbal; agitated/non-aggressive physical; and agitated/non-aggressive verbal. Bath aides were instructed to complete the checklist at the conclusion of each bath by checking-off which of the listed behaviours they had witnessed from the time the resident was informed it was bath time to the time the resident left the bathing area following completion of the bath. If no agitated behaviours were witnessed, bath aides were to check “no agitated behaviour witnessed”. Pilot testing indicated that it would take bath staff only 1-2 minutes following each bath to complete the checklist.

Again, to preclude the need for consent forms to be completed by all residents in the participating SCUs, no identifying information (e.g., resident’s name, room number) was recorded on the *Agitated Behaviour Checklist*. Consequently, the unit of analysis for the study was each resident bath as opposed to each resident (the most common unit of analysis in existing bathing research).

Bathing Area Therapeutic Environment Rating Scale (BATHERS)

In order to determine the physical and organizational characteristics of each bathing area, Directors of Care were asked to complete the *Bathing Area Therapeutic Environment Rating Scale (BATHERS)*⁸. *BATHERS* consisted of 65 mostly closed-ended questions, 35 pertaining to the physical environment, 25 to the organizational environment and 5 to bathing-related agitation. The section pertaining to the physical

⁸ See Appendix E

environment included questions on bathing context (i.e., size of bathing area, number and type of bath tubs), degree of privacy, lighting and glare, noise, temperature control, and décor. The organizational section also included questions on bathing context (i.e., number and location of baths provided, duration of baths), as well as staff training and staff assignment. Questions in the agitation section sought to determine the Director of Cares' views on bathing-related agitation in their facility, and the number of incident reports involving bathing filed in the previous 12 months⁹. Questions pertaining to features recommended in the literature as reducing bathing-related agitation (28 from the physical environment section and 14 from the organizational environment section) were scored dichotomously, where 1 indicated the presence of a recommended feature and 0 indicated the absence of such a feature. A global score (ranging from 0-62) was obtained by summing the individual scores, thereby providing an indicator of the extent to which bathing-agitation reducing features recommended in the literature were present. Pilot testing of the *BATHERS* instrument indicated that it would take Directors of Care about one hour to complete.

Bath Aide Information Survey

Directors of Care were asked to distribute *Bath Aide Information Surveys*¹⁰ to those bath aides who would conduct the majority of baths during the two-week study period. The five-page survey consisted of 25 closed and open-ended questions designed to ascertain basic demographic characteristics (i.e., age, sex, years experience as a bath

⁹ An incident report must be completed by licensed facilities in response to an unusual incident or risk event (i.e., falls, aggressive behaviours, injuries, attempted elopement). The number of incident reports involving bathing provides an idea of the number of unusual incidents (be it falls, aggressive behaviours or injuries to residents or staff) experienced during the bathing process.

¹⁰ See Appendix F

aide, qualifications), the aide's perception of the facility bathing environment (i.e., training opportunities, physical features associated with bathing-related agitation) and the aide's day-to-day experiences bathing cognitively-impaired residents (i.e., strategies used to deal with agitation, job challenges, job satisfaction). Considerable effort was made to ensure that the questions were as simple and as short as possible. Pilot testing of the instrument indicated that it would take bath aides approximately 20 minutes to complete. In order to ensure anonymity bath aides were instructed not to place their name anywhere on the survey and to seal the completed survey inside the envelope provided prior to returning it to their Director of Care.

Resident Background Information Questionnaire

In order to ascertain basic demographic information regarding the residents in each SCU, Directors of Care were asked to complete a *Resident Background Information*¹¹ questionnaire. The one-page questionnaire requested information on the number of residents on the unit, the age range of the residents, the average age of the residents, the number of male and female residents, the primary diagnosis for each resident and the most recent MMSE (Mini-Mental Status Examination – Short Form) score available for each resident.

4.3 Variables

4.3.1 Dependent Variables

Bathing-related agitation, as measured by bath staff reports of the number and type of agitated behaviours witnessed in a two-week period was of primary interest in this

¹¹ See Appendix G

study. Five dependent variables were used in the analysis. The first dependent variable was an overall measure that included baths involving behaviour(s) from any of the four categories of the *Agitated Behaviour Checklist*. It was scored 1 or 0 where 1 indicated the presence of one or more examples of agitated behaviour. The other dependent variables examined each of the four categories separately; that is baths involving agitated/aggressive physical behaviour, baths involving agitated/aggressive verbal behaviour, baths involving agitated/non-aggressive physical behaviour, and baths involving agitated/non-aggressive verbal behaviour. Each of these variables was also scored as 1 or 0, where 1 indicated the presence of one or more examples of behaviours in that category.

4.3.2 Independent Variables

Independent variables for this study included: a) facility characteristics – mean age of residents, mean resident MMSE score, number of beds, size of bath area, and years facility had been operating; b) the organizational features of the bathing environment – bathing policy, training opportunities for bath aides, bath aide assignment; and c) the physical features of the bathing area – provision of privacy, temperature control, lighting, noise, homelike décor, and bathing equipment. Table 4.3 summarizes the dependent and independent variables under examination.

Table 4.3 Study Independent and Dependent Variables

Independent Variables			Dependent Variables
<i>Background Characteristics</i>	<i>Organizational Features</i>	<i>Physical Features</i>	<i>Bathing-Related Agitation</i>
Mean age of residents	Bathing policy	Provision of privacy	Baths involving any type of agitated behaviour (i.e., behaviour from any of the four categories)
Mean resident MMSE score	Training opportunities	Temperature control	Baths involving agitated/aggressive physical behaviour
Number of beds	Bath aide assignment	Lighting	Baths involving agitated/aggressive verbal behaviour
Size of bathing area		Noise	Baths involving agitated/non-aggressive physical behaviour
Age of facility		Homelike décor	Baths involving agitated/non-aggressive verbal behaviour
		Bathing equipment	

4.4 Data Analysis

4.4.1 Analysis

All of the statistics in this study were computed using SPSS 13.0. Univariate analyses were conducted to determine resident and facility demographics, and to describe the characteristic features of the organizational and physical bathing environments of participating facilities and the types of bathing-related agitation displayed by residents. Bivariate and multivariate analyses were conducted to identify the organizational and physical environmental features most strongly associated with bathing-related agitation. In the bivariate analyses, chi square statistics were used to detect statistically significant associations among the 5 dependent variables and 10 independent variables. Given the ordinal nature of the majority of data, Kendall's tau-b (used when the analysis includes both a dependent and independent variable with an equal number of categories) and tau-c

(used when the analysis includes dependent and independent variables with unequal numbers of categories) were used. The tau statistics indicate the magnitude of association, or correlation between the variables. For the sake of brevity, only zero-order associations (i.e., those between two variables) were examined.

Given the dichotomous nature of the dependent variables (baths with vs. without agitated behaviour), logistic regression was used to determine the effects of the organizational and physical bathing environment on the display of bathing-related agitation. Logistic regression estimates the likelihood of a specific event (i.e., bathing-related agitation) occurring, compared to not occurring, for each category of an independent variable while controlling for all other variables. This is important when looking at something like bathing-related agitation which may be influenced by multiple factors.

In logistic regression, the beta coefficients (β) are presented in log format which are more easily interpreted when transformed into an odds ratio by taking its exponential [$\exp(\beta_k)$]. The odds ratio that results is the estimated factor change of a positive response (i.e., presence of agitation) for individuals who are a unit apart on continuous variables (X_k), or compared to a reference category for categorical variables (DeMaris, 1995). Positive associations between variables result in an odds ratio greater than 1. For example, an odds ratio of 1.5 for size of facility would mean that for every unit increase in the size of facility, the likelihood of baths involving agitated behaviour increases by a factor of 1.5. In contrast, negative associations between variables result in an odds ratio between 1 and 0. For example, an odds ratio of 0.50 for provision of privacy would mean that the probability of baths involving agitated behaviour is half as likely in facilities in

which the bathing room door is locked during bathing as compared with facilities in which the door is not locked.

Each of the five regression models (one for each dependent variable) consists of three blocks of independent variables. The independent variables were entered into each regression model hierarchically to determine if the addition of information regarding the organizational and physical bathing environment improved prediction of bathing-related agitation beyond that afforded by resident and facility demographics. The decision was made to enter the block of organizational features prior to the block of physical features as organizational features such as policy and training were believed more likely to affect the implementation and use of physical features in the bathing environment as opposed to physical features affecting policy and training.

4.4.2 Variable Manipulation

Missing Data

The following independent variables had missing data: mean resident age (12.8%); number of beds in SCU (2.1%); size of bathing area (9.6%); facility age (2.3%); bathing policy (13.8%); initial training (1.2%); and exhaust fan use (6.8%). In order to ensure as much data as possible for the multivariate analyses, the missing data were recoded to either the mode (for ordinal variables) or the mean (for interval variables).

Bivariate Analysis

A number of the independent variables were recoded for the bivariate analyses. For example, the variable “mean resident age” was collapsed into two approximately equal categories, 70 – 79 years and 80 – 89 years. The variable “number of beds” was

recoded into three categories – small (10-19 beds), medium (20-29 beds), and large (30 or more beds). Similarly, “size of bathing area” was collapsed into two categories – small (0-199 square feet) and large (200 or more square feet). “Facility age” was recoded into four categories – 1-5 years, 6-10 years, 11-15 years, and 16 or more years. In order to ensure sufficient numbers, the variable “number of initial orientations” was collapsed into three categories - 1, 2, and 3 or more sessions. Similarly, the variable “number of homelike features” was recoded into 0-1, 2, 3 and 4 or more features. Lastly, the variable “type of bathtub” was recoded into lift-over and side/end-entry as several facilities listed one particular type of bathtub as side-entry whereas several others listed it as end-entry. The variable “mean resident MMSE score” was excluded from the bivariate analyses as only 27 facilities (57.4%) provided MMSE scores for their residents.

Multivariate Analysis

The lighting variable “number of windows present” was recoded from three categories (0, 1, 2) to two categories (0, 1 or more). Again, the independent variable “mean resident MMSE score” was excluded due to the large number of missing scores.

CHAPTER 5: RESULTS – BATHING-RELATED AGITATION AND THE BATHING ENVIRONMENT

This chapter presents the findings regarding the extent of bathing-related agitation in participating Special Care Units (SCUs) and the influence of the physical and organizational environment on bathing-related agitation. For simplification, the overall measure of agitated behaviour will be referred to as “any agitation”, the behavioural category agitated/aggressive physical will be referred to as “physical aggression”, the category agitated/aggressive verbal as “verbal aggression”, the category agitated/non-aggressive physical as “physical agitation”, and the category agitated/non-aggressive verbal as “verbal agitation”.

5.1 Facility and Resident Demographics

The 47 participating facilities ranged in capacity from 10 – 40 beds, with a mean capacity of 21 beds. Of the 1,010 residents living in the facilities 63.2% were female and 36.8% were male, with the mean number of females per facility being 13.4 (SD = 4.7), and the mean number of males being 7.8 (SD = 4.9). The mean average age of the residents was 79.8 years (SD = 4.0 years). The mean age of the youngest resident was 61.8 years (SD = 9.3 years), while the mean age of the oldest resident was 93.8 years (SD = 4.7 years). The most common primary diagnosis among residents was dementia – specifically, Alzheimer’s disease (41.2%), non-specific dementia (32.5%), vascular dementia (7.6%), mixed (i.e., combined Alzheimer’s and vascular dementia) (3.5%), frontal lobe dementia (1.9%), Korsakoff’s disease (1.9%), Lewy body dementia (1.5%),

non-specific memory loss/cognitive impairment (1%), Pick's disease (0.8%), and Huntington's Chorea (0.1%). Additional primary diagnoses included psychiatric illnesses such as schizophrenia (1.7%), organic brain disorder (0.7%), depression (0.6%), bipolar disorder (0.3%), delusional disorder (0.1%), and mental retardation (0.1%), and physical illnesses such as cerebrovascular accident (1.2%), Parkinson's disease (0.7%), head injury (0.6%), heart disease (0.4%), hypothyroidism (0.3%), degenerative brain disease (0.1%) and other miscellaneous diseases (0.5%). Only 27 of the 47 facilities provided MMSE scores for their residents; the mean MMSE score for these residents (at time of admission to the facility) was 12.4 out of 30 (SD = 2.9).¹² Table 5.1 provides a summary of the facility and resident demographics.

¹² The Mini-Mental Status Examination – Short Form (MMSE) is rarely administered by facility staff once individuals are admitted into care. A score of 10 – 20 is considered indicative of moderate cognitive impairment (National Institute for Health & Clinical Excellence, 2006).

Table 5.1 Summary of Facility and Resident Demographics

Facility size	Mean = 21 beds Range = 10-40 beds
Gender	
<i>Total sample</i>	
Females	63.2%
Males	36.8%
<i>Per facility</i>	
Females	Mean number = 13.4 (SD = 4.7)
Males	Mean number = 7.8 (SD = 4.9)
Average resident age	Mean = 79.8 years (SD = 4.0 years)
Age of youngest resident	Mean = 61.8 years (SD = 9.3 years)
Age of oldest resident	Mean = 93.8 years (SD = 4.7 years)
Primary diagnosis	
<i>Dementia</i>	92.0%
<i>Psychiatric</i>	3.5%
<i>Physical</i>	3.8%
Cognitive status	
Average MMSE score	Mean = 12.4/30 (SD = 2.9)

5.2 Bathing-Related Agitation

Of the 1,565 baths conducted during the study period, 46.8% involved some form of agitated behaviour (i.e., had an overall agitation score of 1). The most commonly displayed category of agitated behaviour was verbal agitation (36.5% of all baths), followed by physical agitation (25.4% of all baths), physical aggression (17.8% of all baths) and verbal aggression (15.4% of all baths). Nineteen percent of all baths involved both physical and verbal agitation, while approximately 10% of all baths involved

physical and verbal aggression. Table 5.2 lists the categories and the most common sub-types of bathing-related agitation displayed within each category.

Table 5.2 Bathing-Related Agitation by Category and Most Common Sub-Type

Agitated Behaviour Category	% of all baths* (n=1,565)	Most Common Sub-Type	% of all baths (n=1,565)
Verbal agitation	36.5	Complaining/negativism	16.7
Physical agitation	25.4	Physical resistance	17.4
Physical aggression	17.8	Pushing/shoving	10.1
Verbal aggression	15.4	Screaming	9.4

* Note: Column cannot be summed as some baths involved multiple behaviour categories

Table 5.3 lists the sub-types of bathing-related agitation displayed from most to least common. As can be seen, the most commonly displayed sub-types were physical resistance (17.4% of all baths), followed by complaining/negativism (16.7%), verbal resistance (16.2%), and restlessness (13.2%). The least commonly displayed sub-type of agitated behaviour was hair pulling which occurred in less than 1% of all baths.

Table 5.3 Frequency of Bathing-Related Agitation by Sub-Type

Sub-Type of Bathing-Related Agitation	% of All Baths (n=1,565)
Physical resistance	17.4
Complaining/negativism	16.7
Verbal resistance	16.2
Restlessness	13.2
Repetitive words	11.1
Pushing/shoving	10.1
Muttering	9.6
Screaming	9.4
Repetitive mannerisms	7.2
Pinching	6.6
Hitting	6.6
Slapping	6.6
Kicking	6.3
Strange noises	6.2
Cursing	6.1
Name calling	5.2
Demanding	4.9
Elbowing	4.9
Accusatory language	4.7
Threatening gestures	4.2
Scratching	3.4
Verbal threats	3.3
Throwing objects	2.2
Spitting	2.2
Biting	1.9
Pulling hair	0.7

Thirty-six of the 47 facilities provided information as to the number of incident reports involving bathing that had been filed in the 12 months prior to data collection. In more than half (25/36), no incident reports related to bathing had been filed, in four facilities one incident report had been filed, in six two incident reports had been filed, and in one facility, four incident reports had been filed..

5.2.1 Perception of Bathing-Related Agitation

As part of the *Bathing Area Therapeutic Environment Rating Scale (BATHERS)*, Directors of Care were asked to indicate whether they believed bathing-related agitation in their facility to be a minor issue (i.e., occurred less than 10% of the time), a moderate issue (i.e., occurred 10-25% of the time) or a major issue (i.e., occurred more than 25% of the time). Fifty-five percent of the Directors of Care felt that bathing-related agitation was a minor issue, 25.5% believed it to be a moderate issue, and only 10.6% felt that it was a major issue¹³. In reality, none of the participating facilities had a bathing-related agitation rate of less than 10%, 10.6% had a rate between 10% and 25%, and 89.4% had a rate greater than 25%. Table 5.4 provides the number of residents in each SCU, the number of baths given during the study period, the number of agitated baths and the agitation rate for each of the 47 participating facilities.

¹³ Four Directors of Care did not respond to the question.

Table 5.4 Bathing-Related Agitation Rates by Facility

Facility	Number of residents in SCU	Number of baths given	Bath to resident ratio*	Number of agitated baths	Agitation rate (%)
1	15	30	2:1	11	36.7
2	36	67	1.9:1	21	31.3
3	24	23	1:1	8	34.8
4	30	30	1:1	11	36.7
5	23	29	1.3:1	19	65.5
6	20	13	0.7:1	8	61.5
7	12	24	2:1	13	54.2
8	18	31	1.7:1	18	58.1
9	26	33	1.3:1	28	84.9
10	20	34	1.7:1	19	55.9
11	27	33	1.2:1	10	30.3
12	28	55	2:1	27	49.1
13	17	36	2:1	25	69.4
14	10	17	1.7:1	11	64.7
15	25	27	1:1	19	70.4
16	26	28	1:1	4	14.3
17	28	60	2:1	19	31.7
18	28	38	1.4:1	22	57.9
19	17	39	2:1	9	23.1
20	22	15	0.7:1	11	73.3
21	16	24	1.5:1	12	50.0
22	23	32	1.4:1	18	56.3
23	19	30	1.6:1	4	13.3
24	20	35	1.8:1	29	82.9
25	21	35	1.7:1	11	31.4
26	23	36	1.6:1	27	75.0
27	23	23	1:1	7	30.4
28	24	50	2:1	27	54.0
29	14	26	2:1	14	53.9

Facility	Number of residents in SCU	Number of baths given	Bath to resident ratio*	Number of agitated baths	Agitation rate (%)
30	22	50	2:1	45	90.0
31	14	26	2:1	9	34.6
32	18	34	2:1	21	61.8
33	18	20	1:1	15	75.0
34	22	43	2:1	17	39.5
35	23	16	0.7:1	10	62.5
36	20	41	2:1	13	31.7
37	26	30	1.2:1	8	26.7
38	18	36	2:1	23	63.9
39	16	23	1.4:1	13	56.5
40	15	27	1.8:1	15	55.6
41	13	14	1:1	6	42.9
42	12	11	1:1	5	45.5
43	40	72	1.8:1	21	29.2
44	20	33	1.7:1	14	42.4
45	34	65	2:1	12	18.5
46	14	19	1.4:1	12	63.2
47	30	52	1.7:1	12	23.1

* The bath to resident ratio provides an approximate indication of the number of baths conducted per resident during the study period

5.3 Organizational Bathing Environment

5.3.1 Bathing Context

In the majority of participating facilities (85.1%), residents are bathed once a week. Six facilities bathe their residents twice a week, and one facility bathes residents three times a week. The predominant method of bathing is by tub bath in a common bathing area. Most facilities (78.7%) ask residents or their family members about their bathing preferences upon admission to the facility, and in all but six facilities residents

are given the choice of bathing or showering. While the day and time of a resident's bath is primarily determined by the resident and/or family member, 25.5% of facilities indicated that bath day and time is dictated by the bed/room occupied by the resident or by staffing availability. An additional 17% of facilities indicated that the combination of the resident/family member's wishes, the bed/room occupied by the residents and/or staffing availability influenced bath day and time. All facilities schedule resident baths before and/or after breakfast. Nineteen percent of facilities also schedule resident baths between lunch and the mid-afternoon shift change, 44.7% schedule them between the mid-afternoon shift change and dinner, and 40.4% schedule them after dinner. Resident baths typically last between 20 and 30 minutes, although some are as short as 15 minutes or as long as 45 minutes. A summary of the organizational bathing context is provided in Table 5.5.

