
Staff-Averse Challenging Behaviour in Older Adults with Intellectual Disabilities

Sigan L. Hartley and William E. MacLean

Department of Psychology, University of Wyoming, Laramie, WY, USA

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Background People with intellectual disabilities are increasingly reaching older adulthood. Little is known about age-related change in the prevalence of challenging behaviours among older adults with intellectual disabilities.

Materials and method The frequency and severity of staff-averse challenging behaviours of 132 older adults with intellectual disabilities was assessed through informant ratings on the Inventory of Client and Agency Planning at two time points 8–10 years apart.

Results There was an intraindividual decline in the frequency and severity of challenging behaviour using

both lenient and more restricted definitions of challenging behaviour. There was a low prevalence but high comorbidity of severe challenging behaviour. Level of mental retardation and adaptive behaviour were related to the frequency and severity of challenging behaviour.

Conclusions An understanding of age-related intraindividual change in challenging behaviour has implications for staff wellbeing and optimizing the care of older adults with intellectual disabilities.

Keywords: ageing, challenging behaviour, elderly, intellectual disabilities, mental retardation, older adults

Introduction

Medical advances, changes in lifestyles, developments in assistive technology, and improved health care services have led to an increase in the number of people with intellectual disabilities reaching older adulthood (Janicki *et al.* 1999; Horwitz *et al.* 2005). The average life expectancy of older adults with intellectual disabilities is 66.1 years and younger adults with intellectual disabilities are expected to live as long as their peers in the general population (Janicki *et al.* 1999; Horwitz *et al.* 2005). There is a paucity of research on the unique obstacles to caring for older adults with intellectual disabilities (e.g. McCallion & McCarron 2004; Strydom *et al.* 2005). Care staff report that the greatest difficulty in caring for people with intellectual disabilities is challenging behaviour (e.g. Buckhalt *et al.* 1990; Hatton *et al.* 1995). Insight into the prevalence of challenging behaviour as older adults with intellectual disabilities age into their senior years has implications for staff wellbeing and optimizing care of an ageing population.

There is a lack of consensus regarding the definition and measurement of 'challenging behaviour' among persons with intellectual disabilities (e.g. Lowe & Felce

1995; Joyce *et al.* 2001). Many investigators argue that behaviours should be defined as challenging not only because they have ill-effects for the person with intellectual disabilities, but because of their real life impact and consequences for care staff (Kiernan & Kiernan 1994; Lowe & Felce 1995; Elgie & Hastings 2002). Staff report that the 'most challenging' behaviours of clients with intellectual disabilities are behaviours that directly affect staff or hinder staff from providing services (Hastings 1995; Lowe & Felce 1995; Elgie & Hastings 2002). These behaviours, referred to as 'staff-averse challenging behaviours', include aggression, disruptive behaviour, uncooperative behaviour, and socially inappropriate behaviour (Elgie & Hastings 2002). From the perspective of staff, behaviours that primarily affect clients themselves (e.g. stereotypy or withdrawn behaviours) are less challenging (Lowe *et al.* 1995; Lowe & Felce 1995; Elgie & Hastings 2002). Prevalence rate of staff-averse challenging behaviour among adults with intellectual disabilities varies depending on the definition of 'challenging'. Studies suggest that 75% to over 90% of adults with intellectual disabilities display at least one staff-averse challenging behaviour to some extent (e.g. Eyman & Borthwick 1980; Deb & Hunter 1991; Bruininks *et al.*

1994; Rojahn *et al.* 2001). However, when more restrictive criteria are used to identify only those behaviours that are severely challenging, prevalence is estimated to be approximately 6–7% (Emerson 1995; Emerson *et al.* 1997; Joyce *et al.* 2001).

Staff exposed to frequent and severe challenging behaviours by clients with intellectual disabilities are at increased risk of stress, burnout and mental health problems (Jenkins *et al.* 1997; Hastings & Brown 2002). Challenging behaviours elicit negative emotional reactions in staff, and over time this negative effect is thought to accumulate and lead to decreased psychological well-being (Mitchell & Hastings 2001; Hastings 2002). Staff stress can have a major impact on the quality of services for people with intellectual disabilities by reducing positive engagement with clients (Rose *et al.* 1998; Mansell *et al.* 2003). Increasing staff's awareness of changes in the prevalence of staff-averse challenging behaviour as older adults with intellectual disabilities age into their senior years may help them better prepare for encountering these behaviours, and increase quality of care for this population.

Studies suggest that challenging behaviour decreases among adults with intellectual disabilities after 40 years of age (e.g. Kiernan & Moss 1990; Haverman *et al.* 1994; Kiernan *et al.* 1995; Cherry *et al.* 1997; Joyce *et al.* 2001). Lower energy levels, deteriorating physical health, decline in cognitive functioning and age-related changes in mood may reduce the occurrence of challenging behaviour as adults with intellectual disabilities reach older adulthood. However, this research largely examined correlations between age and challenging behaviour in cross-sectional samples or compared rates of challenging behaviour between groups of younger and older adults with intellectual disabilities (Kiernan & Moss 1990; Haverman *et al.* 1994; Kiernan *et al.* 1995; Cherry *et al.* 1997; Joyce *et al.* 2001). This methodology assesses group-level change and is not sensitive to differences in challenging behaviour associated with intraindividual change over time.

