

ORIGINAL REPORT

ACTUAL VS BEST PRACTICE FOR FAMILIES POST-STROKE ACCORDING TO THREE REHABILITATION DISCIPLINES

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Objective: To investigate occupational therapists', physiotherapists' and speech language pathologists' family-related rehabilitation practice post-stroke and its association with clinician and environmental variables.

Methods: A Canadian cross-sectional telephone survey was conducted on 1755 clinicians. Three case studies describing typical patients after stroke receiving acute care, in-patient rehabilitation, or community rehabilitation, and including specific descriptors regarding family stress and concern, were used to elicit information on patient management.

Results: One-third of the sample identified a family-related problem and offered a related intervention, but only 12/1755 clinicians indicated that they would typically use a standardized assessment of family functioning. Working in the community out-patient setting was associated (OR 9.16), whereas working in a rehabilitation in-patient setting was negatively associated (OR 0.58) with being a problem identifier, the reference group being acute care. Being a PT (OR 0.53) or an SLP (OR 0.49) vs an OT was negatively associated with being a problem identifier, whereas being older (OR 1.02) or working in Ontario (OR 1.58) was associated with being a problem identifier. To work in a community out-patient setting (OR 2.43), being older clinicians (OR 1.02) or not perceiving their work environment being supportive of an ongoing professional learning (OR 1.72) was associated with being an intervention user, whereas being a PT (OR 0.50) was negatively associated with being a user.

Conclusion: For these 3 disciplines, the prevalence of a family-related focus is low post-stroke. Given the increasing evidence regarding the effectiveness of family-related interventions on stroke outcomes, it is imperative that best practice is implemented.

Key words: stroke, rehabilitation, best practices, actual practices, family, education, support

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INTRODUCTION

The support of family members acts as a key facilitator of stroke recovery (1). Indeed, the regular presence of another per-

son in the home has been identified as a major determinant of return home after stroke and prevention of institutionalization (2). However, undertaking the supportive role is a difficult one, with numerous studies reporting negative effects on the care partner including a sense of burden (3, 4), feeling captive (5), psychological strain (6) including a fear of stroke recurrence (7), and, increased responsibilities and decreased leisure time (8). This dual role of families, as providers (9) and needers (10) of care, is increasingly addressed in the literature: a search on the terms “stroke and family” produced 171 articles in Medline from 1980 to 1989 and 918 since the year 2000. According to Rodgers et al. (11), 6 main areas of need are associated with a caring role: need for information; high prevalence of stress, strain and depression; taking on new responsibilities; limited time for leisure and social activity contributing to isolation; difficulty balancing one's own needs compared with the person who has had a stroke; and financial repercussions.

While, overall, the results of randomized clinical trials (RCT) assessing the effectiveness of rehabilitation interventions directed to families post-stroke (including information provision, training and support on an individual level or group basis) have been somewhat disappointing, evidence suggest that counseling programs obtain the most positive outcomes (12). In contrast, there is strong evidence from a systematic review published in 2001 suggesting that providing written information alone does not impact on mood, perceived health status and quality of life of either the patient or the care provider (13) although both parties value written information (14). A recently published high-quality RCT found that training caregivers in practical aspects of physical care, reduced carer stress and improved quality of life (15).

Despite this limited evidence, in 2002, the UK National Clinical Guidelines for Stroke recommended that from early post-stroke onset, and throughout the continuum of stroke care, it is important to consider the needs of the family with regard to information, education and support (16). Guidelines from the European Stroke Initiative (17), the US Agency for Health Care Policy and Research (18) and the American Heart and Stroke Association (19) provide similar recommendations. *Best practices* are considered the adoption of the best available evidence-based assessments and interventions in the context of the individual and their needs (20). In line with this definition, we defined *best practice for families* post-stroke, as a clinician identifying a potential family-related problem when one

exists, utilizing one or more of the standardized assessments related to family functioning or burden, and providing a family-related intervention.