Table 5.5 Organizational Bathing Context

Organizational Feature	% of Facilities (n=47)
Number of times residents bathed per week	
Once	85.1%
Twice	12.8%
Three times	2.1%
Primary method of bathing	
Tub bath	80.9%
Shower	19.1%
Primary location of bath	
Common bath area	97.9%
Resident bathroom	2.1%
Bathing preferences established on admission	
Yes	78.7%
No	12.8%
No response	8.5%

Organizational Feature	% of Facilities (n=47)
Choice of bathing method available	
Yes	85.1%
No	12.8%
No response	2.1%
Day/time of bath determined by	
Resident &/or family member	53.2%
Bed/room occupied by resident &/or staff availability	25.5%
Combination of above	17.0%
No response	4.3%
Bath schedule*	
Before &/or after breakfast	100%
Between lunch & afternoon shift change	19.1%
Between afternoon shift change & dinner	44.7%
After dinner	40.4%
No response	2.1%
Duration of baths	
< 15 minutes	17.0%
20-30 minutes	63.8%
40-45 minutes	14.9%
No response	4.3%

*Note: Column cannot be summed as more than one response was permitted

5.3.2 Bathing Policy

Less than one third of participating facilities have a bathing policy. Copies of the bathing policies were received from 8 of the 15 facilities.

5.3.3 Staff Training

In the majority of facilities (83%), residents are bathed by individuals who have completed the Residential Care Aide/Long-Term Care Aide course offered at a number of post-secondary institutions throughout B.C. and elsewhere. In several facilities, residents

are also bathed by qualified LPNs and RNs. Consequently, staff in most facilities had received training in bathing procedures prior to working in their current position. While on the job training is provided by almost all facilities, the type of training varies. Eighty-one percent of facilities offer an orientation (to familiarize staff with the bathing equipment and procedures), while 17% offer a training session (instruction on how to bathe individuals with dementia). In terms of the number of sessions provided, 34% of facilities offer one orientation session, 23.4% offer two, and 17.1% offer three or more orientation sessions. The most commonly discussed topics during orientation and/or training are mechanics of bathing (83%), safety information (78.7%), individualization of care (72.3%), strategies to decrease agitation (63.8%), and general dementia information (51.1%).

Only 42.6% of facilities offer training in addition to the initial orientation and/or training session. Commonly covered topics include general information about dementia (31.9%), strategies to decrease agitation (27.7%), safety information (23.4%), individualization of care (21.3%), and mechanics of bathing (19.1%). Less than 11% of facilities offer such additional training on an annual basis, while 14.9% offer it on an as needed basis. Table 5.6 provides a summary of bathing-related staff training.

Table 5.6 Bathing-Related Staff Training

Training Feature	% of Facilities (n=47)
On the job training provided	
Yes	97.9%
No	0%
No response	2.1%
Type of on the job training provided	
Orientation	80.9%
Training	17.0%
No response	2.1%
Number of initial sessions provided	
<i>Orientations</i>	
One	34.0%
Two	23.4%
Three or more	17.1%
No response	8.5%
<i>Training</i>	
One	17.0%
Topics covered during initial session*	
Mechanics of bathing	83.0%
Safety information	78.7%
Individualization of care	72.3%
Strategies to decrease agitation	63.8%
General dementia information	51.1%
No response	8.5%
Additional training provided	
Yes	42.6%
No	57.4%
Topics covered during additional training*	
General dementia information	31.9%
Strategies to decrease agitation	27.7%
Safety information	23.4%
Individualization of care	21.3%
Mechanics of bathing	19.1%
No response	2.1%

Training Feature	% of Facilities (n=47)
Frequency of additional training	
Once a month	2.1%
Annually	8.5%
As requested by staff	2.1%
As required	14.9%
Rarely	8.5%
N/A	53.2%
No response	10.6%

*Note: Column cannot be summed as more than one response was permitted

5.3.4 Staff Assignment

Slightly more than one-third of facilities have a dedicated bath team or individual. While 36.2% of facilities have one or two dedicated bath staff, 27.7% have four or more. In the majority of facilities (59.6%), one to two staff members are present during a resident's bath.

Table 5.7 Bathing Staff Assignment

Staff Assignment Feature	% of Facilities (n=47)
Dedicated bath team	
Yes	34.0%
No	66.0%
Number of bath staff on unit	
One	12.8%
Two	23.4%
Three	10.6%
Four or more	27.7%
No response	25.5%
Number of bath staff present during bath	
One	29.8%
One to two	59.6%
Two	8.5%
No response	2.1%

5.3.5 Perceived Importance of Organizational Environment

As part of BATHERS, Directors of Care were asked to indicate which features of the organizational environment they believed to be most important - bathing policy, regular staff training or permanent staff assignment. Almost two thirds of Directors of Care ranked permanent staff assignment as the most important organizational variable. More than half of the Directors of Care ranked regular staff training as the second most important organizational variable.

Table 5.8 Organizational Features Perceived Most Important by Directors of Care

Organizational Feature	% of Directors of Care (n=47)
Most important organizational feature	
Permanent staff assignment	61.7%
Regular staff training	21.3%
Bathing policy	10.6%
No response	6.4%
Second most important organizational feature	
Regular staff training	55.3%
Bathing policy	25.5%
Permanent staff assignment	8.5%
No response	10.6%

5.4 Physical Bathing Environment

5.4.1 Bathing Context

Participating facilities range in years since establishment from 1 to 35, with a mean of 11.8 years (SD = 7.4 years). Facility bathing areas varied in size from 50 – 500 square feet, with an average size of 195 square feet. Forty percent of facilities had made renovations to their bathing area since its original construction. The majority of facilities (78.8%) have at least one bathtub and one shower; one facility has only a shower, while

eight facilities only have a bathtub. Most bathing areas (72.3%) also contain a toilet and sink.

Table 5.9 Physical Bathing Context

Physical Feature	% of Facilities (n=47)
Age of facility	Mean = 11.8 years (SD = 7.4 years)
Size of bathing area	Mean = 195.0 sq. ft Range = 50 -500 sq. ft
Bathing area renovated	
Yes	40.4%
No	59.6%
Presence of bath tub &/or shower	
One bathtub & one shower	74.5%
Two bathtubs & one shower	4.3%
Bathtub only	17.0%
Shower only	2.1%
No response	2.1%
Presence of additional features	
Toilet & sink	72.3%
Toilet only	6.4%
Sink only	8.5%
No toilet or sink	12.8%

5.4.2 Provision of Privacy

Almost all facilities report bathing only one resident at a time in the bathing area. Most facilities (74.5%) provide some form of visual privacy when showering a resident, either through the use of a curtain or door. More than one third of facilities (n=17) store supplies (the most common of which are carts and incontinence products) in their bathing area. In 13 of these 17 facilities, staff access supplies while a bath is in progress. Although the majority of facilities (97.9%) keep the bathing room door closed during

resident baths, only 53.2% of facilities actually lock the door while a bath is being conducted.

Table 5.10 Provision of Privacy

Privacy Feature	% of Facilities (n=47)
Number of baths/showers conducted at one time	
One	93.6%
Two	2.1%
No response	4.3%
Visual privacy provided during shower	
Yes	74.5%
No	6.4%
N/A	17.0%
No response	2.1%
Supplies stored in bathing area	
Yes	36.2%
No	63.8%
Supplies accessed while baths conducted	
Yes	27.7%
No	72.3%
Door kept closed during baths	
Yes	97.9%
No	2.1%
Door locked during baths	
Yes	53.2%
No	46.8%

5.4.3 Temperature Control

In terms of temperature control, 51% of facilities have a separate thermostat for their bathing area, 38.3% have a heat lamp and 34.1% have a towel warmer. Thirty-eight percent of facilities have at least two of these temperature control features, while 14.9% of facilities have none.

Table 5.11 Temperature Control Features

Temperature Control Feature	% of Facilities (n=47)
Type of temperature control present	
Thermostat only	25.5%
Heat lamp only	14.9%
Towel warmer only	6.4%
Thermostat & heat lamp	10.6%
Thermostat & towel warmer	14.9%
Heat lamp & towel warmer	12.8%
No separate temperature control	14.9%

5.4.4 Lighting

Just under half (46.9%) of the facilities have one or more windows in their bathing area; none of the bathing areas contain skylights. Artificial lighting is predominantly provided by ambient lighting or recessed lighting fixtures. Fewer than 10% of facilities use cove lighting, wall lighting, or track lighting fixtures. The majority of facilities are not able to adjust the level of lighting through the use of individually switched lights or dimmer switches. Less than half of the facilities have a light fixture present in the shower stall.

Table 5.12 Lighting Attributes

Lighting Attributes	% of Facilities (n=47)
Number of windows present	
None	53.2%
One	42.6%
Two or more	4.3%
Most common lighting fixtures*	
Ambient	83.0%
Recessed	25.5%
Cove	6.4%
Wall	4.3%
Track	2.1%
No response	2.1%
Lights individually switched	
Yes	48.9%
No	51.1%
Lights on dimmer switch	
Yes	10.6%
No	89.4%
Light fixture in shower stall	
Yes	44.7%
No	27.7%
N/A	17.0%
No response	10.6%

*Note: Column cannot be summed as more than one response was permitted

5.4.5 Noise Levels

The most common types of wall covering in facility bathing areas are tile and paint. In 27.7% of facilities, bathing area walls are covered solely with tile, in 21.3% of facilities they are covered solely by paint, and in 27.7% of facilities a combination of paint and tile is found. Only two facilities use moisture-resistant acoustical panels while four facilities use vinyl wall coverings.

More than half (59.6%) of facilities have an exhaust fan in their bathing area, the majority of which use the fan during resident baths. Slightly more than one third of facilities play music during resident baths.

Table 5.13 Noise Control during Bathing

Noise Control Feature	% of Facilities (n=47)
Types of wall covering	
Paint & tile	27.7%
Tile only	27.7%
Paint only	21.3%
Vinyl wall coverings only	6.4%
Wallpaper & paint	6.4%
Paint & vinyl	4.3%
Wallpaper only	2.1%
Wallpaper & tile	2.1%
Acoustical panels only	2.1%
Exhaust fan used during baths	
Yes	42.6%
No	12.8%
No exhaust fan present	38.3%
No response	6.4%
Music played during baths	
Yes	34.0%
No	59.6%
No response	6.4%

5.4.6 Homelike Décor

Just under one third of bathing areas have beige/light brown walls, while 25.5% have white, off-white or cream coloured walls. The most common homelike décor features in facility bathing areas are cabinets (66.0% of facilities), pictures (46.8%), and comfortable chair (38.3%). Other common features include knickknacks, plants and

dressing tables. Fifty-one percent of facilities have at least three homelike décor features in their bathing areas.

Table 5.14 Homelike Décor

Feature	% of Facilities (n=47)
Common wall colours	
Beige/light brown	29.8%
Cream/off-white	14.9%
White	10.6%
Pink	10.6%
Yellow	8.5%
Green	8.5%
Grey	4.3%
Blue	2.1%
No response	10.6%
Presence of*	
Cabinet	66.0%
Pictures	46.8%
Comfortable chair	38.3%
Knickknacks on display	31.9%
Plants	29.8%
Vanity or dressing table	29.8%
No response	2.1%
Number of homelike features present	
None	4.3%
One	14.9%
Two	29.8%
Three	19.1%
Four	14.9%
Five or more	17.0%

* Note: Column cannot be summed as more than one response was permitted

5.4.7 Bathing Equipment

The majority of facilities (72.3%) use lift-over bathtubs, most of which raise residents 4-5 feet into the air. The most common model of bathtub is the Arjo Century

bathtub followed by the Arjo Carousel. Pictures of these and other bathtubs in use by participating facilities can be found in Appendix H.

Table 5.15 Bathing Equipment

Bathing Equipment	% of Facilities (n=47)
Type of bathtub	
Lift-over	72.3%
Side-entry/end-entry	25.5%
N/A	2.1%
Lift height	
4-5 ft	44.7%
3-3.5 ft	21.3%
2-2.5 ft	4.3%
N/A	27.7%
No response	2.1%
Most common bathtub models	
Arjo Century	44.7%
Arjo Carousel	10.6%
Arjo Serenade	6.4%
Apollo	6.4%

5.4.8 Perceived Importance of Physical Environment

As part of BATHERS, Directors of Care were asked to indicate which features of the physical environment they believed to be most important – privacy, temperature control, lighting, noise, homelike décor or bathing equipment. More than one third of Directors of Care ranked privacy as the most important physical feature, while slightly more than one quarter ranked temperature control as the second most important physical feature. Interestingly, only six Directors of Care rated homelike décor as the most important physical feature, and only one rated noise control as being the most important physical feature.

**Table 5.16 Physical Environment Features Perceived
Most Important by Directors of Care**

Physical Feature	% of Directors of Care (n=47)
Most important physical feature	
Privacy	36.1%
Temperature control	21.3%
Bathing equipment	19.1%
Homelike décor	12.8%
Lighting	0%
Noise control	2.1%
No response	8.5%
Second most important physical feature	
Temperature control	27.7%
Bathing equipment	19.1%
Homelike décor	14.9%
Noise control	12.8%
Privacy	8.5%
Lighting	6.4%
No response	10.6%

5.5 Bivariate Analyses

Bivariate analyses were conducted between all independent (i.e., facility characteristics, organizational features of the bathing environment and physical features of the bathing environment) and dependent (i.e., bathing-related agitation) variables¹⁴. Only the associations between the organizational and physical environmental features and bathing-related agitation are presented here. The reader is advised that in both the

¹⁴ Data were first analyzed at the facility level using rates of bathing-related agitation. However, the relatively small sample size (47 facilities) lacked sufficient statistical power to detect a relationship between the organizational and physical environmental features and bathing-related agitation. In order to increase the statistical power of the sample, data from the *Agitated Behaviour Checklists* were combined with that of the *Bathing Area Therapeutic Environmental Rating Scale*. As the baths in each facility were conducted in the same bathing room by the same staff, residents were exposed to the same organizational and physical features of the surrounding bathing environment. By attributing the same physical and organizational characteristics to each bath conducted in a particular facility, the sample size was increased from 47 (the number of facilities) to 1,565 (the number of baths), and the unit of analysis became baths involving agitation as opposed to agitation rates.

bivariate and multivariate results section, the words significant or non-significant are used to refer to statistically significant or non-statistically significant relationships between variables. Table 5.17 lists the background characteristics, organizational and physical features of the bathing environment and the bathing-related agitation variables included in the crosstabular analyses.

Table 5.17 Key Independent Variables Included in Bivariate Analysis

Independent Variables	Dependent Variables
Background Characteristics	
Mean resident age	Baths involving any type of agitation*
Number of beds in SCU	
Size of bathing area	Baths involving physical aggression
Age of facility	Baths involving verbal aggression
Organizational Environment	
Presence of bath policy	Baths involving physical agitation
Presence of dedicated bath team	
Initial staff training	Baths involving verbal agitation
<i>Type of on the job training</i>	
Additional staff training	
Physical Environment	
Provision of privacy	
<i>Locking bathing room door</i>	
Temperature control	
<i>Presence of temperature control methods</i>	
Lighting	
<i>Presence of windows</i>	
Noise control	
<i>Use of exhaust fan during baths</i>	
Homelike décor	
<i>Number of homelike features present</i>	
<i>Total number of recommended elements</i>	
Type of bathtub	

* Note: This is an overall measure that included baths involving behaviour from any of the four categories of the Agitated Behaviour Checklist

5.5.1 Mean Resident Age

A weak inverse relationship was found between mean resident age and baths involving any type of agitation (i.e. overall agitation score of 1) ($\tau\text{-}b = -.059, p<.05$) and verbal agitation ($\tau\text{-}b = -.105, p<.001$). Baths in facilities in which the mean resident age was between 80 and 89 years involved less overall agitation and verbal agitation than those in facilities in which the mean resident age was between 70 – 70 years.

5.5.2 Number of Beds

Contrary to what one might expect, a significant inverse association was found between the number of beds in the SCU and baths with any type of agitation ($\tau\text{-}c = -.121, p<.001$). Fifty percent of baths in smaller SCUs (i.e., 10-19 or 20-29 beds) involved some form of agitation as compared with only 26% of baths in larger SCUs (i.e., 30 or more beds). Similarly, weak inverse associations were found between the number of beds and baths involving physical aggression ($\tau\text{-}c = -.086, p<.001$), verbal aggression ($\tau\text{-}c = -.058, p<.01$), physical agitation ($\tau\text{-}c = -.072, p<.01$), and verbal agitation ($\tau\text{-}c = -.112, p<.001$).

5.5.3 Size of Bathing Area

No significant relationship was found between the size of the bathing area and baths involving any type of agitation, physical aggression, verbal aggression, physical agitation or verbal agitation.

5.5.4 Age of Facility

No significant association was found between the age of the facility and baths involving any type of agitation, physical aggression, verbal aggression, physical agitation or verbal agitation.

5.5.5 Bathing Policy

No support was found for the component of the organizational environment hypothesis which posited that baths in facilities with a bathing policy would involve less agitation. The only significant relationship was a weak positive association between the presence of a bathing policy and baths involving physical aggression ($\tau\text{-}b = .087$, $p < .01$). As evident in Table 5.18, the direction of the relationship was opposite to what was predicted; that is slightly more baths in facilities with a bathing policy involved physical aggression than in facilities without a bathing policy.

Table 5.18 Number and Percentage Distribution of Baths with and without Physical Aggression by Presence of Bathing Policy

Physical Aggression during Bath	Bathing Policy		
	No	Yes	Total
No	897 84.5%	389 77.3%	1,286 82.2%
Yes	165 15.5%	114 22.7%	279 17.8%
Total	1,062 100.0%	503 100.0%	1,565 100.0%

$\tau\text{-}b = .087$, $p < .01$

5.5.6 Dedicated Bath Team

There was also no support for the component of the organizational environment hypothesis that posited that baths in facilities with a dedicated bath team would involve less agitation. No significant relationship was found between having a dedicated bath team and baths involving any type of agitation (i.e. overall agitation score of 1), physical aggression, verbal aggression or physical agitation. Contrary to what one might expect, a weak positive relationship was found between the presence of a dedicated bath team and baths with verbal agitation ($\tau\text{-}b = .065$ $p < .05$). As shown in Table 5.19, baths in facilities with a dedicated bath team involved more verbal agitation than those in facilities in which there is no dedicated bath team.

Table 5.19 Number and Percentage Distribution of Baths with and without Verbal Agitation by Presence of Dedicated Bath Team

Verbal Agitation during Bath	Dedicated Bath Team		
	No	Yes	Total
No	633 65.9%	360 59.5%	993 63.5%
Yes	327 34.1%	245 40.5%	572 36.5%
Total	960 100.0%	605 100.0%	1,565 100.0%

$\tau\text{-}b = .065$ $p < .05$

5.5.7 Staff Training

Initial Training

Some support was found for the hypothesis that baths in facilities with staff training opportunities would involve less agitation. A weak inverse association was found between the type of training provided and baths involving physical agitation ($\chi^2 =$

7.99, $p < .01$). As shown in Table 5.20 baths in facilities which offer initial training to staff (i.e., instruction on how to bathe individuals with dementia) involved slightly less physical agitation than those in facilities which offer an orientation(s) (i.e., to familiarize staff with the bathing equipment and procedures).

