ORIGINAL ARTICLE

Attitudes towards the older patients with spinal cord injury among registered nurses: a cross-sectional observational study

JC Furlan^{1,2}, BC Craven², R Ritchie³, L Coukos² and MG Fehlings^{1,3,4}

¹Division of Genetics and Development, Toronto Western Research Institute, University Health Network, Toronto, Ontario, Canada;

²Lyndhurst Centre, Toronto Rehabilitation Institute, Department of Physical Medicine and Rehabilitation, University of Toronto, Toronto, Ontario, Canada; ³Spinal Program, Krembil Neuroscience Centre, Toronto Western Hospital, University Health Network, Toronto, Ontario, Canada and ⁴Division of Neurosurgery, Department of Surgery, University of Toronto, Toronto, Ontario, Canada

Study design: Cross-sectional observational study.

Setting: Acute-care unit and tertiary rehabilitation centre in Ontario, Canada.

Objective: To evaluate attitudes towards older patients among nurses caring for individuals with spinal cord injury (SCI), and examine potential determinants of ageist attitudes.

Methods: Using Kogan's Old People Scale, this questionnaire-based survey assesses attitudes towards older patients among registered nurses working in an acute-care unit, registered nurses working in a rehabilitation centre and individuals with chronic SCI.

Results: Although individuals with SCI and nurses working in the rehabilitation setting were statistically comparable regarding their attitudes towards older patients, nurses working in the acute-care unit hold more ageist attitudes than their rehabilitation-nursing counterparts ($P=0.003$). Among nurses, a higher level of education and working in the rehabilitation setting were associated with fewer ageist attitudes ($P<0.03$). There was a trend for an association between older age and more positive attitudes towards older patients ($P=0.069$).

Conclusions: Our questionnaire-based survey, which appears to represent the population of interest, identified significant differences in the attitudes towards older patients between nurses working in the acute-care setting versus rehabilitation setting who showed similar attitudes towards individuals with SCI. The most reliable factor associated with the nurses' attitudes was their level of education. Given that the practice of ageism has the potential to prejudice service provision and ultimately recovery of patients with SCI, further research and knowledge dissemination activities for nurses caring for elderly patients with SCI should be sought.

Spinal Cord (2009) 47, 674–680; doi:10.1038/sc.2009.23; published online 14 April 2009

Keywords: ageing; ageism; elderly; cross-sectional study; nurses; spinal cord injury

Correspondence: Dr JC Furlan, Division of Genetics and Development, Toronto Western Research Institute, 399 Bathurst Street, MCL 12-407, Toronto, Ontario, Canada—M5T 2S8.

E-mail: jcfurlan@gmail.com

This study was presented at the 2008 Best Practice Day (Toronto, Ontario, Canada), February 2008; 2008 Annual Meeting of the American Spinal Injury Association (San Diego, CA, USA), June 2008 (*The Journal of Spinal Cord Medicine*, 31(2): 234, Abstract no. 34); Annual Scientific Meeting of the Canadian Association of Physical Medicine and Rehabilitation (Fredericton, New Brunswick Canada), June 2008; 26th Annual National Neurotrauma Society Symposium (Orlando, FL, USA), July 2008 (*Journal of Neurotrauma*, 25(7): 863, Abstract no. P38); 2008 Joint American Congress of Rehabilitation Medicine (ACRM) and American Society of NeuroRehabilitation (ASNR) Joint Educational Conference (Toronto, Ontario, Canada), October 2008; 3rd National Spinal Cord Injury Conference and 16th Interurban Spinal Cord Injury Conference (Toronto, Ontario, Canada), November 2008 (Poster Winner).

Received 1 December 2008; revised 17 February 2009; accepted 18 February 2009; published online 14 April 2009

Introduction

The ageing of our society has been described worldwide over the last century. Currently, the older people (65 years of age or older) account for ~8% of the world's population, but this number is expected to escalate to 15% in the next four decades.¹ Irrespective of earlier apocalyptic predictions on the consequences of an ageing population to the global economy and society, its impact is evident in the demographics of illnesses with predictable consequences for health-care delivery and costs.²

Traumatic spinal cord injury (SCI) occurs in 27–59 persons per million population in North America and has a bimodal distribution with peaks among young adults and older individuals who are mostly commonly involved in motor vehicle accidents and unintentional falls, respectively.³ Although the survival in the SCI population has been rising over the past three decades, older age at the onset of injury is

considered as a major risk factor for mortality in the acute and chronic stages of traumatic SCI.⁴ This recent study based on a large cohort of individuals with SCI and examination of postmortem spinal cord tissue suggests that, among survivors, age did not significantly correlate with neurological recovery or axonal survival within the white matter spinal cord tracts after SCI.⁴