Currently, little is known about what is actually done for families across the continuum of stroke rehabilitation. Also, no literature has been published regarding clinicians' desired family-related practices and how these are affected by various barriers, such as time and resources. Thus, the objectives of this study were to identify: (i) the extent to which rehabilitation clinicians recognize family-related issues as a problem when they exist, (ii) clinicians' actual use of family-related assessments and interventions, (iii) desired use of family-related assessments and interventions in an ideal world and, (iv) the clinician and environmental variables associated with being a family-related "problem-identifier" or "intervention-user".

MATERIAL AND METHODS

A cross-sectional Canada-wide survey was undertaken to investigate actual and desired practices of occupational therapists (OTs), physiotherapists (PTs) and speech language pathologists (SLPs) working with patients across the continuum of stroke care, including acute care, in-patient rehabilitation and community out-patient services. Clinicians were identified through lists provided by the respective provincial professional Orders and the Canadian Associations. Inclusion criteria were: having worked with an adult stroke clientele in the same setting for at least 3 months; treating at least 2 patients with stroke per month; being present in the work setting for 6 months in the past year. Prompted by a case study (vignette) depicting a typical patient with stroke, clinicians were asked to identify problems, assessments and interventions they would use for this patient in their actual practices, as well as any other assessments or interventions they would wish to use in an ideal world. Research ethics approval was provided by the Institutional Review Board, Faculty of Medicine, McGill University, in Montreal, Quebec, Canada and the Ethics Review Board of the Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain.

This paper focuses specifically on the family-related findings that were operationally defined with the International Classification of Functioning, Disability and Health (ICF) (21), specifically referring to Environmental Factors, Chapter 3 – Support and Relationships and Chapter 4 – Attitudes.

Measurement instruments

Creation of the stroke vignettes. Using rigorous focus group methodology (22), 3 vignettes each corresponding to a different phase of stroke rehabilitation – acute care, rehabilitation in-patient, and community out-patient – were developed by 3 separate groups of stroke clinicians and researchers. Focus group participants were instructed to describe a typical client with stroke. Vignettes were further validated by experts to insure that a typical case had been created, and that the English and French language versions were comparable. Cues relating to familial concerns included in the vignette were:

For acute care:

"Prior to the stroke, P. lived with a spouse... Since retirement 2 years ago, P. had enjoyed gardening, golf and driving the family car on daily outings... Before leaving the room you ask the couple about their major concerns. P. points to the right arm and becomes tearful: the spouse states that P. is very anxious about the problems caused by the stroke and is often tearful. ... The spouse is also worried about P.'s discharge from the hospital, when it will take place, and how they will manage at home."

For rehabilitation in-patient:

"Prior to the stroke, J was living with a spouse in a 2-storey home that they own. The couple shared domestic activities and J enjoyed swimming, golfing, socializing and driving to various activities... J experienced a fall from the wheelchair on the day of admission while trying to get up alone... J expresses a desire to get back to walking and is anxious to return home, becoming tearful during this part of the discussion."

For community out-patient:

"C lives with a spouse... The couple are very supportive of each other and have had an active lifestyle. Among their 4 children, only one daughter lives within close proximity and can provide some assistance. C.'s spouse expresses concern about taking on all the added responsibilities and does not know where to go for help. The daughter seems quite burdened and has had to delay her vacation because she felt her parents required her assistance. The daughter accompanies her parents on all of their outings and visits them on a daily basis. Last week, C. fell while in the bathroom. Although there were no injuries, the family is now quite scared to leave C. alone."

Creation of the data collection questionnaire. The telephone interview questionnaire was designed using Dillman's guidelines (23), reviewed for face validity and pre-tested on a convenience sample of 5 clinicians. The final English version was translated into French, using a rigorous forward and backward translation technique. The questionnaire components included: (i) clinician characteristics; (ii) open- and closed-ended questions regarding problems identified and actual and desired use of assessments (including timing of their use: initial, during the course of treatment, discharge or follow up) and of interventions; (iii) environmental characteristics of the work setting (see Table I).