Reported declines in challenging behaviours may reflect the fact that adults with intellectual disabilities living the longest tend to have milder cognitive impairment, better developed self-care skills, and are less physically and neurologically impaired (Eyman *et al.* 1991; Raitasuo *et al.* 1997; Janicki *et al.* 1999). Therefore, a population-level decrease in challenging behaviours may be due to the presence of fewer severely disabled persons, who demonstrate the greatest rates of challenging behaviour (McGillivray & McCabe 2004). Moreover, several researchers assert that adults with intellectual disabilities

actually have increased vulnerability to challenging behaviours as they age into older adulthood due to increased rates of psychiatric disorders and dementia (Cooper 1997; Cooper & Prasher 1998; Davidson *et al.* 1999). An increased prevalence of psychiatric disorders such as depression and generalized anxiety has been found among older adults with intellectual disabilities (Cooper 1997). Dementia among persons with intellectual disabilities of all aetiologies (>65 years) is estimated to occur at up to four times the rate found in the general population (Cooper 1997). Dementia, in turn, is associated with a high prevalence of challenging behaviour such as disruptive and aggressive behaviour among persons with intellectual disabilities (e.g. Cooper 1997; Cooper & Prasher 1998). At an individual-level, older adults with intellectual disabilities may be increasingly vulnerable to displaying challenging behaviour as they age from older adulthood into their senior years. A within-person investigation of the frequency and severity of challenging behaviour over time is needed to fully understand age-related change in challenging behaviour of older adults with intellectual disabilities.

The purpose of the present study is to investigate intraindividual change in staff-averse challenging behaviour among older adults with intellectual disabilities. Informant ratings of the frequency and severity of hurtful to others, destructive to property, disruptive, socially inappropriate, and uncooperative behaviour of 132 older adults with intellectual disabilities (≥ 50 years) were examined at two time points 8–10 years apart. An intraindividual increase in the frequency and severity of staff-averse challenging behaviours with age was predicted.

Method

Participants

A total of 206 older adults with intellectual disabilities ≥ 50 years residing in Wyoming and receiving disability services were assessed in 1996–1998 (time 1) as part of a Medicaid Waiver evaluation. A total of 132 (64.1%) of these participants were living, residing in Wyoming, and receiving developmental disability services in 2003–2005 (time 2) and were reassessed at this time. The state agency that maintains the data set indicated that usually participants are not reassessed because they die, but a minority of participants may no longer live in Wyoming or no longer receive disability or Medicaid services. Table 1 displays the subject characteristics at time 1 of the 132 participants reassessed in 2003–2005 and the 74 participants not reassessed.

Table 1 Comparison of participants assessed at time 2 and those only assessed at time 1

	Time 1 only (n = 74)	Reassessed (n = 132)
Sex (%)		
Males	60.8	50.0
Females	39.2	50.0
Race (%)		
Caucasian	91.9	93.2
African-American	1.4	0.8
American-Indian	4.1	3.0
Hispanic	2.7	3.0
Level of mental retardation (%)		
Mild	51.4	40.2
Moderate	16.2	22.0
Severe	14.9	11.4
Profound	17.6	26.5
Type of residence (%)		
Family/host family	5.4	2.3
Independent living situation	20.3	31.1
Group home	45.9	34.8
Medical care facility*	12.2	1.5
State institution	16.2	30.3
Physical health		
No limitations*	20.3	50.0
Few or slight limitations	45.9	38.6
Significant limitations*	33.8	11.4
Mean chronological age (SD)*	62.82 (9.28)	59.22 (7.60)
Mean broad independence age equivalent (SD)	55.59 (42.06)	50.16 (33.56)
Mean staff-averse challenging behaviour (SD)		
Hurtful to other – frequency	0.74 (1.07)	1.06 (1.28)
Hurtful to other – severity*	0.58 (0.99)	0.95 (1.20)
Destructive to property – frequency*	0.49 (0.95)	0.86 (1.29)
Destructive to property – severity	0.46 (1.02)	0.58 (0.96)
Disruptive behaviour – frequency	2.61 (1.74)	2.73 (1.51)
Disruptive behaviour – severity	1.30 (1.20)	1.44 (1.07)
Socially offensive behaviour – frequency	2.35 (1.76)	2.49 (1.72)
Socially offensive behaviour – severity	1.26 (1.19)	1.39 (1.19)
Uncooperative behaviour – frequency	2.18 (1.76)	2.44 (1.57)
Uncooperative behaviour – severity	1.14 (1.23)	1.41 (1.08)

Significant difference at * $P < 0.05$.