Although normal ageing includes a system capacity decline, which typically occurs after its peak at the chronological age of 20–25 years, misconceptions of the impact of ageing can lead to ageism. Defined as negative attitudes, stereotypes and behavioural discrimination based solely on a person's chronological age, ageism expressed by patients, their families and hospital staff can adversely influence the potential for recovery after acute illness, including traumatic SCI.⁵ Given this context, this cross-sectional study was conducted to assess the attitudes towards older patients among registered nurses (RNs) working in an acute-spine-trauma setting, RNs working in a rehabilitation centre and individuals with SCI. Furthermore, we examined potential factors that may be associated with ageist attitudes.

Methods

The Research Ethics Boards of the University Health Network and the Toronto Rehabilitation Institute approved the protocol for this study.

Survey

The primary outcome measure includes the assessment of the attitudes towards older individuals using Kogan's Old People (KOP) Scale with permission of its author.⁶ The KOP data were divided into positively framed KOP statements ($_{\text{posKOP}}$) and negatively framed KOP statements ($_{\text{negKOP}}$); each $_{\text{posKOP}}$ and $_{\text{negKOP}}$ scores could vary from 17 to 85.

This questionnaire-based survey was distributed over two groups of RNs (that is, nurses working in an acute-SCI-care setting and nurses working in an SCI rehabilitation setting) and a group of individuals with SCI who are members of the Canadian Paraplegic Association Ontario (CPA-O). Although individuals with SCI who attended to an educational CPA-O session received one survey package at the time of their registration, eligible nurses received a reminder with a second survey package approximately 1 month after the initial invitation to complete the survey. All potential participants received a letter of survey explanation, accompanied by the questionnaire and a self-addressed, stamped envelope. The letter identified the issue of ageism, explained the purpose of the study, invited the reader to participate in the survey and assured respondent's confidentiality.

The nurses received a survey package that included the KOP form and inquiries regarding their demographics (that is, age and gender), time of nursing experience (that is, 'less than 2 years', 'between 2 and 5 years', 'between 6 and 10 years' and 'over 10 years'), frequency of caring for patients with SCI (that is, 'weekly', 'monthly' and 'sporadically') and level of education ('college', 'faculty', 'postgraduate certificate' and 'specialization'). The nurses, who work either in the

acute-care setting or in the rehabilitation centre, are offered continuing nursing education of at least 7.5 h every year. Both institutional programmes are focused on the education of several nursing topics of interest in the field of SCI.

For the group of individuals with SCI, the questionnaire included the KOP form and questions on demographics, time since SCI, cause of injury, level of SCI, severity of SCI and level of education.

Outcome measure

The Kogan's Old People (KOP) Scale is a self-administered questionnaire that includes 17 negatively framed statements ($_{\text{negKOP}}$) and 17 positively framed statements ($_{\text{posKOP}}$) (Table 1).⁶ Although the two types of statements were originally ordered in pairs, we reordered the statements in a random manner in order to prevent response bias.⁶ The level of agreement or disagreement with each statement by the respondents was assessed using a five-point Likert scale that includes the following response options: 'strongly disagree', 'slightly disagree', 'agree', 'slightly agree' or 'strongly agree'. The questionnaire incorporated different stereotypes with reference to: residential pattern, cognitive style, personal appearance, personality and discomfort with older people in a random order. The reliability and validity of the KOP questionnaire were formerly shown and appropriate for use.^{6–8}

Responses to the $_{\text{posKOP}}$ Scale were coded as 5 for strongly agreement, 4 for slightly agreement, 3 for neutral, 2 for slightly disagreement and 1 for strongly disagreement with each statement. The coding order was reversed when calculating the $_{\text{negKOP}}$ scores. Thus, a greater $_{\text{posKOP}}$ (or $_{\text{negKOP}}$) value represents a respondent with fewer ageist attitudes compared with another respondent whose $_{\text{posKOP}}$ (or $_{\text{negKOP}}$) value is lower and has many ageist attitudes.

Data analysis

Data were analyzed using Fisher's exact test, Mann–Whitney *U*-test, multivariate linear regression analysis and analysis of variance with Bonferroni's *post hoc* test. Data analyses were carried out using SAS program version 9.1 (SAS Institute Inc., Cary, NC, USA).