Table 5.20 Number and Percentage Distribution of Baths with and without Physical Agitation by Type of Initial Training Provided

Physical Agitation during Bath	Type of Initial Training		
	Orientation	Training	Total
No	938 73.1%	229 81.2%	1,167 74.6%
Yes	345 26.9%	53 18.8%	398 25.4%
Total	1,283 100.0%	282 100.0%	1,565 100.0%

$\chi^2 = 7.99, p < .01$

Additional Training

The only significant relationship was a weak inverse association between the provision of additional training and baths involving verbal aggression ($\tau\text{-}b = -.058, p < .05$). As evident in Table 5.21, baths in facilities in which additional training is provided involved slightly less verbal aggression than those in facilities in which additional training is not provided.

**Table 5.21 Number and Percentage Distribution of Baths
with and without Verbal Aggression by Provision of Additional Training**

Verbal Aggression during Bath	Additional Training Provided		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	740 82.8%	584 87.0%	1,324 84.6%
<i>Yes</i>	154 17.2%	87 13.0%	241 15.4%
<i>Total</i>	894 100.0%	671 100.0%	1,565 100.0%

tau-b = -.058, p<.05

5.5.8 Provision of Privacy

Support was received for the component of the physical environment hypothesis positing that baths in facilities that provide a greater degree of privacy during bathing would involve less agitation. As shown in Table 5.22, a weak inverse association was found between locking the bathing room door and baths involving any agitation (tau-b = -.14, p<.001). Forty-one percent of baths in facilities that lock the bathing room door during resident bathing involved some form of agitation as compared with 55% of those in facilities that do not lock the door. A significant inverse relationship was also found between locking the bathing room door and baths involving physical aggression (tau-b = -.10, p<.001), verbal aggression (tau-b = -.15, p<.001), physical agitation (tau-b = -.055, p<.05), and verbal agitation (tau-b = -.12, p<.001) (see Table 5.23 – 5.26).

Table 5.22 Number and Percentage Distribution of Baths with and without Any Agitation by Provision of Privacy

Any Agitation during Bath	Door Locked During Bathing		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	292 45.1%	540 58.8%	832 53.2%
<i>Yes</i>	355 54.9%	378 41.2%	733 46.8%
<i>Total</i>	647 100.0%	918 100.0%	1,565 100.0%

tau-b = -.14, p<.001

Table 5.23 Number and Percentage Distribution of Baths with and without Physical Aggression by Provision of Privacy

Physical Aggression during Bath	Door Locked During Bathing		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	507 77.4%	785 85.5%	1,286 82.2%
<i>Yes</i>	146 22.6%	133 14.5%	279 17.8%
<i>Total</i>	647 100.0%	918 100.0%	1,565 100.0%

tau-b = -.10, p<.001

Table 5.24 Number and Percentage Distribution of Baths with and without Verbal Aggression by Provision of Privacy

Verbal Aggression during Bath	Door Locked During Bathing		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	506 78.2%	818 89.1%	1,324 82.2%
<i>Yes</i>	141 21.8%	100 10.9%	241 15.4%
<i>Total</i>	647 100.0%	918 100.0%	1,565 100.0%

tau-b = -.15, p<.001

Table 5.25 Number and Percentage Distribution of Baths with and without Physical Agitation by Provision of Privacy

Physical Agitation during Bath	Door Locked During Bathing		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	464 71.7%	703 76.6%	1,167 74.6%
<i>Yes</i>	183 28.3%	215 23.4%	241 25.4%
<i>Total</i>	647 100.0%	918 100.0%	1,565 100.0%

tau-b = -.055, p<.05

**Table 5.26 Number and Percentage Distribution of Baths
with and without Verbal Agitation by Provision of Privacy**

Verbal Agitation during Bath	Door Locked During Bathing		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	368 56.9%	628 68.1%	993 63.5%
<i>Yes</i>	183 43.1%	215 31.9%	241 36.5%
<i>Total</i>	647 100.0%	918 100.0%	1,565 100.0%

tau-b = -.12, p<.001

5.5.9 Temperature Control

Contrary to what one might expect, a significant positive association was found between the presence of temperature control methods and baths involving any type of agitation (tau-b = .13, p<.001). Fifty percent of baths in facilities in which separate temperature control methods are present in the bathing area involved some form of agitation as compared with 33.3% of baths in facilities without such temperature control methods. Similarly, weak positive associations were found between having separate temperature control methods and baths with physical aggression (tau-b = .057, p<.05), verbal aggression (tau-b = .075, p<.01), physical agitation (tau-b = .092, p<.001) and verbal agitation (tau-b = .14, p<.001).

5.5.10 Lighting

Little support was found for the component of the physical environment hypothesis which posited that baths in facilities with natural lighting would involve less agitation. As shown in Table 5.27, baths in facilities in which at least one window is

present in the bathing area involved slightly less verbal aggression than those in facilities with no windows ($\tau\text{-}b = -.078, p < .01$).

Table 5.27 Number and Percentage Distribution of Baths with and without Verbal Aggression by Presence of Windows

Verbal Aggression during Bath	Windows in Bathing Area		
	<i>None</i>	<i>One or more</i>	<i>Total</i>
<i>No</i>	731 82.1%	593 87.9%	1,324 84.6%
<i>Yes</i>	159 17.9%	82 12.1%	241 15.4%
<i>Total</i>	890 100.0%	675 100.0%	1,565 100.0%

$\tau\text{-}b = -.078, p < .01$

5.5.11 Noise Control

Significant inverse associations were found between exhaust fan use and baths involving any agitation (i.e. overall agitation score of 1) ($\tau\text{-}c = .059, p < .05$), physical aggression ($\tau\text{-}c = .082, p < .001$) and verbal aggression ($\tau\text{-}b = .051, p < .01$). Contrary to what was hypothesized, baths in facilities in which exhaust fans are used involved less overall agitation and physical and verbal aggression than those in facilities that either do not use an exhaust fan or do not have an exhaust fan to use.

5.5.12 Homelike Décor

Contrary to what one would expect, a weak positive relationship was found between the number of homelike features and baths involving verbal aggression ($\tau\text{-}c = .057, p < .01$) (see Table 5.28).

Table 5.28 Number and Percentage Distribution of Baths with and without Verbal Aggression by Number of Homelike Features

Verbal Aggression during Bath	Number of Homelike Features				
	0-1 features	2 features	3 features	4 or more features	Total
No	289 92.0%	352 84.8%	264 77.4%	419 84.6%	1,324 84.6%
Yes	25 8.0%	63 15.2%	77 22.6%	76 15.4%	241 15.4%
Total	314 100.0%	415 100.0%	341 100.0%	495 100.0%	1,562 100.0%

tau-c = .057, p<.01

5.5.13 Bathing Equipment

Significant associations were found between the type of bathtub in use and baths with any agitation ($\chi^2 = 9.92$, $p < .01$), physical agitation ($\chi^2 = 7.88$, $p < .01$) and verbal agitation ($\chi^2 = 9.76$, $p < .01$); however, the direction of the relationships was opposite to what was predicted. Baths in facilities with side-entry or end-entry bathtubs involved more overall agitation, physical agitation and verbal agitation than those in facilities with lift-over bathtubs. Table 5.29 summarizes the significant bivariate associations between the organizational and physical environmental variables and the five dependent variables.

Table 5.29 Summary of Statistically Significant Bivariate Associations

Baths involving any agitation	Baths involving physical aggression	Baths involving verbal aggression	Bath involving physical agitation	Baths involving verbal agitation
Mean age of residents (↓)				Mean age of residents (↓)
Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)
	Has bathing policy (↑)	Additional training offered (↓)	Initial training offered (↓)	Has bath team (↑)
Bathing room door locked during bathing (↓)	Bathing room door locked during bathing (↓)	Bathing room door locked during bathing (↓)	Bathing room door locked during bathing (↓)	Bathing room door locked during bathing (↓)
Has separate temperature control methods (↑)	Has separate temperature control methods (↑)	Has separate temperature control methods (↑)	Has separate temperature control methods (↑)	Has separate temperature control methods (↑)
		Has windows (↓)		
Exhaust fan used during bath (↓)	Exhaust fan used during bath (↓)	Exhaust fan used during bath (↓)		
		Number of homelike features (↑)		
Side/end-entry bathtub (↑)			Side/end-entry bathtub (↑)	Side/end-entry bathtub (↑)

It is important to note that while bivariate analyses contribute to an understanding of how a number of factors individually affect bathing-related agitation, they are particularly susceptible to influences from confounding factors. It is for this reason and because bathing-related agitation is subject to the simultaneous influences of both the

organizational and physical bathing environment, that the use of multivariate analyses are required.

5.6 Multivariate Analyses

Five dichotomous dependent variables and fourteen independent variables¹⁵ were used to test the hypotheses at the multivariate level. As noted in chapter four, the independent variables were entered into each of the five regression models hierarchically. Table 5.30 lists the blocks of variables in the order in which they were entered into the regression models.

Table 5.30 Variables included in Logistic Regression Analyses

Independent Variables			Dependent Variables
<i>Background Characteristics</i>	<i>Organizational Features</i>	<i>Physical Features</i>	<i>Bathing-Related Agitation</i>
Mean age of residents Number of beds in SCU Size of bathing area Age of facility	Bathing policy Training <i>Type of on-the-job training</i> <i>Additional training offered</i> Presence of dedicated bath team	Provision of privacy <i>Door locked during bathing</i> Presence of separate temperature control methods Lighting <i>Number of windows</i> Noise <i>Exhaust fan used during bath</i> Number of homelike features Type of bathtub	Baths involving any agitation* Baths involving physical aggression Baths involving verbal aggression Baths involving physical agitation Baths involving verbal agitation

* Note: This is an overall measure than included baths involving behaviour from any of the four categories of the *Agitated Behaviour Checklist*

¹⁵ All but two of which were significant at the bivariate level. While size of bathing area and age of facility were not significantly associated with bathing-related agitation at the bivariate level they were included in the multivariate analysis as control variables.

Each of the five regression analyses is presented separately. As there were only small changes to the standardized beta coefficients and strength of the odds ratio with the addition of each block, only the final block (block three) is presented for each logistic regression analysis. Again, the reader is reminded that the words significant or non-significant are used to refer to statistically significant or non-statistically significant relationships between variables.

5.6.1 Presence of Any Agitation during Bathing

As shown in Table 5.31, each of the three blocks as well as the overall model is significant (any agitation model chi-square = 94.44, $p < .001$). The strongest block of the model used to predict baths in which there is any agitation consists of the facility characteristics in the first block.

Table 5.31 Logistic Regression Model Significance for Baths Involving Any Type of Agitation

	Block Chi-Square	Block Significance	Model Chi-Square	Model Significance
Model 1	57.23	$p < .001$	57.23	$p < .001$
Model 2	17.9	$p < .01$	75.13	$p < .001$
Model 3	19.31	$p < .01$	94.44	$p < .001$

In the final model, the background characteristics, mean age of residents and number of beds in SCU, were significantly associated with the presence of any type of bathing-related agitation (see Table 5.32). The probability of baths involving agitation is reduced by a factor of 0.96 for every unit increase in mean resident age ($\beta = -.045$, odds ratio = 0.96, $p < .01$), and by a factor of 0.95 for every unit increase in the number of beds ($\beta = -.057$, odds ratio = 0.95, $p < .001$).

**Table 5.32 Logistic Regression:
Predictors of Baths Involving Any Type of Agitation**

Variable	β	S.E.	Odds Ratio
Mean age of residents	-.045**	.017	.96
Number of beds in SCU	-.057***	.013	.95
Size of bath area	.00	.001	1.00
Facility age	-.015	.011	.99
Door locked during bathing (ref = no)	-.39**	.14	.68
Appropriate temperature control (ref = no)	.15	.21	1.16
Window(s) present (ref = no)	-.035	.14	.97
Exhaust fan used during bath (ref = no)	-.076	.13	.93
Number of homelike features present	-.043	.046	.96
Type of bathtub Lift-over (ref) Side/end entry	.096	.16	1.10
Bathing policy (ref = no)	.44**	.15	1.55
Dedicated bath team (ref = no)	.46**	.15	1.59
Type of training offered Orientation (ref) Training	-.61**	.18	.55
Additional training offered (ref = no)	-.29*	.14	.75
Constant	4.99	1.54	146.41

*p<.05, **p<.01, ***p<.001

Support was received for only one component of the hypothesis pertaining to physical environmental features and the prediction of any bathing-related agitation. Of the six features examined, only a locked bathing room door (i.e. provision of privacy) was significantly associated with baths involving any agitation. The likelihood of baths involving agitation is reduced by a factor of 0.68 in facilities in which the bathing room door is locked during bathing ($\beta = -.39$, odds ratio = 0.68, $p < .01$). Interestingly, in the second model in which only the background characteristics and physical environmental features were entered, a locked bathing room door was not significantly related to the

presence of bathing-related agitation. In the final model this association only became significant with the addition of the organizational block of variables

All four features in the organizational block of variables were significant predictors of bathing-related agitation. However, contrary to what was hypothesized, the odds of baths involving any type of agitation are one and a half times higher in facilities that have a bathing policy ($\beta = .44$, odds ratio = 1.55, $p < .01$). A similar relationship was noted between baths with any type of agitation and the presence of a dedicated bath team ($\beta = .46$, odds ratio = 1.59, $p < .01$). Support was received for the staff training component of the organizational environment hypothesis. The likelihood of baths involving any agitation is reduced by almost one half in facilities in which staff receive training (instruction on how to bathe individuals with dementia) as opposed to those in which staff simply receive an orientation (to familiarize staff with bathing equipment and procedures) ($\beta = -.61$, odds ratio = .55, $p < .01$). The probability of baths involving any agitation is also reduced by a factor of 0.75 in facilities in which staff receive additional training on bathing ($\beta = -.29$, odds ratio = .75, $p < .05$).

5.6.2 Presence of Physical Aggression during Bathing

As shown in Table 5.33, each of the three blocks as well as the overall model is significant (overall model chi-square = 78.51, $p < .001$). The strongest block of the model used to predict baths involving physical aggression consists of the physical environment features, entered in the second block.

**Table 5.33 Logistic Regression Model Significance
for Baths Involving Physical Aggression**

	Block Chi-Square	Block Significance	Model Chi-Square	Model Significance
Model 1	23.67	p<.001	23.67	p<.001
Model 2	28.6	p<.001	52.27	p<.001
Model 3	26.24	p<.001	78.51	p<.001

In the final model, the background characteristic, number of beds in SCU, was significantly related to physical aggression during bathing (see Table 5.34). The probability of baths involving physical aggression is reduced by a factor of 0.95 for every unit increase in the number of beds ($\beta = -.055$, odds ratio = 0.95, $p < .01$). While the mean age of residents displayed a significant relationship with baths involving physical aggression in the first model, this association disappeared once the physical, then organizational, blocks of variables were entered into the model.

**Table 5.34 Logistic Regression:
Predictors of Baths Involving Physical Aggression**

Variable	β	S.E.	Odds Ratio
Mean age of residents	-.018	.022	.98
Number of beds in SCU	-.055**	.016	.95
Size of bath area	.000	.001	1.00
Facility age	.022	.014	1.02
Door locked during bathing (ref = no)	.021	.19	1.02
Appropriate temperature control (ref = no)	.43	.28	1.53
Window(s) present (ref = no)	-.52**	.18	.59
Exhaust fan used during bath (ref = no)	-.76***	.17	.47
Number of homelike features present	.04	.058	1.04
Type of bathtub Lift-over (ref) Side/end entry	-.24	.20	.79
Bathing policy (ref = no)	.83***	.18	2.30
Dedicated bath team (ref = no)	.27	.19	1.31
Type of training offered Orientation (ref) Training	.12	.23	1.13
Additional training offered (ref = no)	-.12	.18	.89
Constant	.70	1.96	2.02

*p<.05, **p<.01, ***p<.001

Support was received for only one component of the hypothesis pertaining to physical environmental features and the prediction of physical aggression during bathing. The presence of windows in the bathing area was significantly related to baths involving physical aggression. The likelihood of baths involving physical aggression is reduced by a factor of 0.59 in facilities in which one or two windows (as compared with no windows) are present in the bathing area ($\beta = -.52$, odds ratio = .59, $p < .01$). Contrary to what was hypothesized, a significant inverse association was noted between the use of an exhaust fan during bathing and physical aggression. The probability of physical

aggression being present during bathing is reduced by about one half in facilities in which an exhaust fan is used during bathing, as compared to those that either do not use an exhaust fan or do not have an exhaust fan to use ($\beta = -.76$, odds ratio = 0.47, $p < .001$).

Physical aggression during bathing was predicted by only one of the four features in the organizational block of variables. In contrast to what was expected, the likelihood of baths involving physical aggression is almost two and a half times higher in facilities that have a bathing policy ($\beta = .83$, odds ratio = 2.30, $p < .001$).

5.6.3 Presence of Verbal Aggression during Bathing

As shown in Table 5.35, each of the three blocks as well as the overall model is significant (overall model chi-square = 75.8, $p < .001$). The strongest block of the model used to predict baths in which there is verbal aggression consists of the physical environment features, entered in the second block.

Table 5.35 Logistic Regression Model Significance for Baths Involving Verbal Aggression

	Block Chi-Square	Block Significance	Model Chi-Square	Model Significance
Model 1	27.63	$p < .001$	27.63	$p < .001$
Model 2	30.66	$p < .001$	58.28	$p < .001$
Model 3	17.52	$p < .01$	75.8	$p < .001$

In the final model, the background characteristic, number of beds in SCU, was significantly associated with verbal aggression during bathing (see Table 5.36). The probability of baths involving verbal aggression is reduced by a factor of 0.96 for every unit increase in the number of beds ($\beta = -.055$, odds ratio = 0.96, $p < .05$). While both the number of beds in facility and the mean age of residents were initially found to be

significantly related to baths involving verbal aggression, this association disappeared once the block of physical environment features was entered into the model. The mean age of residents continued to remain non-significant with the addition of the organizational block of variables in the final model.

**Table 5.36 Logistic Regression:
Predictors of Baths Involving Verbal Aggression**

Variable	β	S.E.	Odds Ratio
Mean age of residents	-.030	.023	.97
Number of beds in SCU	-.039*	.017	.96
Size of bath area	.000	.001	1.00
Facility age	-.015	.015	.99
Door locked during bathing (ref = no)	-.52**	.19	.59
Appropriate temperature control (ref = no)	.37	.30	1.45
Window(s) present (ref = no)	-.36	.19	.70
Exhaust fan used during bath (ref = no)	-.20	.18	.82
Number of homelike features present	.058	.06	1.06
Type of bathtub Lift-over (ref) Side/end entry	-.26	.21	.77
Bathing policy (ref = no)	.59**	.21	1.81
Dedicated bath team (ref = no)	.17	.21	1.18
Type of training offered Orientation (ref) Training	-.20	.25	.82
Additional training offered (ref = no)	-.61**	.19	.54
Constant	1.23	2.03	3.44

*p<.05, **p<.01, ***p<.001

As in the two previous analyses, support was received for only one component of the hypothesis pertaining to physical environmental features and the prediction of verbal aggression during bathing. A locked bathing room door was shown to have a significant

association with baths involving verbal aggression. The likelihood of baths involving verbal aggression is reduced by a factor of 0.59 in facilities in which the bathing room door is locked during bathing ($\beta = -.52$, odds ratio = .59, $p < .01$). In the second model, in which only the background characteristics and physical environmental features were entered, verbal aggression during bathing was inversely related to the number of windows present and the use of an exhaust fan during bathing. However, both these associations became non-significant with the addition of the organizational block of variables in the final model.