Recruitment and data collection procedures. To accrue a representative sample of clinicians working in the 10 Canadian provinces, disproportional random sampling was performed by discipline. Specific quotas in the 10 provinces were targeted according to region (urban/rural) and working environment (acute care/rehabilitation in-patient/community out-patient). Trained telephone recruiters traced potential participants. Eligibility was ascertained and those who agreed to participate were scheduled for a 25-minute telephone interview. The vignette matching the working environment was faxed within 48 hours of the interview. To avoid potential contamination, respondents were asked to refrain from discussing the research with colleagues and attempts were made to perform all interviews within a site in relatively close succession.

Sample size. For an anticipated prevalence of 40% use of "best practices", and a confidence interval of 95%, a margin of error set at 5%, 396 clinicians per discipline were required. To enable comparison of prevalence across setting and environment, targeted sample size was set at 600 participants for OT and PT and 400 for SLP as SLPs working in stroke are fewer in number.

Data management and analysis

Two research assistants coded the clinicians' open-ended responses from a list of problem, assessment and intervention terms generated by the first author (see below for further clarification). Two authors, AR and NKB, verified the accuracy of the coding. Data were entered into a computerized database system using a unique identifier for each clinician.

Descriptive statistics were used to indicate the prevalence of problem identification, assessment, and intervention use, according to discipline and vignette. To identify family-specific problems, all 221 problems mentioned by clinicians were reviewed and mapped onto the ICF (21). Based on the ICF Chapters 3 and 4, 7 terms were family-related: caregiver burden, social support, family education, respite, dependence on spouse, family dynamics and family guilt. A clinician who stated one

Table I. Characteristics of respondents and their work environment according to the clinician being a family problem identifier/family intervention user (n = 1755). Values in Table are n (%) except for age (mean (SD)).