Results

Acute-care respondents

Of the 36 RNs who work in an acute SCI unit, 15 completed the survey. The overall response rate was 41.7%. Although six nurses answered the survey in the first round, nine responded to the second round. There were no significant differences between the first and second round of respondents regarding their age ($P=0.132$), gender ($P=1$), time of nursing experience ($P=0.82$), frequency of caring for individuals with SCI ($P=0.486$), level of education ($P=0.525$) and the $_{\text{negKOP}}$ scores ($P=0.333$). However, the second round respondents had significantly greater $_{\text{posKOP}}$ scores than the first round respondents of the survey ($P=0.046$).

Table 1 Statements included in the Kogan's Old People Scale⁶

Questionnaire statements	Content
1. It would probably be better if most people lived in residential units with younger people	Positively framed
2. Most old people are really no different from anybody else; they're as easy to understand as younger people	Positively framed
3. Most old people are capable of new adjustments when the situation demands it	Positively framed
4. Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody	Positively framed
5. It would probably be better if most old people lived in residential units with people of their own age	Negatively framed
6. There is something different about most people; it's hard to find out what makes them tick	Negatively framed
7. Most old people can generally be counted on to maintain a clean, attractive home	Positively framed
8. People grow wiser with the coming of old age	Positively framed
9. Old people should have power in business and politics	Positively framed
10. Most old people get set in their ways and are unable to change	Negatively framed
11. Most old people are very relaxing to be with	Positively framed
12. Most old people would prefer to quit work as soon as pensions or their children can support them	Negatively framed
13. One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences	Positively framed
14. Most old people tend to keep to themselves and give advice only when asked	Positively framed
15. Most old people tend to let their homes become shabby and unattractive	Negatively framed
16. It is foolish to claim that wisdom comes with age	Negatively framed
17. When you think about it, old people have the same faults as anybody else	Positively framed
18. Old people have too much power in business and politics	Negatively framed
19. You can count on finding a nice residential neighborhood when there are a sizeable number of old people living in it	Positively framed
20. Most old people make one feel ill at ease	Negatively framed
21. It is evident that most old people are very different from one another	Positively framed
22. Most old people bore others by their insistence on talking 'about the good old days'	Negatively framed
23. Most old people seem quite clean and neat in their personal appearance	Positively framed
24. Most old people spend too much time prying into the affairs of others and giving unsought advice	Negatively framed
25. Most old people are cheerful, agreeable and good humoured	Positively framed
26. If old people expect to be liked, their first step is to try to get rid of their irritating faults	Negatively framed
27. In order to maintain a nice residential neighbourhood, it would be best if too many old people did not live in it	Negatively framed
28. There are a few exceptions, but in general most old people are pretty much alike	Negatively framed
29. One seldom hears old people complaining about the behaviour of the younger generation	Positively framed
30. Most old people need no more love and reassurance than anyone else	Positively framed
31. Most old people should be more concerned with their personal appearance; they're too untidy	Negatively framed
32. Most old people are irritable, grouchy and unpleasant	Negatively framed
33. Most old people are constantly complaining about the behaviour of the younger generation	Negatively framed
34. Most old people make excessive demands for love and reassurance than anyone else	Negatively framed

Rehabilitation centre respondents

Of the 70 RNs who work in a rehabilitation centre, 18 completed the survey. The overall response rate was 25.7%. This value did not significantly differ from the response rate among nurses who work in the acute-care setting ($P=0.145$). The response rate of the first round (12 of 70) was greater than the response rate of the second round (6 of 58) in the rehabilitation setting. The data of the first round did not significantly differ from the data of the second round regarding age ($P=0.209$), gender ($P=1$), time of nursing experience ($P=0.59$), frequency of caring for individuals with SCI ($P=0.676$), level of education ($P=0.593$), and $_{\text{neg}}\text{KOP}$ scores ($P=0.52$) and $_{\text{pos}}\text{KOP}$ scores ($P=0.284$).

Respondents with spinal cord injury

Of the 100 members of the Canadian Paraplegic Association Ontario, who attended to an educational session in March 2008, 12 individuals with SCI (9 males and 3 females; ages from 37 to 78 years; mean age of 52.33 years) completed the questionnaire. Most of those individuals had an incomplete SCI (7 of 12) at cervical or thoracic level (10 of 12) due to sports/leisure-related accident, falls or motor vehicle accident (8 of 12). The mean time since SCI was 16 years (range: 9.6 months to 43.4 years).