Two of the four features in the organizational block of variables were significant predictors of verbal aggression during bathing. Contrary to what was anticipated, the odds of baths involving verbal aggression are almost twice as high in facilities that have a bathing policy ($\beta = .59$, odds ratio = 1.81, $p < .01$). Some support was found for the staff training component of the organizational environment hypothesis. The probability of baths involving verbal aggression is reduced by about one half in facilities in which staff receive additional training on bathing ($\beta = -.61$, odds ratio = .54, $p < .01$).

5.6.4 Presence of Physical Agitation during Bathing

As shown in Table 5.37, each of the three blocks as well as the overall model is significant (overall model chi-square = 67.67, $p < .001$). The strongest block of the model used to predict baths in which there is physical agitation consists of the facility characteristics in the first block.

**Table 5.37 Logistic Regression Model Significance
for Baths Involving Physical Agitation**

	Block Chi-Square	Block Significance	Model Chi-Square	Model Significance
Model 1	29.82	p<.001	29.82	p<.001
Model 2	26.98	p<.001	56.79	p<.001
Model 3	10.87	p<.05	67.67	p<.001

In the final model, the background characteristic, number of beds in SCU, was significantly related to physical agitation during bathing (see Table 5.38). The probability of baths involving physical agitation is reduced by a factor of 0.95 for every unit increase in the number of beds ($\beta = -.047$, odds ratio = 0.95, $p < .01$). While the mean age of residents demonstrated a significant association with physical agitation during bathing in the first and second models, this relationship disappeared once the organizational block of variables were entered into the model.

**Table 5.38 Logistic Regression:
Predictors of Baths Involving Physical Agitation**

Variable	β	S.E.	Odds Ratio
Mean age of residents	-.027	.019	.97
Number of beds in SCU	-.047**	.014	.95
Size of bath area	.001	.001	1.00
Facility age	.001	.013	1.00
Door locked during bathing (ref = no)	.10	.16	1.11
Appropriate temperature control (ref = no)	.43	.25	1.54
Window(s) present (ref = no)	-.37*	.16	.69
Exhaust fan used during bath (ref = no)	-.34*	.15	.71
Number of homelike features present	-.10	.05	.91
Type of bathtub Lift-over (ref) Side/end entry	.23	.18	1.26
Bathing policy (ref = no)	.28	.17	1.32
Dedicated bath team (ref = no)	.35*	.17	1.42
Type of training offered Orientation (ref) Training	-.61**	.21	.55
Additional training offered (ref = no)	-.19	.16	.83
Constant	1.97	1.70	7.18

*p<.05, **p<.01, ***p<.001

Support was received for only one component of the hypothesis pertaining to physical environmental features and the prediction of physical agitation during bathing. The presence of windows in the bathing area was significantly related to physical agitation during bathing. The likelihood of baths involving physical agitation is reduced by a factor of 0.69 in facilities in which one or two windows (as compared with no windows) are present in the bathing area ($\beta = -.37$, odds ratio = .69, $p < .05$). Contrary to what was hypothesized, a significant inverse association was noted between the use of an exhaust fan during bathing and baths with physical agitation. The odds of baths

involving physical agitation are reduced by a factor of 0.71 in facilities in which an exhaust fan is used during bathing, as compared to those that either do not use an exhaust fan or do not have an exhaust fan to use ($\beta = -.34$, odds ratio = 0.71, $p < .05$). In the second model, in which only the background characteristics and physical environmental features were entered, baths with physical agitation were significantly associated with temperature control and type of bathtub. However, both these associations became non-significant with the addition of the organizational block of variables in the final model.

Physical agitation during bathing was significantly predicted by only two of the four features in the organizational block of variables. In contrast to the proposed hypothesis, the odds of baths involving physical agitation are almost one and a half times higher in facilities that have a dedicated bath team ($\beta = .35$, odds ratio = 1.42, $p < .05$). Some support was found for the staff training component of the organizational environment hypothesis. The probability of baths involving physical agitation is reduced by about one half in facilities in which staff receive training as opposed to those in which staff simply receive an orientation ($\beta = -.61$, odds ratio = .55, $p < .01$).

5.6.5 Presence of Verbal Agitation during Bathing

As shown in Table 5.39, each of the three blocks as well as the overall model is significant (overall model chi-square = 93.75, $p < .001$). The strongest block of the model used to predict verbal agitation during bathing consists of the facility characteristics in the first block.

**Table 5.39 Logistic Regression Model Significance
for Baths Involving Verbal Agitation**

	Block Chi-Square	Block Significance	Model Chi-Square	Model Significance
Model 1	58.99	p<.001	58.99	p<.001
Model 2	15.45	p<.05	74.44	p<.001
Model 3	19.32	p<.01	93.75	p<.001

In the final model, the background characteristics, mean age of residents and number of beds in SCU, were significantly associated with verbal agitation during bathing (see Table 5.40). The probability of baths involving verbal agitation is reduced by a factor of 0.94 for every unit increase in mean resident age ($\beta = -.058$, odds ratio = 0.94, $p<.01$), and by a factor of 0.93 for every unit increase in the number of beds ($\beta = -.068$, odds ratio = 0.93, $p<.001$).

**Table 5.40 Logistic Regression:
Predictors of Baths Involving Verbal Agitation**

Variable	β	S.E.	Odds Ratio
Mean age of residents	-.058**	.018	.94
Number of beds in SCU	-.068***	.013	.93
Size of bath area	.000	.0001	1.00
Facility age	-.020	.011	.98
Door locked during bathing (ref = no)	-.30*	.15	.74
Appropriate temperature control (ref = no)	.098	.22	1.10
Window(s) present (ref = no)	-.043	.15	.96
Exhaust fan used during bath (ref = no)	.22	.14	1.25
Number of homelike features present	-.018	.046	.98
Type of bathtub Lift-over (ref) Side/end entry	.043	.16	1.04
Bathing policy (ref = no)	.38*	.15	1.46
Dedicated bath team (ref = no)	.62***	.16	1.85
Type of training offered Orientation (ref) Training	-.42*	.18	.66
Additional training offered (ref = no)	-.24	.14	.79
Constant	5.97	1.58	389.89

*p<.05, **p<.01, ***p<.001

As in the four previous analyses, support was received for only one component of the hypothesis pertaining to physical environmental features and the prediction of verbal agitation during bathing. A locked bathing room door was shown to be inversely associated with baths involving verbal agitation. The probability of baths involving verbal agitation is reduced by a factor of 0.74 in facilities in which the bathing room door is locked during bathing ($\beta = -.30$, odds ratio = .74, $p < .05$). Interestingly, in the second model in which only the background characteristics and physical environmental features were entered, baths with verbal agitation were not significantly related to a locked

bathing room door. This association only became significant with the addition of the organizational block of variables in the final model.

All but one of the features in the organizational block of variables were significant predictors of verbal agitation during bathing. As in the previous four analyses, the odds of baths involving verbal agitation is approximately one and a half times higher in facilities in which a bathing policy is present ($\beta = .38$, odds ratio = 1.46, $p < .05$). A similar relationship was noted between baths with verbal agitation and the presence of a dedicated bath team ($\beta = .62$ odds ratio = 1.85, $p < .001$). Some support was found for the staff training component of the organizational environment hypothesis. The likelihood of baths involving verbal agitation is reduced by a factor of 0.66 in facilities in which staff receive training (i.e., instruction on how to bathe individuals with dementia) as opposed to those in which staff simply receive an orientation (i.e., to familiarize staff with bathing equipment and procedures) ($\beta = -.42$, odds ratio = .66, $p < .05$).

Table 5.41 summarizes the significant multivariate associations between the organizational and physical environmental variables and the five dependent variables.

Table 5.41 Summary of Statistically Significant Multivariate Associations

Baths involving any agitation	Baths involving physical aggression	Baths involving verbal aggression	Baths involving physical agitation	Baths involving verbal agitation
Mean age of residents (↓)				Mean age of residents (↓)
Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)	Number of beds in SCU (↓)
Bathing room door locked during bathing (↓)		Bathing room door locked during bathing (↓)		Bathing room door locked during bathing (↓)
	Presence of windows (↓)		Presence of windows (↓)	
	Exhaust fan used during bath (↓)		Exhaust fan used during bath (↓)	
Has bathing policy (↑)	Has bathing policy (↑)	Has bathing policy (↑)		Has bathing policy (↑)
Has bath team (↑)				Has bath team (↑)
Type of training (↓)			Type of training (↓)	Type of training (↓)
Additional training offered (↓)		Additional training offered (↓)		

CHAPTER 6: RESULTS – STAFF PERCEPTIONS OF BATHING-RELATED AGITATION

6.1 Staff Demographics

Completed *Bath Aide Surveys* were received from 117 staff in 47 facilities. The mean age of bath staff was 44.6 years (SD = 9.1). Ninety five percent of bath aides were female. On average, staff had 11.1 years of experience working as a bath aide, and had spent an average of 8.2 years (SD = 5.9 years) working as a bath aide at their current facility. The majority of staff (93%) had trained as Resident Care Attendants, 3% were Licensed Practical Nurses (LPNs), 3% had both Resident Care Attendant and LPN certification, while one individual was a Registered Nurse (RN).

6.2 Impact of Bathing-Related Agitation

More than one quarter of participating bath staff felt that the training opportunities they receive on the job are insufficient for the challenges of their position. Indeed, 6.8% of bath aides find the bathing of cognitively impaired residents very stressful, 15.8% find it quite stressful, and 54.7% find it somewhat stressful. Only 21.1% reported finding it not at all stressful.

When bath aides were asked to identify the most challenging aspect of their job, four main themes emerged from their responses – the presence of resident aggression and agitation, the limited time allotted for the bathing process, persuading residents to bathe and difficulties with colleagues. Not surprisingly, one of the most common themes related to resident aggression and agitation. One staff member simply wrote, “*I hate to*

be hit, punched, kicked, spat at...” Similarly, another wrote, *“dealing with hitting, biting and kicking”*. Some staff members moved beyond the use of the words *“aggression”* or *“agitation”* and instead used the word *“violent”* to refer to both residents and behaviours.

A second theme centred on the limited amount of time available to bath aides for the bathing process. While bath aides strive to make the bathing process enjoyable and to provide quality care for their residents, their efforts appear hampered by the number of baths conducted during their shift. For example, one staff member wrote, *“... sometimes the amount of baths that we have can have a great impact on how and when the bath is done, sometimes baths aren’t as pleasurable as they should be because we don’t have the time for residents to enjoy their bath.”* Staff also wrote of the struggle to conduct baths while completing the other tasks required of them as a care aide working on the floor. Under these circumstances, the challenge becomes one of *“trying to get everything done at a reasonable time so that you don’t need to rush or hurry dementia residents for a bath.”*

According to bath staff, a number of cognitively impaired residents are reluctant to bathe. Consequently, a third theme focused on the efforts made by staff to persuade residents to bathe. For some staff the challenge is, *“trying to convince resident that bath is ok, (that it) doesn’t have to be a bad experience.”* A number of comments provided by staff illustrated the potential importance of staff training. For example, one staff member wrote of the challenge associated with *“getting a resident in the tub who has a fear of water.”* Similarly, another wrote *“helping residents who are really scared by trying to calm their fears”*. Such comments beget the question why residents with a fear of water are being bathed in a bathtub in the first place.

Interestingly, some staff noted that it is not the residents that make their job challenging, but rather their co-workers. For these staff, difficulties arise when their colleagues have different values of resident care and are task, as opposed to resident, focused. This particular theme is also partly related to the time constraints faced by staff. For example, one individual wrote of the challenge “...to help other staff members slow down in the tub room...anxiety is elevated when they (the residents) are rushed, this causes violent outbursts and uncooperative behaviour.” Yet another staff member wrote of the frustration of “dealing with co-workers who are impatient with residents.”

6.3 Strategies for Dealing with Bathing-Related Agitation

Bath aides were asked to identify the type of strategies that they would typically use to deal with bathing-related agitation. Responses fell into four main categories - approach, distraction, environmental techniques, and pre-bath sedation. The majority (50.5%) of staff identified approach as their key strategy. These staff emphasized the importance of a gentle, slow, approach and the use of a calming voice to explain the procedure as they conduct the bath, and to provide reassurance (i.e., “talking” the resident through the bath). Interestingly, a small number of staff (5%) indicated that their solution to dealing with bathing-related agitation was to bathe the resident as quickly as possible. As one staff member wrote, “(the) *faster the better.*” Twenty-one percent of staff reported using distraction as a key technique. These staff members seek to divert residents’ attention from the task at hand by reminiscing with the residents about familiar past experiences, engaging them in topics of interest to the resident, asking for their help, singing to them or giving them an object such as a facecloth or toy. One staff member referred to this approach as the “act and distract” method. Ten percent of bath aides

incorporate the use of environmental techniques as a key strategy. These staff focus on maintaining a warm room and bath temperature, a quiet environment (i.e., by turning off bathtub jets and exhaust fan), and the use of soft music and dim lighting. Slightly less than 10% of staff listed pre-bath sedation as their primary technique for dealing with bathing-related agitation. It is worth noting that all nine bath aides who favoured the use of pre-bath sedation worked within three facilities. For staff in these three facilities, the focus appears to be that of controlling the behavioural symptoms associated with bathing.

6.4 Role of Physical Bathing Environment

In order to ascertain bath aides' perception specifically of the physical bathing environment, staff were asked to identify which features in the physical environment (privacy, temperature, lighting, noise control, décor, bathing equipment, bathing supplies, and physical layout) might contribute to bathing-related agitation. Almost two thirds (64%) of staff surveyed believe that the bathing equipment (i.e., the type of tub or lift apparatus) plays an important role. Staff wrote of the anxiety and apprehension experienced by residents when being lifted into the tub via the bath chair. One staff member aptly described the lift apparatus as a scary "*elevator chair*". As one staff member wrote, "*Some residents are upset by the lifting of the bath chair, they can be in a good mood and this part triggers the behaviour.*" Yet another staff member commented that residents do not always understand how to sit on the bath chair and that there is nothing for the residents to hold onto while being lifted. Staff also wrote of the drawbacks associated with side or end-entry bathtubs. For example, in one facility the bathtub door swings upward to open, which can alarm residents. The slanted seat and reclining motion of a side-entry bathtub also appear to create anxiety for the residents.

As with lift-over bath tubs, the bath chair in side-entry bathtubs can also induce agitation. For example, one staff member commented that the bath stretcher (to which a resident is strapped) is very uncomfortable for residents.

Sixty-one percent of bath aides (representing 34 of the 47 facilities) feel the bathing area is too cold. This finding is particularly interesting given that 29 of these 34 facilities (85.3%) have some form of additional temperature control (separate thermostat, heat lamp or blanket warmer) in their bathing area. It would therefore appear that the additional temperature control methods are not being used to their full effect. This is certainly evident in one staff member's comment, "*80°F is not warm enough after resident gets wet*".

Over 50% of the bath aides surveyed believe that noise levels in the bathing area contribute to bathing-related agitation. The most commonly noted reason for increased noise levels was the filling or draining of the bathtub. As one staff member wrote, "*water running into a deep tub is noisy and some staff shout to make themselves heard*". For this very reason, several staff indicated that they delay bringing residents into the bathing area until the bathtub is filled. The other commonly noted source of increased noise was that of the whirlpool/hydrosound jets in the bathtub. While designed to make the bathing experience more enjoyable, such a feature appears to have the opposite effect for residents with dementia.

Forty percent of staff members feel that insufficient privacy plays an important role in bathing-related agitation. The multi-purpose nature of bathing rooms was revealed as staff described how their bathing areas also serve as the clean or dirty linen storage area. One staff member revealed that the bathing room in her facility is not only

adjacent to the clean linen storage, but is also used to store the mechanical lifts. While a privacy curtain is in use the staff member acknowledged that it does not extend far enough across the room. Obviously, in these “multi-purpose” bathing areas any semblance of privacy is eliminated by the coming and going of other staff members. Several staff indicated that the interruptions from other staff members (be it through conversation and/or doors opening and closing) also serve to increase noise levels in the bathing area.

An equal number of bath staff (26.3%) indicated that the physical layout, the bathing supplies in use and the bathing area décor contribute to bathing-related agitation. Staff wrote of the insufficient space in the bathing area, particularly when trying to manoeuvre wheelchairs or Broda chairs. The frustration experienced by staff is apparent in the comment, *“bathing room is full of unnecessary equipment that only makes bathing room cluttered and not enough room to work in.”* A common theme with regards to the bathing supplies related to the quality of the towels. While numerous staff wrote of the need for softer, thicker and larger towels, several other staff acknowledged that they were continually short of towels and facecloths, and yet other staff noted that they were chronically short of shampoo and proper soap. Such comments highlight the systemic challenges inherent in facility bathing. As one bath aide wrote, *“towels are as soft as contracting out laundry is capable of supplying.”*¹⁶ Not surprisingly, bath staff perceived the décor of facility bathing areas as institutional and unfamiliar looking and emphasized the need for a more homelike atmosphere. Staff used such adjectives as *“sterile”, “drab”, “uninteresting”, “cold, plain, uninviting”* and *“absolutely clinical and*

¹⁶ In an attempt to remedy the rough towel dilemma, one ingenious staff member described how she uses warm flannel blankets to towel off residents following their bath.

ugly” to describe their bathing areas. One staff member simply wrote “*scary looking room*”. If this is how cognitively intact individuals perceive facility bathing areas, one can only imagine how it must appear to an individual with cognitive impairment.

Only 20% of bath aides surveyed believe that lighting contributes to bathing-related agitation. While staff in some facilities feel that the bathing area lighting is too bright and should be softer, staff in other facilities feel that the lighting is too dim and may frighten residents.

6.5 Improving the Bathing Experience for Residents and Staff

Bath aides were asked to provide suggestions as to how to improve the bathing experience for residents in their facility. Responses fell into eight main categories, three of which were associated with the organizational environment (more time, proper approach and presence of a bath team) and five of which were associated with the physical environment (temperature control, improved ambiance, décor, equipment/supplies and privacy). The most commonly noted suggestion centred on helping the residents to stay warm during the bathing process by either increasing the temperature of the bathing area, using a heat lamp (in both the bath and shower area), or heating the towels. The second most common suggestion focused on allotting more time to the bathing experience. Staff emphasized the importance of creating an unhurried atmosphere in which to pamper residents, and also suggested incorporating aromatherapy, soft music, and low lighting levels to improve the ambiance of the bathing experience. Such changes would certainly help transform the bathing experience from that of a routine personal hygiene task to a relaxing sensory experience. A number of suggestions pertained to the approach used by bath staff during bathing. Staff wrote of

the need to know the residents (their moods, behaviours, culture, occupation, family life), to treat the residents with respect and dignity, of always making the resident feel special, and of encouraging them to participate and assist in the bath. Not surprisingly, suggestions relating to the décor of the bathing area centred on creating a more homelike environment and the more effective use of colour. Staff highlighted the need for proper equipment (i.e., improved bathtub chairs, side-entry doors instead of lifts) in good working order. As one staff member wrote, “...*institutional equipment such as whirlpool tub should be quiet and not make terrifying noises.*” Staff felt that the use of water toys, and proper bathing products (i.e., bath salts, bath relaxation gel) could also improve the bathing experience for residents. Interestingly, the least common suggestions pertained to improved privacy (i.e., reducing foot traffic through the bathing area, removing stored supplies and equipment from the area) and the use of a bath team (i.e., having the same staff member(s) conduct all baths, having two individuals bathe each resident). One particularly insightful bath aide suggested surveying cognitive residents as a means to determine which aspects of the bathing experience could be improved.