Chi-squares indicated that there was not a significant difference in the ratio of males to females [$\chi^2 (1) = 2.23$, $V = 0.10$, $P = 0.14$], race [$\chi^2 (3) = 0.34$, $V = 0.04$, $P = 0.95$], or level of mental retardation [$\chi^2 (3) = 4.23$, $V = 0.14$, $P = 0.14$] between the 132 participants reassessed and the participants not reassessed. There was a significant difference in physical health [$\chi^2 (2) = 23.55$, $V = 0.34$, $P < 0.01$] between the 132 participants reassessed and participants not reassessed. Bonferroni-corrected chi-square analyses indicated that the 132 participants

who were reassessed were more likely to have no limitations in daily activity due to physical health [$\chi^2 (1) = 15.23$, $V = -0.27$, $P < 0.01$] and less likely to have significant limitations in daily activity due to physical health [$\chi^2 (1) = 17.57$, $V = 0.31$, $P < 0.01$] than the participants not reassessed. There was a significant difference in type of residence between participants reassessed and those who were not [$\chi^2 (4) = 18.70$, $V = 0.30$, $P < 0.01$]. Bonferroni-corrected chi-square analyses revealed that the 132 participants reassessed were less likely to live in

medical care facilities [$\chi^2(2) = 10.63, V = -0.23, P < 0.01$] than participants not reassessed. An independent samples *t*-test indicated that the 132 participants reassessed were also significantly younger than participants not reassessed [$t(205) = 3.02, P < 0.01$]. There was not a significant difference in ICAP Broad Independence age equivalent between the 132 participants reassessed and participants not reassessed [$t(205) = 1.02, P = 0.31$].

On the ICAP problem behaviours, the 132 participants reassessed had a significantly higher severity of hurtful to others [$t(205) = 2.35, P = 0.02$] and frequency of destructive to property [$t(205) = -2.35, P = 0.02$] than participants not reassessed. There was not a significant difference in the frequency of hurtful to others [$t(205) = -1.81, P = 0.07$] and severity of destructive to property [$t(205) = -0.87, P = 0.39$]. There was also not a significant difference in the frequency and severity of disruptive behaviour [$t(205) = -0.53, P = 0.60; t(205) = -0.85, P = 0.40$], socially offensive behaviour [$t(205) = -0.56, P = 0.58; t(214) = -0.79, P = 0.43$], and uncooperative behaviour [$t(205) = -1.01, P = 0.29; t(214) = -1.66, P = 0.10$] between the 132 participants reassessed and those who were not.

Change in subject characteristics of the 132 participants from time 1 to time 2 that may indicate the presence of major life change were examined. Participants largely did not encounter major life change in residential setting or disability services. Thirty-seven (28.0%) participants had a different type of residence at time 2. The majority of these participants moved from family/host families or independent living situations to group homes or state institutions. Nine (6.8%) participants had a different primary disability service provider at time 2. Paired sample *t*-test indicated that participants' ICAP Broad Independence age equivalent was significantly lower at time 2 (mean = 42.09, SD = 26.37) than time 1 (mean = 50.16, SD = 33.52), $t(131) = 3.71, P < 0.01$, which is expected with advancing age (e.g. Kearney *et al.* 1993). A chi-square indicated that there was not a significant difference in physical health from time 1 to time 2 [$\chi^2(2) = 2.93, V = 0.15, P = 0.23$]. These findings suggest that major life change is unlikely to account for differences in staff-averse challenging behaviour from time 1 to time 2.

Materials

The Inventory for Client and Agency Planning (ICAP; Bruininks *et al.* 1986) is a standardized measure of adaptive functioning and maladaptive behaviour that is used to determine service needs. The Broad Independence age equivalent score is an informant rating of the degree

to which clients are able to perform tasks 'completely without help or supervision' in the areas of motor, social and communication, personal living, and community living skills. Informants are also provided with a definition of eight problem behaviour categories (hurtful to self, hurtful to others, destructive to property, disruptive behaviour, unusual or repetitive habits, socially offensive behaviour, withdrawal or inattentive behaviour, and uncooperative behaviour) and asked to rate the frequency and severity of each behaviour. Only the five problem behaviours (hurtful to others, destructive to property, disruptive behaviour, socially offensive behaviour and uncooperative behaviour) found to be staff-averse challenging behaviours in past research (Elgie & Hastings 2002) were analysed in the present study. Hurtful to others is defined as causing physical pain to other people or to animals (e.g. by hitting, biting or striking). Destructive to property is defined as behaviours that deliberately break, deface or destroy things (e.g. by hitting, tearing or scratching). Disruptive behaviour is defined as behaviours that interfere with activities of others (e.g. teasing, complaining, arguing, interrupting or screaming). Socially offensive behaviour is defined as behaviour that is offensive to others (e.g. talking too loud, swearing, lying, standing too close, touching others too much, talking non-sense, spitting at others and touching genitals). Uncooperative behaviour is defined as behaviour that is uncooperative (e.g. refusing to obey, do chores, or share, acting defiant, tardiness and stealing). Previous research (Cherry *et al.* 1997) on age-related change in challenging behaviour among people with intellectual disabilities suggests that distinctions between frequency and severity of challenging behaviour should be maintained. The frequency of problem behaviours was rated on a 6-point scale as occurring 'never' to 'hourly' and severity of these behaviours is rated on a 5-point scale as 'not serious' to 'extremely serious'. Test-retest and interrater reliabilities for each domain range from 0.80 to 0.90 (Bruininks *et al.* 1986). For the present study, we defined the presence of staff-averse challenging behaviours in two ways: to any extent (i.e. is present and rated as at least slightly serious) and *severe* staff-averse challenging behaviours, defined as behaviours that occurred at least daily (i.e. occurring one to 10 times a day or more than once an hour) and were rated as very or extremely serious.

Procedure and analytic strategy

The ICAP was administered during participants' Medicaid Waiver eligibility evaluation at time 1 and time 2.