Comparisons among the respondent groups

Although there were no significant differences among the three participant groups regarding the $_{\text{pos}}\text{KOP}$ scores ($P=0.353$), nurses working in the SCI rehabilitation centre and individuals with SCI hold significantly fewer negative attitudes towards older individuals as assessed by $_{\text{neg}}\text{KOP}$ scores than nurses working in the acute-SCI setting ($P=0.003$; Figure 1).

Using univariate analysis, higher level of education was significantly associated with both greater $_{\text{neg}}\text{KOP}$ scores ($P=0.029$; Figure 2a) and greater $_{\text{pos}}\text{KOP}$ scores ($P=0.004$; Figure 2b) among the nurses caring for patients with SCI. The nurses working in the rehabilitation setting hold significantly greater $_{\text{neg}}\text{KOP}$ scores than the nurses working in the acute-SCI-care setting ($P=0.015$; Table 2). However, respondent's age, time of nursing experience and frequency of caring for patients with SCI were not significantly associated with $_{\text{neg}}\text{KOP}$ scores among nurses (Table 2). Furthermore, the $_{\text{pos}}\text{KOP}$ scores were not significantly correlated with the time of nursing experience, frequency of caring for patients with SCI or the setting where the nurses work, whereas there was a trend for an association between older age and greater $_{\text{pos}}\text{KOP}$ scores (Table 2). Given the relatively small numbers of respondents in some subgroups according to their time of nursing experience and frequency of caring for patients with

Figure 1 Comparisons among the three groups that participated in this survey with regard to the positive Kogan's Old People ($_{pos}KOP$) scores ($P=0.353$) and negative Kogan's Old People ($_{neg}KOP$) scores ($P=0.003$; asterisks indicate significant differences according to Bonferroni's *post hoc* test). It can be noted that, a higher $_{pos}KOP$ (or $_{neg}KOP$) score represents a more positive (or less negative) attitude towards the older people.

SCI, further analyses were carried out using collapsed data. When data on time of nursing experience was classified only into 10 years or less and over 10 years, there were no significant differences between both subgroups with regard to the $_{neg}KOP$ scores ($P=0.157$) and $_{pos}KOP$ scores ($P=0.957$). Similarly, if data on time of nursing experience was collapsed into weekly and more occasionally (that is, 'monthly' or 'only sporadically'), there were no significant differences between these two subgroups with regard to the $_{neg}KOP$ scores ($P=0.919$) and $_{pos}KOP$ scores ($P=0.291$).

On the basis of the above results, a multivariate regression model was constructed to identify potential predictors of $_{neg}KOP$ scores using nurse's age, level of education and setting where the nurse works as potential explanatory variables ($R^2=0.544$; $P=0.003$). Although the nurse's age and level of education were not significantly associated with the $_{neg}KOP$ scores ($P=0.118$ and $P=0.127$, respectively), the nurses working in the rehabilitation setting had significantly higher $_{neg}KOP$ scores than those working in the acute-care setting ($P=0.007$). In a subsequent multivariate regression model for prediction of the $_{neg}KOP$ scores ($R^2=0.608$; $P=0.001$), there was a significant interaction between the level of education and setting ($P=0.01$). Similarly, a multivariate regression analysis for potential prediction of the $_{pos}KOP$ scores was carried out using nurse's age, level of education and setting as potential explanatory variables ($R^2=0.391$; $P=0.042$). In this model, higher $_{pos}KOP$ scores were significantly associated with greater level of education ($P=0.041$), but there were no significant associations between the $_{pos}KOP$ scores and nurse's age ($P=0.13$) or setting ($P=0.945$).

Discussion

Although there are many potential effects of ageist attitudes on the recovery of patients with SCI, older individuals with

SCI are more likely exposed to ageism during the acute stage in comparison with those in the chronic stage following SCI. More specifically, our results indicate that nurses working in an SCI rehabilitation setting hold fewer negative attitudes towards older patients with SCI than nurses working in an acute-SCI-care setting. Also, the nurses working in the rehabilitation centre and the individuals with chronic SCI are statistically comparable regarding their attitudes towards older people. The results of our survey also suggest that a higher level of education is reliably associated with fewer ageist attitudes among nurses caring for individuals with SCI. Also, older nurses seem to have more compassionate attitudes towards older individuals with SCI.