Although one staff member aptly noted, “*if they can do something to improve the experiences of the residents during the bathing process I’m sure the bath staff will feel better too*”, the suggestions for improving the experiences of bath staff differed slightly from those noted above. For example, the most commonly noted suggestion was to implement (or return to) the use of a bath team. Staff indicated that the presence of a bath team would provide them with a little extra time and reduce the need to rush the bathing process. A number of staff felt that they would benefit from having either a two-person bath team (one to bathe the resident, the other to distract the resident) or having a

colleague from whom they could occasionally request assistance (again in distracting the resident). As with the suggestions for improving the resident experience, the second most common suggestion involved allotting more time for the bathing process. As one staff member wrote, *“1/2 hour is allotted from the time you approach resident to leaving the clean tub room after the bath.”* Thirty minutes certainly leaves little time for anything more than what one Director of Care referred to as a *“dip and flip”*. Staff also emphasized the need for more initial and additional training in the form of workshops, seminars, or brainstorming sessions. Additional suggestions included having a larger area so as to more easily manoeuvre lifts and wheelchairs, and having a more aesthetically pleasing environment.

In conclusion, the majority of bath aides find the bathing of cognitively-impaired residents stressful. Challenges stem from resident agitation and aggression, the limited time available to staff for the bathing process, and impatient and task-oriented (as opposed to resident focused) co-workers. The bulk of the strategies used by staff to cope with bathing-related agitation are procedural in nature (i.e., approach, distraction, pre-bath sedation) although several staff report using environmental techniques (i.e., warm temperature, quiet environment). The bathing equipment, bathing room temperature, and insufficient privacy were most commonly identified by staff as features contributing to the presence of bathing-related agitation. Staff suggestions for improving the bathing experience for residents tended to centre on physical environment features such as the temperature, ambiance and décor of the bathing area and the bathing equipment in use. Conversely, suggestions for improving the bathing experience for staff focused almost entirely on organizational features such as implementing a bath team, allotting more time,

and the provision of initial and continued training opportunities. Evidently, the bathing process in many of the participating facilities has some room for improvement. However, when staff were asked to indicate how satisfied they are with the bathing process in their facility 55% reported being quite satisfied, while less than 20% of staff reported feeling not at all or somewhat satisfied. It may well be that this type of satisfaction question is too vague to discern the nuances captured in the more open-ended survey questions.

CHAPTER 7: DISCUSSION AND CONCLUSION

To date, the relative contribution of the organizational and physical environments with respect to bathing-related agitation in dementia care have not been systematically investigated. The purpose of this thesis was to explore the relationship between selected organizational and physical characteristics of bathing environments and bathing-related agitation in Special Care Units (SCUs) across British Columbia. Given the current emphasis on health care reform and fiscal responsibility, it is imperative to identify features within the organizational and physical bathing environments towards which resources should and should not be directed in an attempt to improve the quality of the bathing experience.

7.1 Bathing-Related Agitation

The first part of this thesis examined the frequency and type of bathing-related agitation most commonly displayed in B.C. SCUs. This study is unique in that it is the first to utilize bath staff to document bathing-related agitation in multiple facilities. Three of the four prior studies in this area (Hoeffler et al., 1997; Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996) utilized direct observation or bath staff reports but only in a single facility. While the fourth study sampled a large number of facilities, it relied on prevalence estimates of bathing-related agitation from nursing directors or charge nurses (Sloane et al., 1995a). In contrast, in the current study the presence or absence of agitation was systematically recorded by bath aides immediately following each bath.

Approximately one in every two baths in the current study was found to involve some form of bathing-related agitation, be it agitated/aggressive physical behaviour (i.e., physical aggression), agitated/aggressive verbal behaviour (i.e., verbal aggression), agitated/non-aggressive physical behaviour (i.e., physical agitation) or agitated/aggressive verbal behaviour (i.e., verbal agitation). This rate is consistent with existing research which indicates that 40-73% of long-term care facility residents exhibit agitated behaviour during bathing (Hoeffler et al., 1997; Kovach & Meyer-Arnold, 1996, 1997; Namazi & Johnson, 1996; Sloane et al., 1995a). Extrapolating from the data, residents in the current study exhibited less physical or verbal aggression during bathing than those in previous studies (Namazi & Johnson, 1996; Sloane et al., 1995a). However, this may be due in part to differences in data collection methods.

As evidenced by the low number of bathing-related incident reports filed in the year prior to the study period, bathing-related agitation is rarely severe enough to warrant the submission of an incident report. Nonetheless, one in every three baths in the current study involved some form of verbal agitation (e.g., repetitive words, muttering, complaining/negativism) while one in every four baths involved some form of physical agitation (e.g., physical resistance, restlessness, repetitive mannerisms). These data suggest that a sizeable proportion of residents may experience distress and discomfort during the bathing process, which justifies a closer examination of the bathing environment.

One of the most important and disconcerting findings of the current study was the incongruence between the observed rates of agitation and the Directors of Care's perceptions of bathing-related agitation prevalence. While the majority of facilities

experienced bathing-related agitation rates greater than 25%, most Directors of Care believed bathing-related agitation to be a minor occurrence, taking place less than 10% of the time. However, perhaps bathing-related agitation only comes to the attention of Directors of Care when it results in an accident or injury sufficient to trigger the submission of an incident report. As administrators are the individuals typically responsible for the development of policy, the organization of staff training, and authorizing improvements to the physical bathing environment (e.g., purchase of new bathing equipment), this underestimation of the problem has considerable implications for the bathing experiences of both residents and staff.

7.2 Characteristic Features of Bathing Environments

One of the objectives of this thesis was to determine the extent to which organizational and physical environmental features recommended in the literature as reducing bathing-related agitation are present in B.C. SCUs. Interestingly, recommended features of the physical bathing environment were found to be slightly more prevalent in B.C. SCUs than those in the organizational environment. One might speculate that providing privacy during bathing, ensuring appropriate temperature, lighting and noise levels, and incorporating a homelike décor involves less effort to implement than the development of a bathing policy, supporting a dedicated bath team or providing initial and additional staff training. For example, while bath aides may be able to make minor changes to the physical bathing environment, the development of policy and the implementation of staff training require the efforts of administration. If, as noted above, administrators are unaware of the extent of bathing-related agitation in their facility, changes to the organizational bathing environment may be less likely to occur.

The most prevalent of the recommended physical environmental features were temperature control devices. More than half of participating facilities have a separate thermostat for their bathing area and one quarter of facilities have, in addition, such devices as a heat lamp or blanket warmer. Despite this, staff in a large proportion (72.5%) of these facilities felt that the bathing area was too cold for the residents. Similarly, the majority of bath aides who witnessed complaining/negativism during bathing also underlined the phrase “it’s too cold” (used to provide an example of complaining/negative behaviour). Such a finding leads one to speculate as to whether the temperature control features are being used (or used to their full effect) as opposed to simply being present in the bathing environment.

Participating facilities have made some attempt to reduce the institutional atmosphere of their bathing environments. In contrast to Epp et al.’s (2001) study of six Ontario facilities, a number of facilities in this B.C. sample have incorporated pictures, plants or knickknacks in their bathing areas. In fact, slightly more than half of the facilities reported having more than three homelike features present. Despite such efforts, one quarter of bath staff surveyed felt that the bathing room décor in their facility could be made to appear more homelike.

Only a limited number of the recommendations pertaining to the provision of privacy, noise and lighting levels, and the type of bathtub have been implemented by facilities. However, given the mixed findings regarding the impact of the physical environment on bathing-related agitation (only the provision of privacy and the presence of windows in the bathing area were found to predict bathing-related agitation), one questions the extent to which such recommendations should be implemented. Due to the

paucity of empirical research on bathing environments and bathing-related agitation, many of the recommendations regarding the physical bathing environment are opinion rather than evidence-based (e.g., Brawley, 2002; Calkins, 2002; Briller, Proffitt, Perez, Calkins, & Marsden, 2001; Miller, 1997). One of the strengths of the current study is its use of multiple regression analyses to attempt to determine the relative weighting of these recommended features.

With regard to the organizational bathing environment, slightly less than one third of participating SCUs have a bathing policy, while slightly more than one third have a dedicated bath team. Although more than half of the Directors of Care of participating facilities ranked staff training as the second most important feature in the organizational bathing environment, few facilities offer explicit initial or additional training on the bathing of individuals with dementia. Rather, as noted by other researchers (Namazi & Johnson, 1996; Briller et al., 2001; Sloane et al., 1995b), the majority of bath aides are offered an orientation in which to become familiar with the bathing equipment and procedures. Such a focus tends to depersonalize what should be viewed as an extremely intimate activity (Namazi & Johnson, 1996). Additional training is typically only offered in participating facilities on an as needed basis. However, as administrators underestimate the extent of bathing-related agitation in their facilities, opportunities for such training are likely to be few and far between. Limited provision of initial and additional training provides little opportunity for staff to further their skills and improve the bathing experience for both the residents and themselves. Indeed, a sizeable number of participating bath staff indicated that the training they had received was insufficient for the challenges of their position. Similarly, when asked how the bathing experience of

staff could be improved, staff emphasized the need for more training in the form of workshops, seminars or brainstorming sessions.

7.3 Impact of the Organizational and Physical Environment

7.3.1 Organizational Environment

The results from this study reinforce the assertion by Hoeffler et al. (2002) and others (Rader & Barrick, 2000) that bathing policy, staff assignment and staff training play an integral role in the bathing of cognitively-impaired residents. Contrary to what was hypothesized, having a bathing policy did not reduce bathing-related agitation. Baths involving agitation were found to be more, rather than less, likely to occur in facilities with a bathing policy than in those without such a policy. This finding was apparent both when the presence of any type of agitation was examined and in three of the four analyses examining the types separately (baths involving physical aggression, verbal aggression and verbal agitation). Examination of the eight bathing policies received from participating facilities revealed that the majority do not explicitly address resident comfort, dignity or the additional specific needs of cognitively impaired residents (i.e., gentle, slow approach). Instead, these policies tend to focus on bathing schedules and the operation/cleaning of bathtubs (i.e., the mechanics of bathing). While staff training might help to mitigate such a focus, the majority of facilities that have a bathing policy only offer an orientation as opposed to explicit training and rarely offer additional training. Given the absence of explicit policy and training for bath staff, aides in these facilities appear to receive little guidance on how to minimize agitation during the bathing process.

Having a dedicated bath team was also found to increase the probability of any agitation during bathing, which again is contrary to what was hypothesized. One possible explanation for this is that the advantages of having a dedicated bath team might be outweighed if dedicated bath aides do not possess the necessary skill set or aptitude for working with individuals with dementia. For example, one member of a two member bath team indicated that the most challenging aspect of her job was trying to get her colleague to slow down while bathing residents and she wrote of the frustration she experienced given her partner's differing ideas on how best to bathe individuals with dementia. Care staff indicate that the bathing of individuals with dementia is one of the hardest personal care tasks to perform (Namazi & Johnson, 1996). Consequently, bathing confused individuals every day, five days a week may lead to burnout. Indeed, one member of a dedicated bath team wrote, "it (bathing) can be more mentally draining, sometimes, than physically". Over time, feelings of burnout may lead the bath aide to become less patient and more abrupt in her approach. One final reason for this anomalous finding may be related to the degree of familiarity between bath aide and resident. One might presume that having a dedicated bath team would increase the familiarity between aide and resident and allow for an individualized approach for each bath. However, dedicated bath aides typically only see residents for their bath once a week. Care staff in facilities which have adopted a 'family' or 'pod' concept¹⁷ and who provide care to the same group of residents on a daily basis may actually be more familiar to residents and more aware of each resident's idiosyncrasies than the dedicated bath team. Unfortunately, this study did not differentiate between the different staffing

¹⁷ In these facilities, residents are clustered in small groups (i.e., families or pods) with one or two care responsible for the same group of residents on each shift.

concepts/philosophies of each unit; rather Directors of Care were simply asked whether or not the unit had a dedicated bath team. Further research, perhaps in the form of qualitative interviews, is required to explore the advantages and disadvantages of a dedicated bath team in greater depth.

As was hypothesized, having initial and additional staff training reduces the likelihood of bathing-related agitation. This finding was evident in the analysis of the overall/any type of agitation score and in analyses of three of the other four dependent variables (baths involving verbal aggression, physical agitation and verbal agitation). Such a finding is consistent with existing research in which staff training has been demonstrated to dramatically reduce the number of aggressive incidents during bathing (Maxfield et al., 1996), and to alter the aides' perceptions of both residents' behaviour during bathing and the bathing experience (Hoeffler et al., 1997). This finding is particularly salient given that so few facilities in the study provide detailed training (either initially or additionally) to their staff.

The multivariate analyses revealed several unanticipated findings with regards to the background characteristics, mean age of residents and number of beds in facility. The probability of baths involving any type of agitation and verbal agitation was reduced with increased mean resident age. Although information regarding resident functional status was not collected in the current study, it may be that the older residents were physically more frail and/or farther along the dementia trajectory, and therefore lacked the cognitive ability to express their discomfort, even as agitation.

Contrary to what one might expect, the larger the SCU the less likely baths are to involve agitation. This relationship was evident in analyses of all five dependent

variables. One may speculate that larger facilities have greater financial resources and greater flexibility (e.g., with scheduling) to offer training to bath staff. Closer examination of the relationship between number of beds and training indeed reveals that larger SCUs are more likely to offer both initial training (as opposed to an orientation) and additional training for bath staff.

7.3.2 Physical Environment

The findings from the current study provide some support for the relationship between bathing-related agitation and the physical environment. Of the six physical environmental features examined, the provision of privacy, the presence of windows and exhaust fan use were all found to be predictive of bathing-related agitation. In contrast, no association was found between temperature control, homelike décor, or the use of lift-over bathtubs and bathing-related agitation.

As was expected, the provision of privacy (locking the bathing room door during bathing) was found to reduce the odds of baths involving one or more examples of physically aggressive behaviour. This finding was repeated for two of the other four dependent variables – verbal aggression and verbal agitation. It certainly seems logical that residents would respond to the entrance of other staff members into the bathing area during bathing with complaining, muttering, cursing, name calling, or verbally threatening behaviour as opposed to hitting, pinching, or slapping. The findings from the logistic regression analyses are also supported by the findings from the bath aide surveys. Forty percent of the aides surveyed feel that insufficient privacy contributes to bathing-related agitation. As in other facilities (Briller et al., 2001), many of the bathing areas in this study are multi-purpose in nature, and also serve as the clean or dirty linen storage

area. The association between the provision of privacy and bathing-related agitation reinforces the recommendation by Rader and colleagues (1996) that staff be restricted from accessing supplies stored in the bathing area while a resident bath is in progress.

Interestingly, having windows in the bathing area reduced the probability of physical aggression or physical agitation during bathing. The presence of windows may provide benefit as daylight helps people feel good (due largely to the increase in the levels of the neurotransmitter serotonin), especially when the sun is shining (Brawley, 2006). Also, as the study was conducted in late spring/early summer, sunlight shining through the windows may have helped warm the bathing area. Windows also provide a connection to the outside world which may help bath staff distract the resident from the task at hand. Certainly, further research is warranted to explore the relationship between natural light and bathing-related agitation in greater depth.

Contrary to what was hypothesized, the use of an exhaust fan during bathing reduced the likelihood of physical aggression and physical agitation during bathing. The Bathing Area Therapeutic Environment Rating Scale listed several features (i.e., exhaust fan use, type of wall covering) believed to contribute to increased noise levels in bathing areas. While researchers (Sloane et al., 1995a) suggest that the use of noisy exhaust fans be avoided during resident bathing, the fans in use in participating facilities may not have been particularly noisy (and may actually have improved air circulation and reduced humidity thereby improving the warmth of the bathing area). Half of the bath staff surveyed in the study felt that the noise levels in their bathing area contribute to bathing-related agitation, however, the most commonly noted reason for increased noise was the filling or draining of the bathtub, followed by the use of whirlpool jets in the

bathtub. Dr. Maggie Calkins, an expert in the field of dementia design, suggests that the only way to adequately determine noise levels in bathing areas is to actually measure the decibel level at the time of bathing (Personal conversation, April 29, 2005). In future studies such measurements should be requested.

It is important to keep in mind that the majority of residents with hearing or vision impairment are bathed without their hearing aids or glasses. As such, environmental stress may be reduced because of sensory fading. However, in the absence of glasses and hearing aids, the environment may also be perceived as more frightening. Additional research is warranted to more closely explore the role of hearing and vision impairment in bathing-related agitation.

The absence of a relationship between having temperature control devices in the bathing area and bathing-related agitation may be due in part to the wording of the question in the Bathing Area Therapeutic Environment Rating Scale. Unfortunately, Directors of Care were asked to indicate which temperature control methods were present in the bathing area, as opposed to which were used. The presence of temperature control devices obviously does not ensure that such methods are used during resident baths. Indeed, the comments from bath staff about residents who complained of being cold would indicate that these devices were not being used. Given that the primary suggestion for improving the resident bathing experience was to help residents remain warm, closer examination of the use and placement of temperature control devices should be undertaken in future studies. For example, it should be determined whether heat lamps are located above the bathtub or the chair in which residents sit while drying themselves.

Qualitative interviews with bath staff would help identify how and when staff use the various temperature control methods.

No relationship was found between the number of homelike features present in bathing areas and bathing-related agitation. However, one might speculate that the number of homelike features present is not as important as the quality of the homelike features present. For example, while almost half of the participating facilities indicated that they had pictures in their bathing area, an examination of the bathing area photographs returned by 13 of the facilities revealed considerable variation in the nature, size and location of the pictures. Some facilities had large framed pictures on the wall, while others had small, unframed posters. Some facilities had placed the pictures at eye level close to the bathtub, while others had placed them much higher than eye level, further away from the bathtub (given that residents are typically bathed without their glasses, one questions the extent to which residents can actually see the pictures). Similar variation was found with regards to the cabinets used for storing towels or bathing supplies. Several facilities had wooden or painted cabinets with wicker baskets while others simply used white melamine shelving. The photographs also revealed the uniformity of facility bathing areas. While several facilities had gone to considerable effort to improve the ambiance of their bathing room with the addition of murals and homelike furniture, the majority of bathing areas retained an institutional ambiance. This ambiance is also conveyed in the adjectives used by bath staff to describe their bathing areas; that is, “sterile”, “drab”, “absolutely clinical and ugly”. More extensive use of photographs or video would be helpful in determining the quality of the homelike décor,

as would the development of a tool designed to measure the degree of homelike ambiance.

Surprisingly, no relationship was found between having side or end-entry bathtubs and bathing-related agitation at the multivariate level. However, while side or end-entry bathtubs may eliminate the need for potentially frightening mechanical lifts, they are not without their drawbacks. As Briller and colleagues (2001) note, side or end-entry bathtubs require the resident to be seated in the bathtub prior to it being filled with water. The possibility of agitation being induced is increased not only by the sound of running or draining water (Kovach & Meyer-Arnold, 1996; Namazi & Johnson, 1996), but also as a result of the resident becoming chilled. Staff in the current study noted that the upward opening of the bathtub door and the reclining motion of side-entry bathtubs can also induce anxiety among residents. During presentation of the preliminary findings of the study at a national conference, several Directors of Care pointed out additional drawbacks of side-entry bathtubs. For example, residents have nothing to hold onto when the side-entry bathtub reclines to a level plane which may create anxiety. Some bathtubs also require that a resident be “strapped down” to avoid their floating during the bath. It may be that this type of restraint results in greater anxiety than that caused by a mechanical lift. Dr. Maggie Calkins suggests that the classification of bathtubs according to the method of resident entry is not sufficient to capture the nuances of the different models (Personal conversation, April 29, 2005). Consequently, she recommends that bathtubs be grouped according to some other characteristic. Systematic study of the elder-friendliness of different types of bathtubs, particularly for persons with dementia, is recommended for future research.