Care providers who were very familiar with the skills and needs of the participant completed the ICAP. Information obtained from the ICAP was entered and analysed using the 13th edition of the Statistical Package for the Social Sciences (SPSS 13.0). Correlational analyses were conducted to identify subject characteristics related to staff-averse challenging behaviours and variable cross-tabulation was used to examine the comorbidity of staff-averse challenging behaviours among older adults with intellectual disabilities. Paired sample *t*-tests were used to examine the frequency and severity of maladaptive behaviours between time 1 and time 2.

Results

Prevalence rates of hurtful to others, destructive to property, disruptive behaviour, socially offensive behaviour, and uncooperative behaviour, regardless of frequency and severity, for older adults with intellectual disabilities are presented in Table 2. The prevalence of *severe* staff-averse challenging behaviour is also displayed in Table 2. Variable cross-tabulation was performed to examine comorbidity of *severe* staff-averse challenging behaviours at time 1. Seventeen of the 28 (60.7%) participants displaying a *severe* staff-averse behaviour also displayed another *severe* staff-averse behaviour. Six participants displayed *severe* socially offensive behaviour and *severe* disruptive behaviour, four participants demonstrated *severe* disruptive behaviour and *severe* uncooperative behaviour, three participants exhibited *severe* uncooperative behaviour and *severe* socially offensive behaviour, two participants displayed *severe* uncooperative behaviour, *severe* socially offensive behaviour, and *severe* disruptive behaviour, one participant

displayed *severe* hurtful to others and *severe* disruptive behaviour, and one participant displayed all staff-averse challenging behaviours at a *severe* level.

Table 3 displays the correlations between subject characteristics [sex (0, male; 1, female), level of mental retardation (1, mild; 2, moderate; 3, severe; 4, profound), physical health (1, no limitations in daily activities due to health; 2, few or slight limitations in daily activities; 3, many or significant limitations in daily activities), and adaptive behaviour (ICAP Broad Independence age equivalent)] and the frequency and severity of staff-averse challenging behaviours at time 1. The criterion for significance was set at a 0.01 alpha level for all correlations. Point biserial correlations indicated that sex was not significantly correlated with the frequency or severity of staff-averse challenging behaviours. Kendall Tau C correlations indicated that level of mental retardation was significantly correlated with the frequency of hurtful to others and destructive to property such that adults with more impaired intellectual functioning demonstrated more frequent behaviours. Kendall Tau C correlations indicated that limitations due to physical health were not significantly correlated with the frequency or severity of staff-averse challenging behaviours. Adaptive behaviour was significantly negatively correlated with the frequency of hurtful to others and destructive to property.

Table 4 displays the percentage of participants whose staff-averse challenging behaviour increased, decreased, or remained the same between time 1 and time 2. For the majority of participants, there was a decrease in frequency and severity of disruptive behaviour, socially offensive behaviour, and uncooperative behaviour and no change in hurtful to others and destructive to

Table 2 Prevalence or staff-averse challenging behaviours in older adults with intellectual disability using two definitions

	Time 1		Time 2	
	Any, n (%)	Severe, n (%)	Any, n (%)	Severe, n (%)
<i>Challenging behaviour</i>				
No challenging behaviours present	4 (3.0)	104 (78.8)	30 (22.7)	124 (93.9)
All challenging behaviours present	30 (22.7)	1 (0.8)	1 (0.8)	0 (0)
Hurtful to others	66 (50.0)	3 (2.3)	37 (28.0)	4 (3.0)
Destructive to property	47 (35.6)	2 (1.5)	10 (7.6)	0 (0)
Disruptive behaviours	110 (83.3)	16 (12.1)	67 (50.8)	2 (1.5)
Socially offensive behaviour	98 (74.2)	17 (12.9)	43 (32.6)	2 (1.5)
Uncooperative behaviour	103 (78.0)	12 (9.1)	46 (34.8)	1 (0.8)

Any, challenging behaviour is demonstrated and judged to be at least slightly serious; Severe, challenging behaviour is demonstrated at least once a day and rated as very or extremely serious.

	Sex	Level mental retardation	Limitations in physical health	Adaptive behaviour
Hurtful to others				
Frequency	0.05	0.21**	-0.10	-0.32**
Severity	0.01	0.13	-0.06	-0.21
Destructive to property				
Frequency	-0.16	0.20**	-0.04	-0.29**
Severity	-0.14	0.14	-0.04	-0.22
Disruptive behaviour				
Frequency	0.14	-0.07	-0.09	-0.12
Severity	0.18	-0.02	-0.09	-0.14
Socially offensive behaviour				
Frequency	-0.14	-0.17	-0.05	-0.03
Severity	-0.05	-0.17*	-0.15	0.04
Uncooperative behaviour				
Frequency	0.01	0.06	-0.01	-0.16
Severity	-0.03	0.01	-0.12	-0.16