Ageism in different health-care personnel and settings

Our study, for the first time, reports that the attitudes towards older people can substantially differ among nurses caring for patients with SCI and individuals with chronic SCI. Similar to the above results, Gerhart *et al.*⁹ have shown that perception of quality of life and outcomes can importantly differ between patients with SCI and emergency care providers. Their study suggests that survivors of cervical SCI rate their quality of life more favourably, have greater self-esteem and are more active in comparison with the emergency care providers' perceptions.⁹ Also, there were significant differences among emergency nurses (14%), emergency medical technicians (29%) and physicians (37%) regarding their willingness to receive aggressive resuscitation in the event of having an acute cervical SCI.⁹

Ageism has been reported in different areas of medicine including Oncology, Critical Care Medicine and Cardiology, as well as in clinical research.¹⁰ In our study, nurses working in the rehabilitation setting hold similar attitudes towards older people to individuals with SCI, whereas nurses working in the rehabilitation setting showed fewer negative attitudes

Figure 2 Comparisons among the three levels of education for registered nurses who work either in the acute-SCI-care setting or in the rehabilitation setting ($n=33$) with regard to (a) the positive Kogan's Old People ($_{posKOP}$) scores ($P=0.004$) and (b) negative Kogan's Old People ($_{negKOP}$) scores ($P=0.029$). Asterisks indicate significant differences according to Bonferroni's *post hoc* test. It can be noted that, a higher $_{posKOP}$ (or $_{negKOP}$) score represents a more positive (or less negative) attitude towards the older people.

towards older individuals than nurses working in the acute-SCI-care setting. The nurses' attitudes towards older people were also analyzed in two earlier studies that compared different settings. Hope¹¹ reported that nurses working in an acute care of older patient wards had significantly more favourable attitudes towards the older people as assessed by the KOP Scale when compared with nurses working in a medical setting in England. In a study of Irish hospital personnel's attitudes, Gallagher *et al.*⁷ found no significant differences regarding their attitudes towards older individuals as assessed by the KOP Scale between nurses working in a long-term care facility for convalescent mental health and rehabilitation respite care and nurses working in an acute general hospital.

Therefore, there are some discrepancies between the earlier findings and our results. One may speculate that these disparities can be attributed to the differences in the patient characteristics across the studies. Given that the mortality

rate among patients in the acute stage after SCI is higher than among individuals in the chronic stage after SCI,⁴ the perception on the survival of patients with SCI among nurses working in the acute-SCI-care setting is likely to differ from that of nurses working in the rehabilitation setting. In addition, cross-cultural differences regarding attitudes towards older people are another potential explanation for the differences in our findings and those of earlier studies.¹²

Other factors that can influence professionals' attitudes towards older patients

In addition to working in the SCI rehabilitation setting, our results indicate that a higher level of education and older age can positively affect nurses' attitudes towards older individuals with SCI. Level of education was the most reliable predictor of the nurses' attitudes towards older patients. However, the time of nursing experience and frequency of

Table 2 Analyses of the respondent factors that could potentially affect the Kogan's Old People (KOP) scores ($n = 33$)

Factors	<i>posKOP</i>	<i>negKOP</i>
Age		
R^2	0.143	0.00002
P-value	0.069	0.983
Setting		
Acute-SCI-care setting ($n = 15$)	49.43 ± 1.39	45.5 ± 1.46
SCI rehabilitation setting ($n = 18$)	52.36 ± 3.12	56.18 ± 2.69
P-value	0.625	0.015
Frequency of caring for patients with SCI		
Weekly ($n = 26$)	50.1 ± 1.59	50.25 ± 1.94
Monthly ($n = 4$)	55.5 ± 0.5	48 ± 12
Only sporadically ($n = 3$)	51.67 ± 8.67	51.33 ± 5.21
P-value	0.653	0.924
Time of nursing experience		
<6 years ($n = 7$)	49.4 ± 3.04	51.2 ± 4.33
From 6 to 10 years ($n = 11$)	51.25 ± 2.91	52.12 ± 1.85
Over than 10 years ($n = 15$)	50.92 ± 2.47	48.5 ± 3.08
P-value	0.918	0.663

Abbreviations: *negKOP* scores, Kogan's Old People scores for negatively framed statements; *posKOP* scores, Kogan's Old People scores for positively framed statements.

caring for patients with SCI were not significantly correlated with the nurses' attitudes towards older patients.