Of the independent variables examined in the current study, it seems that it is those features associated with the organizational environment that have the greatest impact on bathing-related agitation. The provision of initial and additional training opportunities allows bath aides to not only improve their skills and strategies for minimizing bathing-related agitation, but also their awareness of how the physical environment can assist them in the bathing task. For example, not all staff may be aware of the importance of providing privacy during a bath, of keeping the bathing room at a temperature comfortable for the resident, or of placing pictures at eye level and in close proximity to the bathtub. Namazi and Johnson (1996) observed that bath staff who had not been taught the relationship between the physical environment and behaviour, believed residents' demeanour to be the primary source of difficulties during bathing. Such a finding raises the issue of the role of staff expectations in the occurrence of bathing-related agitation. If bath aides enter the bathing room with the belief that a resident will prove difficult to bathe, the prophecy may be fulfilled. In one of the most recent studies examining the bathing of residents in dementia care, researchers (Somboontanont, Sloane, Floyd, Holditch-Davis, Hogue & Mitchell, 2004) sought to identify the immediate antecedents of physically aggressive behaviour during the showers of residents who had a history of excessive behaviour during bathing. Somboontanont and colleagues found that caregiver behaviour (e.g., confrontational communication, disrespectful speech, a hurried pace, invalidation and failure to alert the resident to the task ahead) was most strongly associated with physically aggressive behaviour. As in the current study, no relationship was found between noise levels or temperature discomfort and physically aggressive behaviour. The researchers therefore concluded that it is

caregiver behaviour which constitutes the most important antecedents of physically aggressive behaviour during bathing. If this is indeed the case, then the provision of initial and additional staff training is essential to improving the bathing experience for both residents and staff.

7.4 Bath Staff Perceptions of Bathing-Related Agitation

The final portion of this thesis examined the impact of bathing-related agitation on bath staff and the practices used by staff to minimize bathing-related agitation. Not surprisingly, more than three quarters of bath staff reported finding the bathing of cognitively impaired residents stressful. The stress experienced by bath aides typically results from challenges associated with resident agitation and aggression, the limited amount of time allotted for the bathing process, trying to persuade residents to bathe and the differing (i.e., task oriented) approaches of co-workers. The job stress associated with bathing supports the previous speculation that the presence of dedicated bath teams may result in increased bathing-related agitation due to staff burnout. For example, 5 of the 47 participating facilities exhibited agitation rates greater than 75%. One can only imagine how a bath aide must feel at the end of a shift in which three of four baths involved some form of agitated behaviour. Given that participating bath staff had spent an average of 8.2 years working as a bath aide in their current facility, it would be intriguing to explore, through the use of qualitative interviews, how and why staff have remained in their positions for as long as they have. How is it that the majority of bath staff who experience such job stress, report being satisfied with the bathing experience at their respective facilities?

The limited amount of time allotted for resident baths was a recurrent theme among the responses of bath staff in the *Bath Aide Survey*. Staff emphasized the importance of using a gentle, slow approach while bathing cognitively-impaired residents, yet the majority of baths in B.C. SCUs last less than 20-30 minutes. While the association between time allotted for bathing and bathing-related agitation was not examined in the current study, it would seem prudent for future research to more closely explore this relationship. Interestingly, a number of staff in the current study suggested that the use of dedicated bath teams would help alleviate the time crunch felt by staff who are responsible for both bathing and additional care tasks on the unit.

The challenges associated with trying to persuade residents to bathe or the task-oriented approaches of colleagues highlights the importance of staff training. In a recent study, Sloane et al. (2004) evaluated the efficacy of two alternative approaches for the bathing of individuals with dementia. Both person-centred showering and the towel bath (an in-bed bag bath with no-rinse soap), resulted in a significant reduction in the amount of agitation and aggression displayed by residents as compared with a control group. Neither intervention was shown to adversely affect the completeness or hygienic results of bathing. The towel bath approach would certainly be beneficial for those residents fearful of a tub bath. In Sloane et al.'s study, bath staff in both intervention groups also received training in person-centred bathing with a focus on viewing behavioural symptoms as expressions of unmet need, appropriate communication techniques, regulation of the physical environment to maximize resident comfort, and problem-solving approaches. Given the frustrations expressed by bath staff in the current study, it seems that such training opportunities would be well received in B.C. SCUs.

Staff reported using a number of strategies for dealing with bathing-related agitation, the most common of which involved interpersonal skills (e.g., speaking calmly, using a slow, gentle approach, diverting residents' attention through reminiscing or singing). This differs slightly from Sloane et al.'s (1995a) study in which procedural strategies (e.g., returning at a different time, asking for assistance from another staff member) were the most commonly reported strategies. None of the staff in the current study reported using procedural strategies as a means of coping with bathing-related agitation. While staff seem aware of how the physical bathing environment might exacerbate bathing-related agitation in their respective facilities, they do not appear to readily draw on environmental techniques (e.g., maintaining a warm air and bath temperature, soft music and lighting) to deal with bathing-related agitation, a finding which is similar to that of Sloane and colleagues (1995a). Pre-bath sedation is still the favoured approach for some staff. While information regarding the number of residents who have a standing order for pre-bath sedation was not collected, just under half of the facilities reported having PRN (as needed) pre-bath sedation orders for two or more residents.

7.5 Theoretical Framework

7.5.1 Ecological Model of Aging

The findings of the current study dovetail with person-environment (P-E) theory, or more specifically, Lawton and Nahemow's (1973) Ecological Model of Aging. Two key concepts in this model are environmental press and competence. In the current study environmental press can be viewed as the demand exerted by both the physical and organizational environment. Given that key organizational and physical features found

to be significantly associated with bathing-related agitation are missing from a number of participating facilities, environmental press is increased. Competence represents the ability of the individual being bathed to respond adaptively to the demands of the bathing environment. The majority of residents bathed in this study have a primary diagnosis of dementia and experience significant cognitive impairment (mean MMSE score 12.4 out of 30). As a result of their dementia, their sensory-motor and perceptual function is also likely impaired, thereby reducing their competence levels. The exposure of residents with dementia to bathing areas that lack privacy, and to staff who have little initial or additional training in the bathing of residents with dementia creates incongruence between environmental press and competence. As Lawton (1998) notes, large mismatches between environmental press and competency are typically associated with negative outcomes. The finding that one in two baths involves some form of agitation may well reflect the mismatch between the environmental press of the bathing environment and the reduced competency of the residents being bathed. The current study provides support for Lawton and Nahemow's (1973) environmental docility hypothesis, in which the effect of environmental press of a given magnitude is believed to become greater as personal competence diminishes. The widespread presence of bathing-related agitation in participating SCUs suggests that the environmental press exerted by the physical and organizational bathing environment is too great given the diminished competency of the SCU residents. The environmental docility hypothesis implies that negative outcomes are likely to continue unless changes are made to the physical and social environment (Wister, 2005). This reinforces the notion that for the bathing

experience to improve, key environmental features such as the provision of privacy and training opportunities for staff must be implemented by facilities.

7.5.2 Progressively Lowered Stress Threshold Model

The Progressively Lowered Stress Threshold (PLST) Model (Hall & Buckwalter, 1987), which is rooted in P-E theory, also helps explain the observed relationship between key physical and organizational features of the bathing environment and bathing-related agitation. According to the PLST, anxious behaviour occurs when an individual with dementia feels stressed, at which point an attempt is made by the individual to avoid the offending environmental stimuli. If the individual is unable to avoid the negative stimuli, dysfunctional behaviour such as fearfulness, agitation or combativeness can result (Hall & Buckwalter, 1987). Residents who experience stress while being bathed are, by the very nature of the bathing process, unable to avoid negative stimuli such as interruptions by other unit staff or cool temperatures in the bathing area. Consequently, agitated behaviour like that observed in the current study, results. A central tenet of the PLST model is that the neuronal cell loss experienced by individuals in the later stages of dementia results in a reduced ability to receive and process stimuli from the surrounding environment and a decreased stress threshold. Dysfunctional behaviour is believed to occur when the anxiety associated with environmental stimuli exceeds the stress threshold of the individual with dementia. According to this premise, the intrusion of other unit staff during the bathing process provides sufficient anxiety to exceed the compromised stress threshold of the resident being bathed, thereby resulting in the display of bathing-related agitation. Similarly, the absence of initial and additional training opportunities may, for example, lead the bath

aide to rush the bath or to wash the resident's hair first (leaving the resident chilled for the duration of the bath), both of which may increase the resident's anxiety level beyond his/her existing stress threshold, again resulting in bathing-related agitation. The PLST model suggests that the bathing experience will only improve once residents' loss of functioning is supported in a prosthetic manner and those factors believed to create stress (i.e., lack of privacy) are controlled.

7.6 Study Limitations

7.6.1 Sampling Frame

As was noted in chapter four, there was no existing comprehensive directory of B.C. SCUs at the time the study was conducted. The researcher was able to generate a comprehensive list of 90 SCUs province-wide by contacting the individual responsible for residential care in each of the five health authorities. However, it is possible that a small number of SCUs may have been inadvertently omitted as a result of this procedure. Thirty-six of the 90 SCUs declined to participate in the study. The primary reasons given for non-participation were being too busy with care issues and staffing issues. One might speculate that baths in facilities dealing with such issues may be more likely to involve bathing-related agitation, in which case the observed rates of bathing-related agitation may be lower than if these facilities had been included in the sample. Unfortunately, no demographic data were collected from non-participating facilities so the researcher is unable to determine if these facilities differed in any systematic way from participating facilities. Facilities in both the Vancouver Coastal Health Authority and the Northern Health Authority were under-represented in the study sample, which may also have resulted in some selection bias. While no demographic information is available

specifically for B.C. SCUs, the resident demographics for the current study are comparable to those of other studies involving B.C.'s long-term care facilities (e.g., Chappell & Reid, 2000).

7.6.2 Data Collection Methods

Instruments

As mentioned previously, a number of limitations were associated with the survey instruments. The clarity and depth of a number of the questions from the *Bathing Area Therapeutic Environment Rating Scale (BATHERS)* pertaining to both the organizational environment and physical environment could have been improved. For example, instead of simply asking whether or not a facility had a dedicated bath team, it would have been helpful to have distinguished between the various staffing permutations (i.e., all care staff rotate through bath aide position, care staff bathe only those residents to which they are assigned, or one or two bath aides bathe all residents). The question pertaining to temperature control asked about the *presence* of temperature control methods as opposed the *use* of such methods. It would have been useful to have inquired about the temperature at which the bathing area is kept while baths are in progress, as well as to the location of the heat lamps within the bathing area (i.e., above the bathtub, in the dressing area). Neither the reliability nor the validity of the *BATHERS* instrument, or the *Bath Aide Survey* was tested prior to use in the current study. No reliability or validity testing was conducted on the *Agitated Behaviour Checklist*, however, the behaviours listed closely approximated those of the Cohen-Mansfield Agitation Inventory which has established reliability and validity (Cohen-Mansfield, Marx, & Roesenthal, 1989). Future studies may benefit from validity and reliability testing of the checklist. The

Agitated Behaviour Checklist did not ask if the individual being bathed had been given sedating medication prior to the bath, a factor which may have influenced the display of agitated behaviour.

Bath aides in participating facilities were instructed to complete one *Agitated Behaviour Checklist* for every bath conducted over a two-week period. As the majority of residents are bathed on a weekly basis, it was presumed that over a two-week period, each resident would be bathed twice. Given that no resident names or identifying marks were recorded on the *Agitated Behaviour Checklist*¹⁸, the only way to confirm that this had occurred was to ensure that there were twice as many completed checklists as residents in the facility (hence the bath to resident ratio in Table 5.4). In the facility in which the Director of Care reported that residents are bathed three times a week, only 27 completed checklists were received for 25 residents. Due to the absence of names/identifying marks on the checklists, it is unclear whether eight residents were each bathed three times in one week or whether each resident was bathed once over two weeks. Fewer than expected checklists were also received in several other facilities. If some residents were not bathed during the observation period as a result of existing agitation, the reported bathing-related agitation rate is actually an underestimate. However, given that the majority of residents are bathed once a week, and that the majority of facilities in Table 5.4 exhibit bath to resident ratios of 2:1 it seems likely that the majority of participating facilities did indeed capture two baths for each resident.

¹⁸ Due to ethical limitations

Unit of Analysis

An additional limitation of the study pertains to the differing units of analysis used to analyze bathing-related agitation and characteristic features of the bathing environment. Agitation was measured at the level of the individual, whereas the organizational and physical features of the bathing environment were measured at the level of the facility. This necessitated combining these two levels of measurement in order to test the hypotheses.

As noted in chapter five, the data were first analyzed at the facility level using rates of bathing-related agitation. However, the relatively small sample size (47 facilities) lacked sufficient statistical power to detect relationships between the organizational and physical environmental features and bathing-related agitation. In order to increase the statistical power of the sample, data from the *Agitated Behaviour Checklists* (i.e., from each individual bath) were combined with that of the *Bathing Area Therapeutic Environmental Rating Scale* (i.e., from each facility). As the baths in each facility were conducted in the same bathing room by the same staff, residents were (theoretically) exposed to the same organizational and physical features of the surrounding bathing environment. By attributing the same physical and organizational characteristics to each bath conducted in a particular facility, the sample size was increased from 47 (the number of facilities) to 1,565 (the number of baths), and the dependent variable became baths with or without agitation as opposed to agitation rates per facility. Combining individual and facility level of data resulted in increased exposure to facility level confounding factors. However, the fact that the results from

this analysis were consistent with several components of the hypotheses mitigates this limitation.

Interpretation of Data

The ability of the researcher to explain the study findings was limited by the absence of individual demographic information (e.g., cognitive status, functional status) and by the focus on agitated baths as opposed to agitated residents. Only aggregate facility information regarding resident cognitive status, gender and age was received which could not be correlated with specific baths.

7.7 Future Research Directions

The current study revealed a number of expected and unexpected relationships between the organizational and physical bathing environment and bathing-related agitation which warrant further investigation. Ideally, future research should document bathing-related agitation by individual resident as opposed to by bath. In order to reduce the influence of confounding factors, information on the functional and cognitive status of each resident being bathed, whether pre-bath sedation was administered and the demographics of the staff member conducting each bath should also be collected.

Despite existing recommendations regarding the organizational and physical bathing environment, key organizational and physical features were missing from the bathing environments of a number of participating facilities. Qualitative interviews with facility administrators are required to determine the extent to which administrators are aware of such recommendations, and the perceived barriers that prevent the implementation of such recommendations. Obviously, if the perceived barriers are not

identified and addressed, the implementation of recommendations from additional research on bathing-related agitation is likely to be limited.

One feature of the organizational bathing environment that has not been addressed in the bathing literature pertains to the time of day at which residents are bathed. Individuals with dementia become increasingly agitated in the late afternoon, a condition commonly known as “sundowning”. Consequently, it would seem logical that bathing residents with dementia at this time of day should be avoided. However, in the current study, almost half of participating facilities (21 of 47) bathed residents between the afternoon shift change (typically around 3 p.m.) and dinner time. If a resident is already susceptible to agitation at that time of day, the potential for bathing-related agitation is only likely to increase. Closer examination of the relationship between time of bath and bathing-related agitation is certainly warranted. Again, interviews with facility administrators may prove useful in clarifying the reasons for such a practice.

Kovach and Meyer-Arnold (1996) found that the majority of residents in their study began to display agitated behaviour as soon as they were informed it was bath time. It would be beneficial to determine at which stage in the bathing process the majority of bathing-related agitation occurs, which in turn may more clearly illustrate the respective contribution of selected features in the organizational and physical bathing environment. Similar to the study by Somboontanont and colleagues (2004), the bathing process could be videotaped and sequential lag analysis used to analyze the bathing environment for the 5-10 seconds preceding the display of agitation. While Somboontanont and colleagues only videotaped previously identified physically aggressive residents during showering (the predominant method of bathing in U.S. long-term care facilities), videotaping the

baths of all residents in a facility would help to identify some of the nuances that likely exist between baths with and without agitation.

An important area of future research concerns bathtub design. Both lift-over and side/end-entry bathtubs pose a number of challenges for the cognitively-impaired resident. Videotaping baths in a variety of bathtub models and interviews with bath staff would certainly help identify which features require modification for use with the cognitively-impaired. The increasing number of facilities looking to replace their existing bathtubs also provides an excellent opportunity to gather data pre and post replacement. It is imperative that the results of such studies are shared with manufacturers of specialized bathing equipment, such as ARJO.

Further examination of the impact of bathing-related agitation on bath staff is essential. There are very few jobs in our society which require that individuals subject themselves to verbal and physical aggression on a daily basis. In-depth qualitative interviews would help identify how bath aides perceive bathing-related agitation. For example, do they believe that the agitated behaviour displayed during bathing is spontaneous (i.e., unprovoked) or a consequence of some feature in the bathing environment? Do they perceive the bathing environment as a help or a hindrance in their efforts? What supports do bath aides feel they need to improve the bathing experience for both residents and themselves? Given the incongruence between the extent of bathing-related agitation reported by bath staff and that reported by facility administrators, are bath staff reluctant to express their experiences for fear of being viewed as incompetent? As a number of bath aides indicated that the use of bath teams

could alleviate the time crunch felt by staff, it would be interesting to conduct an evaluation of the bathing task within the context of the other duties required of bath aides.

Lastly, it would be worthwhile to conduct interviews with cognitively intact residents of long-term care facilities to obtain their thoughts and perspectives on the bathing experience. Are there aspects of the bathing process that make them uneasy? What are their thoughts on the homelike décor or bathing equipment in use? What changes would they like to see in the bathing environment? While they may not have the cognitive impairment of residents on a SCU, they likely have similar visual, perceptual and/or physical difficulties which make their feedback extremely important. Given that an increasing number of individuals with dementia are being diagnosed at an earlier stage in the disease process, it would be interesting to interview these individuals to see which features they would like to see present in a bathing area. Detailed pictures of bathing areas with a variety of different features could help facilitate a discussion of those features believed to be most relaxing or fear-inducing.

7.8 Clinical and Environmental Design Implications

The findings from this research possess a number of implications for current bathing practices and bathing area design in SCUs. Facilities are encouraged to use the *Agitated Behaviour Checklist* to track the behaviour of individual residents. In doing so, Directors of Care will acquire a more accurate picture of the nature of bathing-related agitation in their facility. Once residents who exhibit the greatest amount of bathing-related agitation have been identified, steps can be taken to adjust the physical or organizational environment to more closely meet resident needs, thereby improving the bathing experience.

It is essential that facility administrators provide explicit initial training on the bathing of individuals with dementia to all new bath aides. Currently, the majority of facilities orient new staff to the bathing area (so as to familiarize staff with the bathing equipment and procedures) as part of their orientation to the larger SCU; new staff members also typically observe one or two baths being given by current bath staff. To enhance their orientation, new staff should receive explicit training in how to deal with excessive behaviours during bathing through classroom sessions involving role-playing or brainstorming sessions. Additional training opportunities should be offered to existing bath staff on a regular basis (i.e., annually or biannually), especially as bath staff may be reluctant to ask for help possibly for fear of being perceived as incapable. Opportunities should be provided for bath staff to regularly brainstorm with other staff on how to improve the bathing experience for residents who are more susceptible to bathing-related agitation.

As noted previously, the unexpected relationship between the presence of a bathing policy and bathing-related agitation may be due to the tendency of policies to focus more on bathing schedules and the operation/cleaning of bathtubs than on resident comfort and dignity. Consequently, facilities should take steps to ensure that they have a bathing policy in place that explicitly addresses the needs of cognitively impaired residents and provides guidance to bath aides on how to meet such needs.

As further research is warranted with regards to the presence of a dedicated bathing team, facilities are cautioned against disbanding existing teams. However, administrators should ensure that their bath teams possess the necessary skill set for working with individuals with dementia. The provision of additional training may help in

this regard. Indeed, Sloane et al. (1995b) believe that with proper training almost anyone can learn to bathe individuals with dementia.