** $P < 0.01$.

	Decreased, n (%)	No change, n (%)	Increased, n (%)
Hurtful to others			
Frequency	43 (32.6)	66 (50.0)	23 (17.4)
Severity	42 (31.8)	74 (56.1)	16 (12.1)
Destructive to property			
Frequency	44 (33.3)	84 (63.6)	4 (3.0)
Severity	37 (28.0)	92 (69.7)	3 (2.3)
Disruptive behaviour			
Frequency	66 (50.0)	47 (35.6)	19 (14.4)
Severity	65 (49.2)	43 (32.6)	24 (18.2)
Socially offensive behaviour			
Frequency	71 (53.8)	47 (35.6)	14 (10.6)
Severity	76 (57.6)	45 (34.1)	11 (8.3)
Uncooperative behaviour			
Frequency	77 (58.3)	42 (31.8)	13 (9.8)
Severity	73 (55.3)	43 (32.6)	16 (12.1)

property from time 1 to time 2. Paired sample t -tests were conducted between time 1 and time 2 frequency and severity of staff-averse challenging behaviour to examine intraindividual change over time. Table 5 displays the means and standard deviations of the frequency and severity of hurtful to others, destructive to property, disruptive behaviour, socially offensive behaviour, and uncooperative behaviour at time 1 and time 2. There was a significantly higher frequency of hurtful to others [$t(131) = 2.82$, $P = 0.01$], destructive to property [$t(131) = 6.62$, $P < 0.01$], disruptive behaviour [$t(131) = 6.49$, $P < 0.01$], socially offensive behaviour

[$t(131) = 8.47$, $P < 0.01$], and uncooperative behaviour [$t(61) = 7.57$, $P < 0.01$] at time 1 than at time 2. The severity of hurtful to others [$t(131) = 2.92$, $P < 0.01$], destructive to property [$t(131) = 6.07$, $P < 0.01$], disruptive behaviour [$t(131) = 5.29$, $P < 0.01$], socially offensive behaviour [$t(131) = 8.31$, $P < 0.01$], and uncooperative behaviour [$t(131) = 7.35$, $P < 0.01$] was also significantly higher at time 1 than time 2. Although not a focus of this study, the remaining ICAP problem behaviour categories (i.e. hurtful to self, withdrawn, and unusual or repetitive behaviours) followed a similar pattern of decreased frequency and severity from time 1 and time 2.

Table 3 Correlations between subject characteristics and frequency and severity of challenging behaviour among older adults with intellectual disability

Table 4 Older adults with intellectual disability whose stair-averse challenging behaviour increased, decreased, or had no change between time 1 and time 2

Table 5 Means and standard deviations for the frequency and severity of staff-averse challenging behaviours at time 1 and time 2

	Frequency		Severity	
	Time 1	Time 2	Time 1	Time 2
Challenging behaviour	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Hurtful to others	1.06 (1.28)	0.75 (1.32)**	0.55 (0.98)	0.27 (0.71)**
Destructive to property	0.86 (1.29)	0.14 (0.51)**	0.58 (0.96)	0.11 (0.45)**
Disruptive behaviours	2.73 (1.51)	1.60 (1.72)**	1.44 (1.07)	0.86 (0.97)**
Socially offensive behaviour	2.49 (1.72)	0.99 (1.53)**	1.00 (1.19)	0.41 (0.79)**
Uncooperative behaviour	2.44 (1.57)	1.11 (1.59)**	1.41 (1.08)	0.58 (0.90)**

*Time 1 greater than time 2 at $P < 0.05$; **Time 1 greater than time 2 at $P < 0.01$.

Chi-square analyses were conducted to determine whether the prevalence of *severe* staff-averse challenging behaviours differed between time 1 and time 2. There was a significant decrease in the percentage of participants with *severe* disruptive behaviour from time 1 (12.1%) to time 2 (1.5%), $\chi^2 = 11.69$, $V = -0.21$, $P < 0.01$. There was a significant decrease in the percentage of participants with *severe* Socially offensive behaviour from time 1 (12.9%) to time 2 (1.5%), $\chi^2 = 12.76$, $V = -0.22$, $P < 0.01$. Similarly, the percentage of participants with *severe* uncooperative behaviour was significantly lower at time 2 (0.8%) than time 1 (5.3%), $\chi^2 = 4.64$, $V = -0.13$, $P = 0.03$. There was not a significant difference in the percentage of participants with *severe* hurtful to other at time 1 (2.3%) and time 2 (3.0%), $\chi^2 = 0.15$, $V = 0.02$, $P = 0.70$. There was also not a significant difference in the percentage of participants with *severe* destructive to property at time 1 (1.5%) and time 2 (0%), $\chi^2 = 2.02$, $V = -0.09$, $P = 0.16$.

Discussion

As people with intellectual disabilities increasingly reach older adulthood, staff will need to be trained to meet the unique needs of an elderly clientele. Little research has addressed the challenges to caring for an ageing population of adults with intellectual disabilities (e.g. McCallion & McCarron 2004; Strydom *et al.* 2005). Findings regarding the prevalence of challenging behaviour in older adults with intellectual disabilities are equivocal; some studies suggest age-related declines in challenging behaviours while other researchers posit that increased rates of challenging behaviours occur due to heightened levels of dementia (Haverman *et al.* 1994; Cooper 1997; Joyce *et al.* 2001). The present study adds to the current body of knowledge by investigating intraindividual change in challenging behaviours rated as 'most challenging' by staff caring for older

persons with intellectual disabilities. Through an increased awareness of the prevalence of staff-averse challenging behaviours by clients, staff may be better prepared for encountering this challenging behaviour and the negative affect it evokes. Greater insight into the occurrence of challenging behaviour also has implications for optimizing care of adults with intellectual disabilities.