	Family problem identifier		Family intervention user	
	Yes	No	Yes	No
<i>Respondent characteristics</i>				
Age (years)	39.8 (9.5)*	38.0 (9.3)	39.7 (9.4)*	38.0 (9.3)
<i>Discipline</i>				
Occupational therapist	256 (38.6)*	407 (61.4)	253 (38.2)*	410 (61.8)
Physical therapist	201 (30.6)	455 (69.4)	163 (24.8)	493 (75.2)
Speech language pathologist	114 (26.1)	322 (73.9)	169 (38.8)	267 (61.2)
<i>Degree of professional training‡</i>				
Diploma entry-level	51 (40.8)*	74 (59.2)	50 (40.0)**	75 (60.0)
Bachelors	399 (34.4)	760 (65.6)	360 (31.1)	799 (68.9)
Masters	118 (25.7)	341 (74.3)	173 (37.7)	286 (62.3)
Doctorate	2 (40.0)	3 (60.0)	1 (20.0)	4 (80.0)
<i>Stroke clients in a typical day‡</i>				
< 2	266 (41.6)*	373 (58.4)	241 (37.7)*	398 (62.3)
2–5	243 (29.2)	589 (70.8)	263 (31.6)	569 (68.4)
6–10	51 (20.0)	204 (80.0)	70 (27.5)	185 (72.5)
> 10	10 (38.5)	16 (61.5)	8 (30.8)	18 (69.2)
<i>Work environment</i>				
<i>Work setting</i>				
Acute care	101 (18.4)*	447 (81.6)	143 (26.1)*	405 (73.9)
Rehabilitation in-patient	77 (12.3)	550 (87.7)	165 (26.3)	462 (73.7)
Community out-patient	393 (67.8)	187 (32.2)	277 (47.8)	303 (52.2)
<i>Province‡</i>				
Ontario	155 (37.9)*	254 (62.1)	145 (35.5)	264 (64.5)
Other provinces	416 (31.0)	928 (69.0)	439 (32.7)	905 (67.3)
<i>New stroke clients per month</i>				
0–10	403 (36.8)*	693 (63.2)	369 (33.7)**	727 (66.3)
11–20	102 (23.4)	333 (76.6)	128 (29.4)	307 (70.6)
21–30	28 (25.0)	84 (75.0)	42 (37.5)	70 (62.5)
31–40	12 (37.5)	20 (62.5)	16 (50.0)	16 (50.0)
> 40	21 (40.4)	31 (59.6)	23 (44.2)	29 (55.8)
<i>Average length of stay (days)‡</i>				
< 1	25 (43.1)*	33 (56.9)	20 (34.5)	38 (65.5)
1–5	12 (48.0)	13 (52.0)	6 (24.0)	19 (76.0)
6–9	22 (27.5)	58 (72.5)	26 (32.5)	54 (67.5)
10–15	34 (19.5)	140 (80.5)	57 (32.8)	117 (67.2)
16–25	50 (21.9)	178 (78.1)	71 (31.1)	157 (68.9)
> 25	426 (36.2)	750 (63.8)	403 (34.3)	773 (65.7)
<i>Source of funding of setting‡</i>				
Private for profit	44 (55.0)*	36 (45.0)	34 (42.5)	46 (57.5)
Private non-profit	11 (45.8)	13 (54.2)	6 (25.0)	18 (75.0)
Public	507 (31.0)	1126 (69.0)	537 (32.9)	1096 (67.1)
Veterans Administration	4 (44.4)	5 (55.6)	4 (44.4)	5 (55.6)
Other	5 (62.5)	3 (37.5)	4 (50.0)	4 (50.0)
<i>Teaching institution‡</i>				
Yes	337 (29.7)*	799 (70.3)	367 (32.3)	769 (67.7)
No	234 (37.9)	383 (62.1)	217 (35.2)	400 (64.8)
<i>Stroke research conducted‡</i>				
Yes	147 (28.5)*	368 (71.5)	165 (32.0)	350 (68.0)
No	397 (35.0)	736 (65.0)	391 (34.5)	742 (65.5)
Don't know	27 (25.5)	79 (74.5)	29 (27.4)	77 (72.6)
<i>Same discipline therapists ‡</i>				
1 («working alone»)	128 (45.0)*	188 (59.5)	111 (35.1)	205 (64.9)
2–4	213 (31.1)	471 (68.9)	243 (35.5)	441 (64.5)
5–10	140 (29.4)	336 (70.6)	144 (30.3)	332 (69.7)
> 10	89 (32.7)	18. (67.3)	87 (32.0)	185 (68.0)
<i>Multidisciplinary team‡</i>				
Yes	524 (31.5)*	1139 (68.5)	546 (32.8)**	1117 (67.2)
No	47 (53.4)	41 (46.6)	39 (44.3)	49 (55.7)

Table I contd.

	Family problem identifier		Family intervention user	
	Yes	No	Yes	No
Stroke team				
Yes	133 (22.9)*	447 (77.1)	170 (29.3)*	410 (70.7)
No	402 (37.3)	676 (62.7)	384 (35.6)	694 (64.4)
Setting supportive of on-going professional learning‡				
Yes	496 (31.9)	1059 (68.1)	496 (31.9)*	1059 (68.1)
No	73 (37.1)	124 (62.9)	87 (44.2)	110 (55.8)
Funds provided to attend continuing education activities‡				
Yes	454 (31.3) **	998 (68.7)	463 (31.9)*	989 (68.1)
No	113 (37.8)	186 (62.2)	120 (40.1)	179 (59.9)
Nurses work in setting				
Yes	407 (28.0)*	1046 (72.0)	470 (32.3)**	983 (67.7)
No	164 (54.3)	138 (45.7)	115 (38.1)	187 (61.9)
Social workers work in setting				
Yes	392 (28.6)*	978 (71.4)	438 (32.0)**	932 (68.0)
No	179 (46.5)	206 (53.5)	147 (38.2)	238 (61.8)

* p -value < 0.01 and ** p -value < 0.10 based on χ^2 test or independent sample t -test.

‡ n vary slightly because of missing values.