Given the discrepancy between the bathing-related agitation rates reported by Directors of Care and those reported by bath staff, administrators are encouraged to increase the opportunities for dialogue between themselves and bath staff. Bath staff should be made to feel comfortable to bring any concerns or suggestions to the attention of the administrator. If administrators are unaware of the difficulties encountered by bath staff, it is unlikely that any changes to the organizational or physical bathing environment will be made.

With regards to the physical environment, facilities are encouraged to lock the bathing room door during resident baths to reduce interruptions by other unit staff. Facilities in which staff members require access to supplies stored in the bathing area are encouraged to explore alternative methods of accessing supplies. For example, dirty linen could be placed in a cart outside the bathing area and then transferred to the dirty linen area adjacent to the bathing area during a break in the baths. Similarly, clean linen supplies required by staff while a bath is in progress could be temporarily stored on a laundry cart outside of the bathing area. Few people would allow other family members, let alone strangers, into their bathroom while they were taking a bath. Why should this be any different for cognitively impaired individuals?

Design professionals involved in the renovation or construction of a SCU are encouraged to incorporate additional storage space for clean or dirty linen, with access off the main corridor (as opposed to the bathing area). This would limit the need for staff to enter the bathing area during resident baths. Given the observed relationship between

the presence of windows and reduced physical aggression and agitation, design professionals are also encouraged to more closely consider the potential benefits of exterior windows. Locating the bathing area on an exterior wall, as opposed to deep within the building, may in turn help elevate the status of the bathing area.

While no relationship was found between separate temperature control methods and bathing-related agitation, comments from the bath aides and the number of residents who complained of being cold would indicate that facilities need to focus more effort on keeping the bathing room (and the resident) warm. Bath aides are encouraged to turn the thermostat to a higher setting than that of the rest of the unit. For example, one of the participating facilities specifically notes in its bathing policy that the temperature of the bathing area remain at 23°C for the duration of the resident bath. For facilities with a towel warmer, warm bath towels could be draped over the resident's shoulders while the bath is in progress if the resident's shoulders remain above the water level. If a heat lamp is present in the bathing area, it could be used to help warm the area prior to the resident entering the room as well as while the resident is towelling off after the bath.

Although the logistic regression analyses did not reveal a relationship between the type of bathtub and bathing-related agitation, bath staff identified a number of challenges associated with both side/end-entry and lift-over bathtubs. Consequently, facilities considering replacing their aging bathtub are encouraged to closely examine the features of the potential replacement bathtub. For example, administrators should ensure that reclining side-entry bathtubs have handles for residents to hold onto as the bathtub reclines to a level plane. As bath staff commented that bath chairs can be uncomfortably hard for residents, administrators should look for bath chairs with padded seats. Given

bath staff observations of the anxiety and apprehension experienced by residents when lifted into the bathtub via the bath chair, it is recommended that administrators consider purchasing bathtubs which minimize the use of lifts that raise residents four or more feet into the air.

7.9 Conclusion

This study is unique in that it is the first study to utilize bath staff to document bathing-related agitation in multiple facilities. It is also the first known study in both Canada and the United States to examine the relative importance of selected features in both the physical and the organizational bathing environment on bathing-related agitation. This is an important contribution to the literature as design recommendations for dementia environments rarely focus on the bathing area due in part to the paucity of objective data about which features are most important or useful (Sloane et al., 1995a).

While bathing-related agitation is typically not severe enough to result in an unusual incident or risk event, it is a common occurrence in B.C. SCUs. Approximately one in every two baths conducted during the study period involved some form of bathing-related agitation; more than one third of all baths conducted involved verbal agitation, while one quarter of all baths involved physical agitation. Not surprisingly, bathing-related agitation also has a considerable impact upon staff; more than three-quarters of participating bath staff reported finding the bathing of cognitively impaired residents stressful. Evidently, there is cause for improvement in the bathing experiences of both residents and staff in B.C. SCUs.

The use of logistic regression analyses revealed that the provision of initial and additional staff training reduced the likelihood of bathing-related agitation, while the presence of a bath policy and a dedicated bath team actually increased the likelihood of bathing-related agitation. Of the physical environmental features selected for study, only the provision of privacy and the presence of windows were found to reduce the likelihood of bathing-related agitation. These findings call into question some of the existing recommendations regarding the organizational and physical bathing environment. However, a sizeable proportion of participating bath aides believe that insufficient temperature control, increased noise levels and bathing equipment contribute to bathing-related agitation in their facilities, which suggests that further examination of the relationship between these physical environmental features and bathing-related agitation is warranted.

In this era of health care reform and fiscal responsibility, the study findings lead the researcher to recommend that facilities direct their resources to improving the organizational bathing environment.

APPENDICES

Appendix A: Agitated Behaviour Classification Scheme

Gutman, MacFadgen & Killam (1995) Agitated Behaviour Classification Scheme

Category	Behavioural Examples
1) Agitated/aggressive physical	Assaultive/violent behaviour, throwing objects, hitting, kicking, pushing, pinching, spitting, biting, pulling hair, making threatening gestures
2) Agitated/aggressive verbal	Angry/hostile outbursts, verbal harassment, screaming, cursing, obscene profane language
3) Agitated/non-aggressive physical	Repetitious mannerisms/actions, restlessness, physical resistance
4) Agitated/non-aggressive verbal	Repetitive words/sentences/questions, strange noises, muttering, demanding, complaining/negativism, crying, verbal resistance

Appendix B: Introductory Letter to Facilities



SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

**Gerontology Research Centre
Gerontology Program**

515 West Hastings Street, Suite #2800
Vancouver, British Columbia
Canada V6B 5K3
Tel: (604) 291-5062
Fax: (604) 291-5066

E-mail: gero@sfu.ca
<http://www.harbour.sfu.ca/gero/>

«Date»

«First_Name»«Last_Name»

«Facility_Name»

«Address_Line_1»

«Address_Line_2»

Dear «First_Name»,

My name is Heather Cooke and I am a graduate student in the Master of Arts in Gerontology Program at Simon Fraser University. I have received funding from the Michael Smith Foundation for Health Research to examine the organizational and environmental features associated with resident agitation during bathing on dementia special care units (SCUs). I am writing to request your participation in this important research.

Little is known about the occurrence of agitated behaviour during bathing in British Columbia's long-term care facilities and the impact of the organizational and physical bathing environment on such behaviour. This study provides an exciting opportunity to determine the frequency/type of agitated behaviour most commonly displayed by residents during bathing in British Columbia's SCUs, and the characteristic features of the organizational and physical bathing environment in British Columbia's SCUs. Findings from the study will be used to develop standards and best practices designed to reduce resident agitation and to guide health care planners in the appropriate distribution of funds for improving the care facility environment. A summary of the research findings and standards and best practices will be mailed to each participating SCU upon completion of the study.

Please find enclosed:

- one Resident Background Information Sheet
- one Bathing Area Survey
- one Bath Aide Information Survey
- an Agitated Behaviour Checklist
- two consent forms

I would ask that you, as Director of Care, complete the Resident Background Information sheet and Bathing Area Survey. Pilot testing of the surveys indicates that this should take no longer than one hour of your time. Please have each permanent (not casual) bath aide on the SCU fill out a Bath Aide Information Survey, which should take no more than 10 minutes to complete. The Agitated Behaviour Checklist is designed to provide information about the frequency and type of behaviour displayed during bathing. In order to obtain an accurate picture as possible, one checklist should be completed (by the bath aide) at the conclusion of each bath conducted over a two-week period. Again, pilot testing of the checklist indicates that this should take only 1-2 minutes per bath.

Simon Fraser University requires that each participant in a research project complete a consent form acknowledging that they understand what is required of them and that they are participating in the research voluntarily. Attached are consent forms for you and the bath aides to complete.

I will be contacting you within the next few weeks to confirm that you have received this request and to answer any questions you may have. I look forward to speaking with you and hope that I can count on your involvement.

Sincerely,

Heather Cooke
B.A., Dip. Gero, M.A. (Candidate)
Junior Graduate Trainee, Michael Smith Foundation for Health Research
Email: xxxx@sfu.ca
Phone/Fax: (xxx) xxx-xxxx

Appendix C: Consent Letters and Forms



SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

**Gerontology Research Centre
Gerontology Program**

515 West Hastings Street, Suite #2800
Vancouver, British Columbia
Canada V6B 5K3
Tel: (604) 291-5062
Fax: (604) 291-5066

E-mail: gero@sfu.ca
<http://www.harbour.sfu.ca/gero/>

May 24, 2005

AN INVITATION TO DIRECTORS OF CARE TO PARTICIPATE IN AN IMPORTANT STUDY CONCERNING RESIDENT AGITATION DURING BATHING ON DEMENTIA SPECIAL CARE UNITS

My name is Heather Cooke and I am a student in the Masters in Gerontology Program at Simon Fraser University. For my graduating thesis, I am completing a study on what I believe to be a very important topic: the organizational and environmental features associated with resident agitation during bathing on dementia special care units (SCUs).

Little is known about agitated behaviour during bathing in British Columbia's long-term care facilities and the impact of the bathing environment on such behaviour. This study provides an exciting opportunity to determine the frequency/type of agitated behaviour most commonly displayed by residents during bathing, and the characteristics of the organizational and physical bathing environment in B.C. SCUs. Participants in this study include Directors of Care and bath aides in all SCUs in B.C. Findings from the study will be used to develop standards and best practices to reduce resident agitation and to guide health care planners in the appropriate distribution of funds for improving the care facility environment. A summary of the research findings will be mailed to each participating SCU at the end of the study.

If you choose to participate, I would ask that you complete the attached Resident Background Information sheet and Bathing Area Survey. Together, these should take no more than one hour of your time to complete. The Information sheet is designed to provide basic background information regarding the demographics of the residents housed on the SCU. The Bathing Area Survey is designed to assess the organizational and physical environmental features of the SCU bathing area. All information that you provide will be kept confidential. Your name will not appear in any reports of the study. Please answer as many of the questions as you can, however, if you are uncomfortable with a question, leave it blank and move on to the next question.

If you are willing to participate, please sign the attached consent form and place it, along with the completed surveys, in the envelope provided. Thank you for considering this request.

Sincerely,

Heather Cooke
B.A., Dip. Gero, M.A. Candidate, and
Junior Graduate Trainee, Michael Smith Foundation for Health Research
Email: xxxx@sfu.ca
Phone/Fax: (xxx) xxx-xxxx



SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

**Gerontology Research Centre
Gerontology Program**

515 West Hastings Street, Suite #2800
Vancouver, British Columbia
Canada V6B 5K3
Tel: (604) 291-5062
Fax: (604) 291-5066

E-mail: gero@sfu.ca
<http://www.harbour.sfu.ca/gero/>

INFORMED CONSENT BY DIRECTORS OF CARE PARTICIPATING IN SCU BATHING STUDY

Simon Fraser University subscribes to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information it contains are given to you so that you have a full understanding of the procedures. In signing this form you are confirming that you have received a letter that describes the procedures, possible risks, and benefits of this research project, that you have had adequate opportunity to consider the information in the letter, and that you voluntarily agree to participate in the project.

Any information that is obtained during this study will be kept confidential to the full extent permitted by law. Knowledge of your identity is not required. You will not be required to write your name or any other identifying information on the research materials. Materials will be held in a secure location and will be destroyed at the end of the study.

Having been asked by Heather Cooke, M.A. Candidate, of the Gerontology Program at Simon Fraser University to participate in a research project, I have read the procedures in the attached letter, describing the study.

I understand the procedure to be used in this study and that there is no personal risk involved. I understand that I may withdraw my participation in this study at any time. I have been informed that the research material will be kept confidential.

I also understand that I may register any complaint I might have about the study with the researcher named above or with Dr. Andrew Wister, Director, Gerontology Programs, Simon Fraser University at Harbour Centre, #2800 – 515 W. Hastings St., Vancouver, B.C., V6B 5K3, Tel: 604-291-5062.

I may obtain a summary of the results of this study, upon its completion, by contacting:

Heather Cooke, M.A. Candidate, Gerontology Program, Simon Fraser University at Harbour Centre, 2800-515 W. Hastings St., Vancouver, B.C., V6B 5K3, Tel: 604-291-5062.

I agree to participate by:

- Completing the attached Resident Background Information sheet and Bathing Area Survey

as described in the document referred to above, during May/June 2005:

NAME (please type or print legibly): _____

ADDRESS: _____

SIGNATURE: _____ **WITNESS:** _____

DATE: _____



SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

**Gerontology Research Centre
Gerontology Program**

515 West Hastings Street, Suite #2800
Vancouver, British Columbia
Canada V6B 5K3
Tel: (604) 291-5062
Fax: (604) 291-5066

E-mail: gero@sfu.ca
<http://www.harbour.sfu.ca/gero/>

May 24, 2005

**AN INVITATION TO BATH AIDES TO PARTICIPATE IN AN
IMPORTANT STUDY CONCERNING RESIDENT AGITATION
DURING BATHING ON DEMENTIA SPECIAL CARE UNITS**

My name is Heather Cooke and I am a student in the Masters in Gerontology Program at Simon Fraser University. For my graduating thesis, I am completing a study on what I believe to be a very important topic: the organizational and environmental features associated with resident agitation during bathing on dementia special care units (SCUs).

Little is known about agitated behaviour during bathing in British Columbia's long-term care facilities and the impact of the bathing environment on such behaviour. This study provides an exciting opportunity to determine the frequency/type of agitated behaviour most commonly displayed by residents during bathing, and the characteristics of the organizational and physical bathing environment in B.C. SCUs. Participants in this study include Directors of Care and bath aides in all SCUs in B.C. Findings from the study will be used to develop standards and best practices to reduce resident agitation and to guide health care planners in the appropriate distribution of funds for improving the care facility environment. A summary of the research findings will be mailed to each participating SCU at the end of the study.

If you choose to participate, I would ask that you fill out the attached Bath Aide Information Survey. The survey should take no more than 10 minutes to do. The purpose of the survey is to provide information on the organizational and physical environment of the bathing area from the point of view of front-line staff. In order to get an accurate picture of resident agitation during bathing, I would also ask that you complete an Agitated Behaviour Checklist for each resident bath you give over a two-week period. All information that you provide will be kept confidential. Your name will not appear in any reports of the study. If you do not wish to provide an answer to a question on the survey, simply move on to the next question.

If you are willing to participate, please sign the attached consent form and place it, along with the completed survey, in the envelope provided and return it to your Director of Care. Thank you for considering this request.

Sincerely,

Heather Cooke

B.A., Dip. Gero, M.A. Candidate, and

Junior Graduate Trainee, Michael Smith Foundation for Health Research

Email: xxxxx@sfu.ca

Phone/Fax: (xxx)-xxx-xxxx



SIMON FRASER
UNIVERSITY
AT HARBOUR CENTRE

Gerontology Research Centre
Gerontology Program

515 West Hastings Street, Suite #2800
Vancouver, British Columbia
Canada V6B 5K3
Tel: (604) 291-5062
Fax: (604) 291-5066

E-mail: gero@sfu.ca
<http://www.harbour.sfu.ca/gero/>

INFORMED CONSENT BY BATH AIDES PARTICIPATING IN SCU BATHING STUDY

Simon Fraser University subscribes to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information it contains are given to you so that you have a full understanding of the procedures. In signing this form you are confirming that you have received a letter that describes the procedures, possible risks, and benefits of this research project, that you have had adequate opportunity to consider the information in the letter, and that you voluntarily agree to participate in the project.

Any information that is obtained during this study will be kept confidential to the full extent permitted by law. Knowledge of your identity is not required. You will not be required to write your name or any other identifying information on the research materials. Materials will be held in a secure location and will be destroyed at the end of the study.

Having been asked by Heather Cooke, M.A. Candidate, of the Gerontology Program at Simon Fraser University to participate in a research project, I have read the procedures in the attached letter, describing the study.

I understand the procedure to be used in this study and that there is no personal risk involved. I understand that I may withdraw my participation in this study at any time. I have been informed that the research material will be kept confidential.

I also understand that I may register any complaint I might have about the study with the researcher named above or with Dr. Andrew Wister, Director, Gerontology Programs, Simon Fraser University at Harbour Centre, #2800 – 515 W. Hastings St., Vancouver, B.C., V6B 5K3, Tel: 604-291-5062.

I may obtain a summary of the results of this study, upon its completion, by contacting:

Heather Cooke, M.A. Candidate, Gerontology Program, Simon Fraser University at Harbour Centre, 2800-515 W. Hastings St., Vancouver, B.C., V6B 5K3, Tel: 604-291-5062.

I agree to participate by:

- Completing the attached Bath Aide Information Survey
- Completing an Agitated Behaviour Checklist for each resident bath I give over a two-week period

as described in the document referred to above, during May/June 2005:

NAME (please type or print legibly): _____

ADDRESS: _____

SIGNATURE: _____ **WITNESS:** _____

DATE: _____

Appendix D: Agitated Behaviour Checklist

Agitated Behaviour Checklist

INSTRUCTIONS: Please fill out one form for *EACH* resident bath conducted over a two-week period. At the end of the two-week period, please return the completed forms to your Director of Care. Thank you.

DATE: _____ TIME: _____ RESIDENT'S ROOM #: _____

From the time the resident was informed it was bath time to the time the resident left the bathing area following completion of their bath, did any of the following behaviours occur? Check all that apply.

- Pushing/shoving
- Slapping
- Hitting/punching
- Pinching/squeezing
- Pulling hair
- Scratching
- Biting
- Spitting
- Elbowing
- Kicking
- Making threatening gestures
- Throwing objects

- Name calling
- Making verbal threats (e.g., "I'm going to report you")
- Cursing, directed at bath staff
- Hostile, accusatory language directed at bath staff
- Screaming

- Physical resistance
(e.g., resident refused to let you wash parts of their body)
- Repetitive mannerisms
(e.g., resident picked at hands or rubbed arms continuously)
- Restlessness
(e.g., resident tried to get out of the bath or leave the bathing area)

- Verbal resistance (e.g., “No, I’m not going”; “No, don’t do that”)
- Repetitive words/sentences/questions
- Strange noises
- Muttering
- Demanding
- Complaining/negativism (e.g., “That hurts”; “I’m too cold”; “You’re doing it wrong”)

- No agitated behaviour witnessed

Appendix E: Bathing Area Therapeutic Environmental Rating Scale

Bathing Area Survey

INSTRUCTIONS: Please answer the following questions to the best of your ability. Do NOT include your name anywhere on this survey. Thank you.