Contrary to prediction, the present study indicates that as older adults with intellectual disabilities age into their senior years, they display fewer and less severe staff-averse challenging behaviours. The frequency and severity of hurtful to others, destructive behaviour, disruptive, socially inappropriate, and uncooperative behaviour decreased over the 8–10 year period within individuals. Furthermore, the prevalence of *severe* disruptive, socially offensive, and uncooperative behaviour significantly decreased between time 1 and time 2. These results indicate that a population shift toward less severely disabled adults cannot fully account for reductions in staff-averse challenging behaviour of older adults with intellectual disabilities. An age-related intra-individual decline in the frequency and severity of staff-averse challenging behaviours is evident using both lenient and more restrictive definitions of challenging behaviour. There was not a significant change in *severe* hurtful to others or destructive to property behaviours from time 1 and time 2. Perhaps severe levels of aggressive behaviour remain stable throughout older adulthood among persons with intellectual disabilities. Alternatively, given the small incidence of hurtful to others and destructive to property behaviour and the small sample size of the present study, a decrease in the prevalence of these behaviours may have been difficult to detect. Confidence in the present finding of an age-related decrease in staff-averse challenging behaviour is strengthened by the lack of evidence for major life change during this time interval.

More than three-fourths of older adults with intellectual disabilities displayed disruptive, socially inappropriate, and uncooperative behaviour to some extent at time 1. However, only 9.1–12.9% of participants demonstrated *severe* disruptive, socially inappropriate, and uncooperative behaviour. Aggressive behaviour, both hurtful to others and destructive to property, occurred in 50.0% and 35.6% of older adults with intellectual disabilities to some extent and <3% of participants exhibited *severe* aggressive behaviours. These prevalence rates are similar to those reported in past studies of challenging behaviour in older adults with intellectual disabilities (Eyman & Borthwick 1980; Deb & Hunter 1991; Bruininks *et al.* 1994; Emerson 1995; Emerson *et al.* 1997; Rojahn *et al.* 2001). At time 1, 17 of the 28 (60.7%) participants who demonstrated one *severe* staff-averse challenging behaviour also demonstrated a second *severe* staff-averse challenging behaviour. This confirms past findings of a low prevalence but high comorbidity of severe challenging behaviour among adults with intellectual disabilities (e.g. Emerson *et al.* 1997; Janicki & Dalton 1999). As with younger adults, adaptive behaviour was negatively related to the frequency of hurtful to others and destructive to property among older adults with intellectual disabilities (Borthwick-Duffy 1994; Davidson *et al.* 1995). Older adults with lower cognitive functioning had a lower frequency of hurtful to other and destructive to property. This finding supports past reports that cognitive functioning is negatively correlated with aggressive behaviours (e.g. McClintock *et al.* 2003).

The present study examined staff-averse challenging behaviours among older adults with intellectual disabilities living into their late 50s and beyond requiring disability services. Given that this is the first investigation of intraindividual change in challenging behaviour, the characteristics of the sample are representative of those actually encountered by care providers of this population. Findings may not generalize to specific diagnoses associated with dementia. Dementia is associated with an increased prevalence of challenging behaviours such as disruptive and aggressive behaviour (Cooper 1997; Cooper & Prasher 1998). Older adults with Down syndrome are particularly vulnerable to dementia (e.g. Holland & Oliver 1995; Prasher 1995), and may display increased rates of challenging behaviour. The present study also cannot speak to certain diagnoses associated with health impairments and early mortality (e.g. Cornelia de Lange syndrome and Lupus associated with autism). The 74 participants not reassessed at time 2, largely due to death, had more impaired physical health

than the 132 participants living into their late 50s and beyond. People with intellectual disabilities with health problems are more likely to exhibit behavioural challenges, often associated with their health conditions (Cooper 1999; Davidson *et al.* 2003). As health problems worsen with advanced age, challenging behaviours may also increase for these individuals. Future research needs to take an aetiology-specific look at challenging behaviour among older adults with intellectual disabilities to investigate this possibility. The present study assessed staff-averse challenging behaviour through ratings by only one informant. Conclusions from the study would be strengthened by multiple rater assessments and direct observations of these challenging behaviours in various settings.

Overall, staff can expect an overall decrease in staff-averse challenging behaviours among older adults with intellectual disabilities living into their late 50s and beyond. However, a subset of older adults with intellectual disabilities will exhibit increased staff-averse challenging behaviours and may require specialized care. In the present study, 2.3–18.2% of older adults with intellectual disability displayed increased frequency or severity of a staff-averse challenging behaviour. Moreover, 87.3% of participants continued to exhibit at least one staff-averse challenging behaviour judged to be at least mildly serious at time 2. Staff working with older adults with intellectual disabilities would benefit from training to effectively manage these behaviours. Applied behaviour analysis (ABA) has been shown to reduce the full range of challenging behaviours from minor socially inappropriate behaviour to life-threatening self-injury (Scotti *et al.* 1991; Didden *et al.* 1997). Atypical antipsychotics, particularly risperidone, may also be appropriate for severe challenging behaviour in older adults (e.g. Aman *et al.* 2002). Unfortunately, recent research suggests that community-based care providers do not commonly use ABA or atypical antipsychotics to manage challenging behaviour of clients with intellectual disabilities (Robertson *et al.* 2005). Thus, the first step toward optimizing management of staff-averse challenging behaviour in older adults with intellectual disabilities may be to establish a mechanism for synthesizing research findings so that they can be easily distributed and understood by care staff (Hartley *et al.*, in press).