SD: standard deviation.

or more of these words was identified to be a “family-related problem identifier”. All 556 assessments mentioned by clinicians were reviewed to identify those that had a family-related domain: 9 were identified; 3 are standardized (24–26) based on published psychometric properties. A non-standardized assessment was defined as a family-related tool with no or few published procedures for administration, scoring and interpretation, and having no or minimal evidence of reliability and validity. The non-standardized assessments included: caregiver burden (self-report), caregiver need, social assessment, family support, family education and family dynamics. Finally, all 379 different interventions were reviewed and 7 were deemed family-related: family involvement, family education, home care, support group, community resources, respite program and support. A clinician indicating one or more was classified as a “family-related intervention user”.

To study the contribution of potential explanatory variables on outcomes of interest with a sufficiently high prevalence to allow further exploration – “family-related problem identifier” and “family-related intervention-user”, univariate associations between these 2 outcomes and the 28 clinician and environmental variables were explored using χ^2 and t -tests. The threshold for significance was set at 0.01, as numerous comparisons were performed.

Finally, 2 separate logistic regression analyses were performed, including all 3 disciplines, to investigate the contribution of the possible explanatory variables that were associated at $p < 0.10$ with the 2 outcomes: being a *problem identifier* (yes/no) or being an *intervention user* (yes/no). Using stepwise backward elimination, the most parsimonious models were identified. Statistically significant ($p < 0.01$) odds ratios (OR) with their 95% confidence interval (CI) are reported.

RESULTS

Actual and desired practices for families after a stroke

Sample description. A total of 5374 rehabilitation specialists were randomly sampled. Of these, 258 could not be traced, 3183 were ineligible primarily because they did not treat individuals with stroke, or were not required because the sample size for their stratum had been reached ($n = 544$; including 221 PTs, 241 OTs, 82 SLPs). Of the 1933 eligible clinicians, 178 (9.2%) refused to participate including 48 OTs, 97 PTs,

and 33 SLPs. The total sample of 1755 including 663 OTs, 656 PTs, and 436 SLPs aged between 22 and 72 years (Table I), was largely female (91.3%) with 76.6% working in a urban or suburban region, 73.0% working full time, 77.0% having 4 or more years of clinical experience with stroke and more than 2-thirds reporting that they spend less than 2 hours treating stroke daily (69.2%). A minority of respondents taught at the university level (12.0%). Nearly one-third had a specialty certification (30.3%) and the majority received students for fieldwork placements (89.8%). A high proportion of clinicians perceived that access to new stroke information was easily available at work (72.5%) and 82.7% mentioned that they had funds provided to attend continuing education activities. However, only 38.8% perceived that they had sufficient time allocated at work for learning new information.

Problem identification. Family-related problem identification across disciplines was low in acute care (18.4%) and in rehabilitation in-patient care (12.3%), but higher in the community at 67.9% (Table II).

Assessments (actual and desired). The use of family-related standardized assessments was rare, with only 12 of 1755 clinicians indicating use at any time (Table II). Family-related assessment use (including non-standardized assessments) was mentioned 237 times: 110 at admission, 63 during the course of treatment, 56 at discharge and 8 at follow-up. When asked about desired assessment practices in an ideal world, 13 clinicians mentioned a family-related assessment: only 3 indicating a standardized tool (25, 26).

Interventions (actual and desired). Across disciplines and work settings, one third of clinicians would typically offer a family-related intervention in their actual practice. The desire to offer more family-related interventions was low across disciplines (Table II).

Table II. Prevalence of family-related actual and desired practices by discipline and work setting. Values in the table are n (%) (95% confidence interval)