The literature provides conflicting results regarding the influence of age of health-care providers on their attitudes towards older people. Whereas a number of studies reported no relationship between attitudes and age,^{7,11,13} several other investigations documented that older nursing personnel hold more favourable attitudes towards older individuals.^{14–16} In contrast, McCabe found that older nurses had more negative attitudes towards older people.¹⁷

Contradictory findings have been reported on the influence of gender on the attitudes towards older people among health-care professionals. Numerous investigations have suggested that women hold more positive attitudes towards older individuals than men.^{10,13,16,18} However, two earlier studies reported that male and female health-care professionals or students did not significantly differ regarding their attitudes towards older people.^{19,20} Our analysis did not include gender as a potential factor associated with the attitudes towards older people because all nurses who responded to the survey were women. However, the potential effects of gender could confound our comparisons involving the group of individuals with SCI that mostly includes men.

Finally, numerous studies reported similar findings to ours, with respect to the correlation between the level of education and the nursing staff's attitudes towards old people. Penner *et al.* found that inexperienced nurses were more likely to hold ageist attitudes.¹⁴ Studying the nursing staff's interactions with older patients who were admitted in two psychogeriatric wards in a British general hospital, Salmon found that RNs hold more favourably attitudes towards older patients than nursing assistants.²¹ Wright also indicated that educational preparation of the nursing staff was important in determining the professionals' attitudes

towards older people.¹⁵ Gallagher *et al.* documented that the level of education was significantly associated with the *negKOP* scores, but not the *posKOP* scores, among 189 surveyed health-care personnel including nurses, assistant personnel and porters.⁷ Hope reported that the nurses' attitudes towards older patients as assessed by the KOP Scale were significantly associated with 'post-basic gerontological education.'¹¹ Furthermore, there was a trend for a correlation between the KOP Scale and the nurses' knowledge about older people as assessed by a modified Palmore's Facts on Ageing Quiz.¹¹ Soderhamn *et al.* documented that the first-year nursing students hold more ageist attitudes as assessed by the *negKOP* scale, but not *posKOP* scale, than the third-year nursing students in Sweden.¹⁶ Also, the *negKOP* scale among RNs was lower among first-year nursing students, but this difference did not reach significance.¹⁶ In contrast, Lookinland and Anson found that the level of education of RNs caring for older patients in acute-care facilities in California (USA) was not significantly correlated with either the *negKOP* or the *posKOP*.¹³

Survey limitations

Although there were no significant differences between nurses working in the acute-care setting and nurses working in the rehabilitation centre with regard to the response rates (41.7% versus 25.7% respectively), the relatively low response rates raise the possibility of non-response bias that could impact the validity and generalizability of our results.²² The non-response analysis includes two critical issues that are addressed by comparing early respondents with late respondents and by comparing late respondents with non-respondents.²² The latter method is usually focused on the demographic profile of the respondents, but the demographic information available on the non-respondents in our survey population precluded comparisons.²² The other method of non-response analysis involves the assessment of response duration of the respondents and their demographic make up.²² Using this 'wave analysis', we observed no significant differences between the first-wave respondents and second-wave respondents with regard to age, gender, time of nursing experience, frequency of caring for individuals with SCI and level of education. Those results, therefore, support the validity of our findings in spite of the relatively low survey response rates.

Conclusion

Our questionnaire-based survey, which appears to be representative of the population of interest, identified significant differences in the attitudes towards older people between RNs who work in the acute-SCI-care and rehabilitation settings who hold similar attitudes to individuals with SCI. Although the professionals' age, the frequency of caring for patients with SCI and the time of nursing experience may influence the nurses' attitudes towards older people, the most reliable factor associated with the attitudes seems to be the nurses' level of education. Given that ageism can reduce the potential for recovery of patients with SCI, further

research and knowledge-modification strategies should be sought among RNs and other health-care professionals caring for older individuals with traumatic SCI. Institutions which support continuing/continuous education and work to retain nursing staff have the potential to impact SCI patient outcomes and ameliorate ageism.

Acknowledgements

This work was supported by a Lawson Neurology Fellowship from The Toronto General and Western Hospital Foundation (JCF), the Krembil Chair in Neural Repair and Regeneration (MGF) and the Toronto Rehabilitation Institute that receives funding under the provincial rehabilitation research program from the Ministry of Health and Long Term Care in Ontario (BCC). We gratefully acknowledge the contribution of Mr William Adair and the Canadian Paraplegic Association Ontario (CPA-O).

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