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Correspondence

Any correspondence should be directed to Sigán L. Hartley, University of Wyoming (e-mail: shartley@uwyo.edu).

References

- Aman M. G., De Smedt G., Lyons G. & Findling R. L. (2002) Double-blind, placebo-controlled study of risperidone for the treatment of disruptive behavior in children with subaverage intelligence. *American Journal of Psychiatry* **159**, 1337–1346.
- Borthwick-Duffy S. A. (1994) Epidemiology and prevalence of psychopathology in people with mental retardation. *Journal of Consulting and Clinical Psychology* **62**, 17–28.
- Bruininks R. H., Hill B. K., Weatherman R. F. & Woodcock R. W. (1986). *Inventory for Client and Agency Planning*. Riverside Publishing Company, Itasca, IL.
- Bruininks R. H., Olson K. M., Larson S. A. & Lakin K. C. (1994). Challenging behaviours among persons with mental retardation in residential settings: Implications for policy, research, and practice. In: *Destructive Behavior in Developmental Disabilities: Diagnosis and Treatment* (eds T. Thompson & D. B. Gray), pp. 24–48. Sage, Thousand Oaks, CA.
- Buckhalt J. A., Marchetti A. & Bearden L. J. (1990) Sources of job stress and job satisfaction reported by direct-care staff at large residential mental retardation facilities. *Education and Training in Mental Retardation* **25**, 344–351.
- Cherry K. E., Matson J. L. & Paclawskyj T. R. (1997) Psychopathology in older adults with severe and profound mental retardation. *American Journal on Mental Retardation* **101**, 445–458.
- Cooper S. -A. (1997) A population-based health survey of maladaptive behaviours associated with dementia in elderly people with learning disabilities. *Journal of Intellectual Disability Research* **41**, 481–487.
- Cooper S. -A. (1999) The relationship between psychiatric and physical health in elderly people with intellectual disability. *Journal of Intellectual Disability Research* **43**, 54–60.
- Cooper S. -A. & Prasher V. P. (1998) Maladaptive behaviours and symptoms of dementia in adults with Down's syndrome compared with adults with intellectual disability of other aetiologies. *Journal of Intellectual Disability Research* **42**, 293–300.
- Davidson P., Cain N. N., Sloane-Reeves J., Giesow F., Guijano L., Van Heyningen J. & Shoham I. (1995) Crisis intervention for community-based persons with developmental disabilities and behavioral and psychiatric disorders. *Mental Retardation* **33**, 21–30.
- Davidson P. W., Houser K. D., Cain N. N., Sloane-Reeves J., Quijano L., Matons L., et al. (1999) Characteristics of older adults with intellectual disabilities referred for crisis intervention. *Journal of Intellectual Disability Research* **43**, 38–46.
- Davidson P. W., Janicki M. P., Ladrigan P., Houser K., Henderson C. M. & Cain N. N. (2003) Associations between behavior disorders and health status among older adults with intellectual disability. *Aging and Mental Health* **7**, 424–430.
- Deb S. & Hunter D. (1991) Psychopathology of people with mental handicap and epilepsy I: maladaptive behaviour. *The British Journal of Psychiatry* **159**, 822–826.
- Didden R., Duker P. C. & Korzilius H. (1997) Meta-analysis study on treatment effectiveness for problem behaviors with individuals with mental retardation. *American Journal on Mental Retardation* **101**, 387–399.
- Elgie S. & Hastings R. P. (2002) Staff definitions of challenging behavior. *Education and Training in Mental Retardation and Developmental Disabilities* **37**, 202–208.
- Emerson E. (1995). *Challenging Behaviour: Analysis and Intervention in People With ID*. Cambridge University Press, Cambridge.
- Emerson E., Alborz A., Reeves D., Mason H., Swarbrick R., Kieran C., et al. (1997). *The HARC Challenging Behaviour Project. Report 2: the prevalence of challenging behaviour*. Hester Adrian Research Centre, University of Manchester, Manchester.
- Eyman R. K. & Borthwick S. A. (1980) Patterns of care for mentally retarded persons. *Mental Retardation* **18**, 63–66.
- Eyman R. K., Call T. L. & White J. L. (1991) Life expectancy of persons with Down syndrome. *American Journal on Mental Retardation* **95**, 603–612.
- Hartley S. L., Voss Horrell S. C. & MacLean W. E. Jr. (in press) Science to practice in intellectual disability: the role of empirically supported treatments. In: *Handbook of Mental Retardation and Developmental Disabilities* (eds J. W. Jacobson & J. A. Mulick). Kluwer Academic/Plenum, Norwell, MA.
- Hastings R. P. (1995) Staff responses to challenging behaviours: an exploratory interview study. *Mental Handicap Research* **8**, 296–320.
- Hastings R. P. (2002) Do challenging behaviors affect staff psychological wellbeing? Issues of causality and mechanism. *American Journal on Mental Retardation* **107**, 45–63.
- Hastings R. P. & Brown T. (2002) Behavioural knowledge, causal beliefs and self-efficacy as predictors of special educator's emotional reaction to challenging behaviour. *Journal of Intellectual Disability Research* **46**, 144–150.
- Hatton C., Brown R., Caine A. & Emerson E. (1995) Stressors, coping strategies and stress-related outcomes among direct care staff in staffed houses for people with learning disabilities. *Mental Handicap Research* **8**, 252–271.
- Haverman M. J., Maaskant, Van Schroyenstien Lantman H. M., Uurlings H. F. & Kessels A. G. (1994) Mental health problems in elderly people with and without Down's syndrome. *Journal of Intellectual Disability Research* **38**, 341–355.
- Holland A. J. & Oliver C. (1995) Down's syndrome and the links with Alzheimer's disease. *Journal of Neurology, Neurosurgery, and Psychiatry* **59**, 111–114.
- Horwitz S. M., Kerker B. D., Owens P. L. & Zigler E. (2005) The health status and needs of individuals with mental retardation.