	Acute			Rehabilitation in-patient			Community out-patient		
	OT n = 183	PT n = 202	SLP n = 163	OT n = 253	PT n = 223	SLP n = 151	OT n = 227	PT n = 231	SLP n = 122
Problems identified	42 (23.0) (16.9–29.1)	29 (14.4) (9.6–19.2)	30 (18.4) (12.5–24.3)	37 (14.6) (10.2–19.0)	24 (10.8) (6.7–14.9)	16 (10.6) (5.6–15.5)	177 (78.0) (72.6–83.4)	149 (64.2) (58.0–70.4)	68 (55.7) (46.9–64.5)
Standardized assessments	0	0	0	0	0	0	11 (4.8) (2.0–7.6)	0	1 (0.8) (0–2.4)
Non-standardized assessments	19 (10.4) (6.0–14.8)	5 (2.5) (0.3–4.7)	3 (1.8) (0–3.8)	12 (4.7) (2.1–7.3)	4 (1.8) (0.1–3.5)	2 (1.3) (0–3.1)	29 (12.8) (8.5–17.1)	20 (8.7) (5.1–12.3)	13 (10.7) (5.2–16.2)
Intervention use	52 (28.4) (21.9–34.9)	36 (17.8) (12.5–23.1)	55 (33.7) (26.4–41.0)	67 (26.5) (21.1–31.9)	49 (22.0) (16.6–27.4)	49 (32.5) (25.0–40.0)	134 (59.0) (52.6–65.4)	78 (33.8) (27.7–39.9)	65 (53.3) (44.4–62.2)
Desired intervention*	4 (2.2) (0–4.3)	8 (4.0) (1.3–6.7)	19 (11.7) (9.2–14.2)	11 (4.3) (1.8–6.8)	6 (2.7) (0.6–4.8)	9 (6.0) (2.2–9.8)	20 (8.8) (5.1–12.5)	21 (9.1) (5.4–12.8)	21 (17.2) (10.5–23.9)

*Respondents were asked if there were any additional interventions they would wish to use in an ideal world.

OT: occupational therapist; PT: physiotherapist; SLP: speech language pathologist.

Best practices overall. Using a definition of *family-related best practice* to include 3 components: identification of a family-related problem, standardized assessment, and, intervention, then best practice was rare at 7/1755 clinicians. This low figure is largely related to the low prevalence of standardized assessment use. However, of the 571 respondents who identified a problem, only 51.1% would offer an intervention. Conversely, 24.7% of the 1184 clinicians who did not identify a problem indicated an intervention.

Association between problem-identifiers, intervention-users and explanatory variables

Univariately, of the 28 potential explanatory variables, 16 were significantly associated ($p < 0.01$) with being a *problem identifier*. For the outcome *intervention user*, 7 obtained a $p < 0.01$ (Table I). The logistic regression analyses were performed on the 1590 respondents with complete information on all explanatory variables. For the outcome *problem identifier*, 22 variables with $p < 0.10$ univariately were included. The most parsimonious model that explained 79.4% of the outcome was: work setting, discipline, age of clinician and province of employment. Working in the community out-patient setting was associated (OR 9.16; 95% CI 6.72–12.49; $p < 0.001$) with being a *problem identifier*, whereas working in a rehabilitation in-patient setting was negatively associated (OR 0.58; 95% CI 0.41–0.82; $p < 0.002$) with being a *problem identifier*, the reference group being acute care. Being a PT (OR 0.53; 95% CI 0.39–0.71; $p < 0.001$) or an SLP (OR 0.49; 95% CI 0.35–0.69; $p < 0.001$) vs an OT was negatively associated with being a *problem identifier*, whereas being older (OR 1.02; 95% CI 1.01–1.03; $p < 0.009$) or working in Ontario (OR 1.58; 95% CI 1.17–2.13; $p < 0.003$) was associated with being a *problem identifier*. There was no interaction between age and discipline or age and work setting.

The results of the logistic regression with the outcome *intervention user*, using the 20 variables with $p < 0.10$ showed that, together, work setting, age, perception of support for on-going learning and discipline, explained 67.6% ($p < 0.001$)

of the variability. To work in a community out-patient setting (OR 2.43; 95% CI 1.85–3.19; $p < 0.001$), being older clinicians (OR 1.02; 95% CI 1.01–1.03; $p = 0.001$) or not perceiving their work environment being supportive of an on-going professional learning (OR 1.72; 95% CI 1.24–2.37; $p = 0.001$) was associated with being an *intervention user*, whereas being a PT (OR 0.50; 95% CI 0.39–0.65; $p < 0.001$) was negatively associated with being a *user*.