Section 1 – The Physical Environment

A) The Bathing Context

1. What year was the Special Care Unit built? _____

2. Have any renovations been made to the bathing area?

Yes No

Please describe (include date and type of renovation):

3. Approximately how large is the bathing area (in sq. ft)?

_____ Sq. ft.

4. How many bathtubs and showers are found in the bathing area?

____ Bathtub ____ Shower

5. Which of the following permanent fixtures are also located in the bathing area?
(Check all that apply)

Toilet Sink Other (Please specify)

6. List the make/model and type of bathtub used:

Tub #1: Make/Model: _____

Type of entry: Side entry End entry Lift-over (approximately how high does the mechanical lift raise the resident? ___ft)

Tub #2: Make/Model: _____

Type of entry: Side entry End entry Lift-over (approximately how high does the mechanical lift raise the resident? ___ft)

B) Degree of Privacy

1. How many baths/showers are conducted at any one time in the bathing area?

Baths _____ Showers _____

2. Is visual privacy provided during a shower?

Yes No No shower stall present

If yes, how? (Please specify)

3. Which of the following are stored in the bathing area? (Check all that apply)

Supply/utility carts Incontinence supplies

Lifts Commode(s) Wheelchairs

None of the above Other (Please specify)

4. Would other staff access the above items during resident baths?

Yes No

5. If a shower stall is present in the bathing area, does it have a shower curtain?

Yes No No shower stall present

6. Does the bathing area include a dressing area in which residents can dress following their bath?

Yes No

7. Does the bathing area include hooks from which resident's clothes/robes can be hung?

Yes No

8. Is the door to the bathing area kept closed during resident baths?

Yes No

9. Is the door to the bathing area locked during bathing?

Yes No

10. Is a do-not-disturb sign placed on the door to the bathing area during a resident bath?

Yes No

C) Lighting and Glare

1. How many windows are located in the bathing area?

0 (*proceed to Q.4*) 1 (*proceed to Q.2*) 2 (*proceed to Q.2*)

2. Are the windows made of:

Frosted/etched glass Clear glass

3. Are there any window coverings?

Yes If yes, what type: Curtains Vertical blinds

No Horizontal blinds Pull down shade

4. How many skylights are located in the bathing area?

0 1 2

5. Type of light fixtures: (Check all that apply)

Ambient (uniform system of lighting used to brighten an entire space)

Recessed (light source is recessed into a cylinder placed above ceiling)

Cove (light source is attached to wall and directed up to reflective surface)

- Wall sconces (lighting fixture attached to wall)
- Track lighting (lighting fixture in which light is aimed specifically at an area)
- Table lamp

6. Can lights be turned on individually?

- Yes No

7. Can lights be dimmed?

- Yes No

8. If shower stall is present, is there a light fixture within shower stall?

- Yes No No shower stall present

9. Describe type of floor covering used in bathing area:

10. Is the floor covering non-slip?

- Yes No

11. Is the floor waxed on a regular basis?

- Yes If yes, how often? _____
- No

12. What colour is the floor covering?

D) Noise

1. Material used to cover bathing area walls is: (Check all that apply)

- Wallpaper Paint Vinyl wall coverings Tile
- Moisture resistant acoustical panels

2. Is an exhaust fan present in the bathing area?

- Yes (*proceed to Q.3*) No (*proceed to Q.4*)

3. Is the fan used during resident baths?

- Yes No

4. Is music played during resident baths?

- Yes No

E) Temperature Control

1. Which of the following are found in the bathing area? (Check all that apply)

- Separate thermostat Heating lamp(s) above drying/dressing area
 Blanket/towel warmer None of the above

F) Décor

1. What is the colour of the walls?

2. Which of the following are found in the bathing area? (Check all that apply)

- Pictures Plants Towel racks
 Small shelves displaying knickknacks
 Brightly coloured towels displayed on towel racks
 Armoire or cabinet for storing towels
 Comfortable chair for residents to sit on while drying/dressing
 Small vanity or dressing table
 Signs/notices on how to use bathing equipment/bathing procedures
 Additional/distinctive features - e.g., decorative wallpaper border: (Please list)

Section 2 – The Organizational Environment

A) The Bathing Context

1. On average, how many times a week is a resident bathed?

- 1 2 3 4 5 6 7

2. The primary method of bathing is:

- Tub bath Shower Bed bath

3. Bathing typically occurs in:
- Common bathing area
 - Resident's own bathroom
 - Resident's own bedroom
4. Are newly admitted residents (or their families) asked about their bathing preferences (i.e., type/time of bathing)?
- Yes No
5. Do residents have a choice of bathing method (i.e., tub, shower, bed bath)?
- Yes No
6. The time and day of a resident's bath is determined by:
- Resident Family member on behalf of resident
 - Bed/room occupied by resident
 - Other (Please explain)
7. Baths are usually scheduled: (Check all that apply)
- Before breakfast
 - Between breakfast and lunch
 - Between lunch and shift change
 - Between shift change and dinner
 - After dinner
8. The average length of a bath is:
- _____ minutes
9. Does the facility have an explicit bathing policy?
- Yes If yes, please attach
- No
- Comments:

10. Do bath staff have the flexibility to alter the frequency and form of bathing in accordance with a resident's needs or preferences?

Yes No

Comments:

B) Staff Training

1. What is the educational background of bath staff? (List for all bath staff)

2. Would all bath staff have received training in bathing procedures prior to working at your facility?

Yes No

Comments:

3. Is any on-the-job training provided for bath staff when they first start at your facility?

Yes (*proceed to Q.4*) No (*proceed to Q.7*)

4. How many initial training sessions are provided?

1 2 3 More than 3

5. On average, what is the length of these training sessions?

6. What information/material does the training cover? (Check all that apply)

Safety guidelines

Mechanics of bathing

General information about dementia

Strategies to avoid/reduce agitated behaviours during bathing

Individualization of bathing care

Other (Please specify):

7. Is any additional on-the-job training provided beyond the initial training?

Yes (*proceed to Q.8*) No (*proceed to Section C*)

8. What information/material does the additional training cover? (Check all that apply)

Safety guidelines

Mechanics of bathing

General information about dementia

Strategies to avoid/reduce agitated behaviours during bathing

Individualization of bathing care

Other (Please specify):

9. On average, what is the length of these additional training sessions?

10. How frequently is additional training offered?

B) Staff Assignment

1. Does the unit have a dedicated bath team (or individual)?

Yes

No If no, please explain:

2. How many bath staff does the unit have?

1 2 3 More than 3

3. How many bath staff are working at any given time?

1 2 3 More than 3

4. What are the hours of the bath staff?

Bath aide #1: Hours: _____

Bath aide #2: Hours: _____

Bath aide #3: Hours: _____

5. Typically, how many bath staff are present during a resident's bath?

1 2 3 More than 3

Section 3 – Agitation

Agitation during the bathing process is a problem in many SCUs.

1. In your facility is agitation during the bathing process a:

Minor issue (i.e., occurs less than 10% of the time)

Moderate issue (i.e., occurs between 11% and 25% of the time)

Major issue (i.e., occurs more than 25% of the time)

2. What do you think might contribute to the elicitation/exacerbation of agitation during the bathing process among your residents?

3. Please identify the two most important features in each of the following categories. Place a 1 beside the most important, and a 2 beside the second most important.

A) Organizational bathing environment

- _____ Presence of an explicit bathing policy
- _____ Regular staff training
- _____ Permanent staff assignment

B) Physical bathing environment

- _____ Privacy
- _____ Temperature control
- _____ Lighting
- _____ Noise
- _____ Home-like décor
- _____ Bathing equipment

4. How many residents have orders for routine or PRN medications prior to bathing?

_____ residents

5. In the past year, how many incident reports involving bathing have been filed?

_____ reports

Comments:

😊 Thank-you for taking the time to complete the survey – your participation is appreciated 😊

Appendix F: Bath Aide Information Survey

Bath Aide Information Survey

INSTRUCTIONS: Please answer the following questions to the best of your ability. Do NOT include your name anywhere on this survey. When you have completed the survey, please place it in the envelope provided, seal the envelope and return it to your Director of Care. Thank you.

A) Demographic Information

1. Please list your:

Age: _____

Sex: _____

Number of years employed at this facility (i.e., SCU) as a bath aide: _____

Total number of years experience as a bath aide: _____

2. Please list your training/qualifications:

B) The Bathing Environment

1. Was any on-the-job training provided when you first started as a bath aide at this facility?

Yes (*proceed to Q.2*) No (*proceed to Q.4*)

2. How many initial training sessions were provided?

0 1 2 3 More than 3

3. What information/material did the training cover? (Check all that apply)

Safety guidelines

Mechanics of bathing

General information about dementia

Strategies to avoid/reduce agitated behaviours during bathing

Individualization of bathing care

Other (Please specify):

4. Is any additional training provided to you as a bath aide?

Yes (*proceed to Q.5*) No (*proceed to Q.7*)

5. What information/material does the ongoing training cover? (Check all that apply)

Safety guidelines

Mechanics of bathing

General dementia-related information

Strategies to avoid/reduce agitated behaviours during bathing

Individualization of bathing care

Other (please specify):

6. How frequently are additional training sessions offered?

7. Do you feel that the training opportunities you receive are sufficient for the challenges of your position?

Yes No

Please explain:

8. How would you rate your knowledge of dementia and the behavioural symptoms that arise as part of the disease?

Excellent Very good Satisfactory Unsatisfactory

9. Do you feel that you have sufficient knowledge of options for dealing with behavioural symptoms (such as resident agitation) during bathing?

Yes No

Please explain:

10. What type of strategies do you typically use to deal with resident agitation during the bathing process?

11. Does your facility have an explicit bathing policy for residents of the Special Care Unit?

Yes (*proceed to Q.12*) No (*proceed to Q.13*)

Not that I am aware of (*proceed to Q.13*)

12. Do you feel that the bathing policy adequately reflects the wishes/needs of:

a) Residents: Yes No

Please explain:

b) Staff: Yes No

Please explain:

13. What is the typical procedure for bathing residents? (i.e., what do you do first, second)

14. Can you alter the frequency and form of bathing according to a resident's needs or preferences?

Yes No

Please explain:

15. If a resident is upset, can you reschedule the bath?

Yes No

Please explain:

16. Do you feel that you have the support and validation from both supervisors and co-workers if you are willing to try a new approach when bathing a resident?

Yes No

Please explain:

17. Do care plans involve discussion of a resident's bathing preferences?

Yes No

Please explain:

18. How stressful do you find the bathing of cognitively impaired residents?

Very stressful Quite stressful
 Somewhat stressful Not at all stressful

Please explain:

19. What do you consider the most challenging aspect of your job?

20. Which of the following features of the physical bathing environment do you think might contribute to resident agitation during the bathing process: (Check all that apply)

Not enough opportunity for resident privacy

Physical layout (please explain)

Bathing area is: too warm too cold

Lighting (please explain)

Noise control - e.g., noisy bath equipment; tiled walls create echo (please explain)

Décor (please explain)

Bathing equipment - e.g., bathtub or lift apparatus (please explain)

Number of grab bars/handrails (please explain)

Inadequate bathing supplies - e.g., towels are not soft (please explain)

Other (please specify):

21. What suggestions would you make for improving the experiences of residents during the bathing process in your facility?

22. What suggestions would you make for improving the experiences of bath staff during the bathing process in your facility?

23. Please rate your overall satisfaction with the bathing process at your facility:

- Very satisfied Quite satisfied
 Somewhat satisfied Not at all satisfied

Appendix G: Resident Background Information

Resident Background Information

Please provide the following information regarding the residents on your Special Care Unit:

- 1) Total number of residents: _____
- 2) Age range of residents:
 Youngest: _____ Oldest: _____
- 3) Average age of residents: _____
- 4) Number of female residents: _____
- 5) Number of male residents: _____
- 6) Please attach a list of the primary diagnosis (i.e., dementia, Alzheimer's Disease, Frontal Lobe dementia) for *each* resident (do NOT include resident names)
- 7) Please attach a list of the most recent MMSE score (please include the date of the assessment) on file for *each* resident (do NOT include resident names)

Appendix H: Examples of Most Common Bathtubs in Use

Bathtub model – Arjo Century



Bathtub model – Arjo Carousel



Bathtub model – Arjo Serenade



REFERENCE LIST

- Beck, C., Ortigara, A., Mercer, S., & Shue, V. (1999). Enabling and empowering certified nursing assistants for quality dementia care. *International Journal of Geriatric Psychiatry, 14*(3), 197-212.
- Brawley, E.C. (2002). Bathing environments: How to improve the bathing experience. *Alzheimer's Care Quarterly, 3*(1), 38-41.
- Brawley, E.C. (2006). Lighting and daylighting. In *Design Innovations for Aging and Alzheimer's: Creating Caring Environments* (pp. 55-76). New Jersey: John Wiley and Sons, Inc.
- Briller, S.H., Proffitt, M.A., Perez, K., Calkins, M.P., & Marsden, J.P. (2001). *Creating Successful Dementia Care Settings, Volume 2: Maximizing Cognitive and Functional Abilities*. Baltimore: Health Professions Press.
- Burgener, S.C., Jirovec, M., Murrell, L., & Barton, D. (1992). Caregiver and environmental variables related to difficult behaviors in institutionalized, demented elderly persons. *Journal of Gerontology: Psychological Sciences, 47*(4), 242-249.
- Calkins, M.P. (2002). The physical environment of the bathing room. In A. Barrick, J. Rader, B. Hoeffler, & P.D. Sloane (Eds.), *Bathing Without a Battle: Personal Care of Individuals with Dementia* (pp. 94-101). Springer Publishing Company.
- Canadian Study of Health and Aging Working Group (1994). Canadian Study of Health and Aging: Study methods and prevalence of dementia. *Canadian Medical Association Journal, 150*(6), 899-913.
- Chappell, N.L., & Reid, R.C. (2000). Dimensions of care for dementia sufferers in long-term care institutions: are they related to outcomes? *Journal of Gerontology: Social Sciences, 55B*(4), S234-S244.
- Cluff, P.J. (1988). Design-related issues and solutions for meeting the needs of the very old in institutional settings. In G. M. Gutman & N. K. Blackie (Eds.), *Housing the Very Old* (pp.45-62). Gerontology Research Centre, Simon Fraser University.
- Cohen-Mansfield, J., Marx, M.S., & Rosenthal, A.S. (1989). A description of agitation in a nursing home. *Journal of Gerontology, 44*(3), M77-M84.
- Day, K., & Calkins, M. (2002). Design and dementia. In R. Bechtel & A. Churchman (Eds.), *The New Environmental Psychology Handbook* (pp.374-393). John Wiley & Sons.
- Day, K., Carreon, D., & Stump, C. (2000). The therapeutic design of environments for people with dementia: A review of the empirical research. *The Gerontologist, 40*(4), 397-416.

- DeMaris, A. (1995). A tutorial in logistic regression. *Journal of Marriage and the Family*, 57(4), 956-968.
- Epp, T.D., MacPhee, R., Whitfield, K., & Pickett, D. (2001). Measuring the leisure experience of bathing. *Seniors' Housing Update*, 10(2), 17-19.
- Gutman, G., & Killam, J. (1989). *Special Care Units for Dementia: Staff and Family Perceptions*. Vancouver: Simon Fraser University
- Gutman, G., MacFadgen, L., & Killam, J. (1995). *Psychogeriatric Client Identification Report – Phase I Final Report*. Report submitted to the Continuing Care Division, British Columbia Ministry of Health and Ministry Responsible for Seniors.
- Hall, G.R., & Buckwalter, K.C. (1987). Progressively lowered stress threshold: A conceptual model for care of adults with Alzheimer's Disease. *Archives of Psychiatric Nursing*, 1(6), 399-406.
- Hampton, J.K., Jr. (1991). *The Biology of Human Aging*. California: Wm.C. Brown Publishers.
- Hoeffler, B., Rader, J., & Barrick, A. (2002). Understanding the battle. In A. Barrick, J.Rader, B. Hoeffler, & P.D. Sloane (Eds.), *Bathing Without a Battle: Personal Care of Individuals with Dementia* (pp. 3-10). Springer Publishing Company.
- Hoeffler, B., Rader, J., McKenzie, D., Lavelle, M., & Stewart, B. (1997). Reducing aggressive behavior during bathing cognitively impaired nursing home residents. *Journal of Gerontological Nursing*, 23(5), 16-23.
- Holliday, S.G., & Gutman, G. (1994). *Introduction to Gerontology: Gerontology 300-3 Study Guide*. Vancouver: Simon Fraser University.
- Kovach, C.R., & Meyer-Arnold, E.A. (1997). Preventing agitated behaviors during bath time. *Geriatric Nursing*, 18(3), 112-114.
- Kovach, C.R., & Meyer-Arnold, E.A. (1996). Coping with conflicting agendas: The bathing experience of cognitively impaired older adults. *Scholarly Inquiry for Nursing Practice: An International Journal*, 10(1), 23-36.
- Lawton, M. P. (1998). Environment and aging: Theory revisited. In R.J. Scheidt & P.G. Windley (Eds.), *Environment and Aging Theory: A Focus on Housing*, pp.1-31. London: Greenwood.
- Lawton, M. P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M. P. Lawton (Eds.), *Psychology of Adult Development and Aging*, pp. 619-674. Washington, DC: American Psychological Association.
- McCallion, P., Toseland, R., Lacey, D., & Banks, S. (1999). Educating nursing assistants to communicate more effectively with nursing home residents with dementia. *The Gerontologist*, 39(5), 546-558.
- Maslow, K., & Ory, M. (2001). Review of a decade of dementia special care unit research: Lessons learned and future directions. *Alzheimer's Care Quarterly*, 2(3), 10-16.

- Maxfield, M., Lewis, R., & Cannon, S. (1996). Training staff to prevent aggressive behavior of cognitively impaired elderly patients during bathing and grooming. *Journal of Gerontological Nursing*, 22(1), 37-43.
- Miller, M.F. (1997). Physically aggressive resident behavior during hygienic care. *Journal of Gerontological Nursing*, 23(5), 24-39.
- Miller, R.I. (1994). Managing disruptive responses to bathing by elderly residents: Strategies for the cognitively impaired. *Journal of Gerontological Nursing*, 20(11), 35-39.
- Morgan, D., & Stewart, N. (1998). High versus low density special care units: Impact on the behaviour of elderly residents with dementia. *Canadian Journal on Aging*, 17(2), 143-165.
- Namazi, K.H., & Johnson, B.D. (1996). Issues related to behavior and the physical environment: Bathing cognitively impaired patients. *Geriatric Nursing*, 17(5), 234-239.
- National Institute for Health & Clinical Excellence (2006, January). *NICE consults on revised first draft guidance on the use of drugs to treat Alzheimer's disease*. Retrieved January 25, 2006 from http://www.nice.org.uk/pdf/2006_001_Alz_Press_release_AD_App_Jan_06.pdf
- Rader, J., & Barrick, A. (2000). Ways that work: Bathing without a battle. *Alzheimer's Care Quarterly*, 1(4), 39-45.
- Rader, J., Lavelle, M., Hoeffler, B., & McKenzie, D. (1996). Maintaining cleanliness: An individualized approach. *Journal of Gerontological Nursing*, 22(3), 32-38.
- Sloane, P.D., Hoeffler, B., Mitchell, C.M., McKenzie, D., Barrick, A., Rader, J., Stewart, B.J., et al. (2004). Effect of person-centered showering and the towel bath on bathing-associated aggression, agitation, and discomfort in nursing home residents with dementia: A randomized controlled trial. *Journal of the American Geriatrics Society*, 52(11), 1795-1804.
- Sloane, P.D., Honn, V.J., Dwyer, S.A., Wieselquist, J., Cain, C., & Myers, S. (1995a). Bathing the Alzheimer's patient in long term care: Results and recommendations from three studies. *American Journal of Alzheimer's Disease*, 10(4), 3-11.
- Sloane, P.D., Mitchell, C.M., Preisser, J.S., Phillips, C., Commander, C., & Burkner, E. (1998). Environmental correlates of resident agitation in Alzheimer's disease special care units. *Journal of the American Geriatrics Society*, 46(7), 862-869.
- Sloane, P.D., Rader, J., Barrick A., Hoeffler, B., Dwyer, S., McKenzie, D., et al. (1995b). Bathing persons with dementia. *The Gerontologist*, 35(5), 1995.
- Somboontanont, W., Sloane, P.D., Floyd, F.J., Holditch-Davis, D., Hogue, C.C., & Mitchell, C.M. (2004). Assaultive behaviour in Alzheimer's Disease: Identifying immediate antecedents during bathing. *Journal of Gerontological Nursing*, 30(9), 22-29.
- Talerico, K., Evans, L., & Strumpf, N. (2002). Mental health correlates of aggression in nursing home residents with dementia. *The Gerontologist*, 42(2), 169-177.

Whall, A.L., Black, M.E., Groh, C.J., Yankou, D.J., Kuperschmid, B.J., & Foster, N.L. (1997). The effect of natural environments upon agitation and aggression in late stage dementia patients. *American Journal of Alzheimer's Disease*, 12(5), 216-220.

Wister, A.V. (2005). The Built Environment and Longevity: Multilevel Salutogenic and Pathogenic Pathways. *Journal of Housing for the Elderly*, 19(2), 49-70.