- Retrieved 25 November 2005 the Special Olympics website: http://www.specialolympics.org/Special+Olympics+Public+Website/English/Initiatives/Research/Health_Research/Health+Status+and+Needs.htm.
- Janicki M. P. & Dalton A. J. (1999) Dementia in developmental disabilities. In: *Psychiatric and Behavioral Disorders in Developmental Disabilities and Mental Retardation* (ed. N. Bouras), pp. 121–153. Cambridge University Press, New York, NY.
- Janicki M. P., Dalton A. J., Henderson C. M. & Davidson P. W. (1999) Mortality and morbidity among older adults with intellectual disability: health service considerations. *Disability and Rehabilitation: An International Multidisciplinary Journal* **21**, 284–294.
- Jenkins R., Rose J. & Lovell C. (1997) Psychological well-being of staff working with people who have challenging behaviour. *Journal of Intellectual Disability Research* **41**, 502–511.
- Joyce T., Ditchfield H. & Harris P. (2001) Challenging behavior in community services. *Journal of Intellectual Disability Research* **45** 130–139.
- Kiernan C. & Kiernan D. (1994) Challenging behaviour in schools for pupils with severe learning difficulties. *Mental Handicap Research* **7**, 177–201.
- Kiernan C. & Moss S. (1990) Behaviour disorders and other characteristics of the population of a mental handicap hospital. *Mental Handicap Research* **3**, 3–20.
- Kearney G. M., Krishnan V. H. & Londhe R. L. (1993) Characteristics of elderly people with a mental handicap living in a mental handicap hospital: a descriptive study. *The British Journal of Developmental Disabilities* **39**, 31–50.
- Kiernan C., Reeves D. & Alborz A. (1995) The use of anti-psychotic drugs with adults with learning disabilities and challenging behaviour. *Journal of Intellectual Disability Research* **39**, 264–274.
- Lowe K. & Felce D. (1995) The definition of challenging behaviour in practice. *British Journal of Learning Disabilities* **23**, 118–123.
- Lowe K., Felce D. & Blackman D. (1995) People with learning disabilities and challenging behaviour: The characteristics of those referred and not referred to specialist teams. *Psychological Medicine* **25**, 595–603.
- Mansell J., Beadle-Brown J., MacDonald S. & Ashman B. (2003) Functional grouping in residential homes for people with intellectual disabilities. *Research in Developmental Disabilities* **24**, 170–183.
- McCallion P. & McCarron M. (2004) Ageing and intellectual disabilities: a review of recent literature. *Current Opinion in Psychiatry* **17**, 349–352.
- McClintock K., Hall S. & Oliver C. (2003) Risk markers associated with challenging behaviours in people with intellectual disabilities: a meta-analytic study. *Journal of Intellectual Disability Research* **47**, 405–416.
- McGillivray J. A. & McCabe M. P. (2004) Pharmacological management of challenging behavior in individuals with intellectual disability. *Research in Developmental Disabilities* **25**, 523–537.
- Mitchell G. & Hastings R. P. (2001) Coping, burnout, and emotions in staff working in community services for people with challenging behaviors. *American Journal on Mental Retardation* **106**, 448–459.
- Prasher V. P. (1995) Prevalence of psychiatric disorders in adults with Down syndrome. *European Journal of Psychiatry* **9**, 77–82.
- Raitasuo J., Raitasuo S., Mattila K. & Molsa P. (1997) Deaths among intellectual disabled: a retrospective study. *Journal of Applied Research in Intellectual Disabilities* **10**, 280–288.
- Robertson J., Emerson E., Pinkey L., Caesar E., Felce D., Meek A. et al. (2005) Treatment and management of challenging behaviours in congregate and noncongregate community-based support accommodations. *Journal of Intellectual Disability Research* **49**, 63–72.
- Rojahn J., Matson J. L., Lott D., Esbensen A. J. & Smalls Y. (2001) The Behavior Problems Inventory: an instrument for the assessment of self-injury, stereotyped behavior, and aggression/destruction in individuals with developmental disabilities. *Journal of Autism and Developmental Disorders* **31**, 577–588.
- Rose J., Jones F. & Fletcher G. (1998) Investigation of the relationship between stress and worker behavior. *Journal of Intellectual Disability Research* **42**, 163–172.
- Scotti J. R., Evans I. M., Meyer L. H. & Walker P. (1991) A meta-analysis of intervention research with problem behavior: treatment validity and standards of practice. *American Journal on Mental Retardation* **96**, 233–256.
- Strydom A., Hossiotis A. & Livingston G. (2005) Mental health and social care needs of older people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities* **18**, 229–235.

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