DISCUSSION

Considering best practice to be family-related problem identification, along with utilization of standardized assessments and interventions, the prevalence of best practice in this sample was extremely low. There are a number of potential reasons for this finding. Strong evidence on the effectiveness of family interventions has appeared only recently (27), with 2 of 3 available systematic reviews published in 2005 (12, 28), and the study from Kalra et al. (15) that reported substantial benefits to caregivers, was not included in these reviews. Additionally, in a busy healthcare system, clinicians may perceive family-related interventions to be of lesser importance than other interventions. Indeed, when asked about their desired assessment and intervention practices in an ideal world, few clinicians indicated a desire to introduce or increase family-related interventions. Also, within the current structure of rehabilitation, clinicians typically work a 9-to-5-weekday schedule, reducing the potential for interaction with families who are likely to be more readily available evenings and weekends. Finally, knowledge translation in this area of stroke rehabilitation, as in other areas, requires time: only two-fifths of this sample considered that sufficient work time was allocated to acquire new knowledge.

Family-related standardized assessments were rarely used yet numerous exist (29) including the Caregiver Strain Index (30), and the Family Assessment Device (31, 32) the latter being the tool of choice recommended by the US Post-Stroke Rehabilitation Guideline Panel (33). Encouraging clinicians to adopt these assessments will be especially challenging

given our findings that the desire for additional family-related assessment use was extremely low. The low prevalence of intervention use, particularly in acute care, is distressing considering that nearly half of patients with stroke are discharged directly home (34).

Familial issues are most likely to be noticed when meeting the client in their own home, in the presence of family members, which is supported by our findings regarding the positive association with a community work setting. Interestingly, the 3 focus groups were all given the same instructions when developing the vignettes, yet the community group included more family-related phrases. This non-equivalence in the cues used in each of the 3 vignettes may have contributed in part to the differences observed across the 3 settings. The positive association with working in Ontario compared with other provinces and identifying family-related problems may be a positive aspect associated with the Ontario Stroke Strategy (www.lhsc.on.ca/rss).

Older clinicians were more likely to offer family-related interventions. We would have hypothesized the opposite to be true, as recently graduated clinicians should be more knowledgeable of emerging evidence on the benefits of family interventions. Perhaps experience-based knowledge (tacit knowledge) (35, 36) could in part explain this result. It might be easier for an experienced clinician to adopt a global view of all stroke consequences including those affecting the family. Also, older clinicians may be experiencing personal situations where illness, for example in aging parents, places burden on them, which in turn makes them more sensitive to the impact of illness on the family. Finally, the positive association with being an OT or a SLP (rather than a PT) and being an intervention-user has intrinsic validity: a large part of the OT curriculum is focused on client-centered care (37), which includes a central focus on the family. Similarly, SLPs must involve families in their interventions as communication between family members is a major goal of post-stroke intervention.

This study focused on 3 rehabilitation disciplines. Consequently, the entire interdisciplinary attention to family-related issues was not captured. Nurses and social workers are recognized as having an important family focus in their practice. Also, clinicians typically work in multidisciplinary teams, and family-related concerns may come up more easily with the team discussion. Another possible concern is the use of case studies rather than "real" cases to elicit information. However, previous work has found case studies to be a valid form of treatment ascertainment (38) and there are many advantages related to this method including the ability to study variations in practice for a specific client (39). Lastly, this study was conducted in Canadian settings and rehabilitation for families after stroke might differ elsewhere in the world.

In conclusion, there is emerging evidence that best practices including family-related interventions reduce family stress, illness and institutionalization. Concomitantly, our results indicate strong evidence of lack of use. Immediate actions are needed to recognize that family-related interventions, while less glamorous than other innovations for stroke, are

as important in changing stroke outcomes and reducing the costs of stroke care. It is imperative that healthcare providers systematically include assessments and interventions in their stroke best practices that consider the family unit, not just the individual who has experienced the stroke.

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