Article

CLINICAL REHABILITATION

Clinical Rehabilitation
2014, Vol 28(2) 172–182

DOI: 10.1177/0269215513494027
cre.sagepub.com
SAGE

Can home health aids using the clinical algorithm Algo choose the right bath seat for clients having a straightforward problem?

Manon Guay[1], Marie-France Dubois[2] and Johanne Desrosiers[1]

Abstract

Objective: To determine if Algo, a clinical algorithm to select bathing equipment for 'straightforward' cases, guides home health aides in selecting the appropriate bath seat.
Design: Criterion validity study.
Setting: Community home care.
Subjects: Eight home health aides used Algo with community-dwelling older adults having a straightforward problem.
Main measures: Their bath-seat recommendations were compared with those proposed by an occupational therapist (OT), which were considered as the gold standard. In order to determine a clinically acceptable threshold of agreement between the recommendations, a subgroup of community-dwelling elderly people was assessed a third time by another OT.
Results: Half of the clients (74/143) for whom bathroom assessments were requested qualified as potentially straightforward cases after triage and were visited at home by a home health aide using Algo. In 84% of cases (95% confidence interval (CI) = [75, 93]), the non-OTs using Algo identified a seat that would enable these older adults to bathe according to their preferences, abilities and environment, as confirmed by the gold standard OT. Moreover, this appropriateness rate did not statistically differ from that obtained when comparing another OT to the gold standard.
Conclusion: Algo guides non-OTs toward a bath seat that meets the needs of community-dwelling older adults in the majority of cases.

Keywords

Occupational therapy, home care, bathing, assistive devices, skill mix, support personnel

Received: 1 March 2013; accepted: 24 May 2013

[1]School of Rehabilitation, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, QC, Canada
[2]Department of Community Health Sciences, Faculty of Medicine and Health Sciences, Université de Sherbrooke, Sherbrooke, QC, Canada

Corresponding author:
Manon Guay, School of Rehabilitation, Faculty of Medicine and Health Sciences, Université de Sherbrooke, 3001 12th Avenue North, Sherbrooke, QC J1H 4C4, Canada.
Email: manon.guay@usherbrooke.ca

Introduction

Using skill mix to place expertise within a multidisciplinary team in a hierarchy is one strategy for responding to the rehabilitation needs of the population.[1–3] Stakeholders in Quebec (Canada) have suggested the training of in-house practitioners with less formal training than occupational therapists (OTs) to meet the needs of the elderly living at home with bathing difficulties,[4] a common problem in the geriatric population.[5,6] On the one hand, non-OTs (generally home health aides[7]) determine simple clinical situations for which they should recommend equipment such as grab bars and bath seats to facilitate bathing and make it safe, and, on the other, defer to an OT when facing a client with a complex problem.[4]

Quebec's occupational therapy regulatory board has acknowledged this provision of services as long as non-OTs rely on a 'tool' to guide and document their observations and support communication with an OT.[8,9] In response to these guidelines, clinicians in publicly funded health and social services centres in Quebec ($N = 95$) have developed at least 52 in-house tools.[7]

Recently, the clinical algorithm 'Algo' was developed to meet the needs of health and social services centres (http://ergotherapie-outil-algo.ca/en/home/). Algo is a decision tree for selecting equipment for the bathtub or shower stall of home-dwelling individuals who have difficulty bathing. Its content validity has been studied through consultation with clinicians.[10] Nevertheless, Algo's criterion validity needed to be tested to verify that non-OTs using it could identify 'straightforward cases' and provide appropriate bath-seat recommendations. That was the purpose of this study.

Methods

Recommendations formulated by home health aides using Algo were compared with those formulated by one of two OTs from the research team, considered as the criterion. To help interpret the error rate of home health aides using Algo, interrater agreement between two home-care OTs was also estimated with a subgroup of clients.

Subjects

The study involved two types of participants: clients and practitioners. The clients were community-dwelling older adults (living at home or in private residential care facilities) with difficulties bathing in accordance with the definition of the Functional Autonomy Measurement System (SMAF).[11] They were recruited with a non-probability convenience sampling strategy in four Eastern Townships health and social services centres with different organizational characteristics. Whenever a service request to adapt a bathroom was placed by an older adult, their relatives or someone on the healthcare team, the client was solicited for participation by the interdisciplinary team professional who handles these requests. Clients on the waiting list were also considered.

The professional in charge of triage had to judge the relevance of recruiting clients according to the study's inclusion criteria (see Table 1 for the detailed criteria). The healthcare professionals targeted to perform recruitment received 1 hour of training and were given a checklist.

For practitioners (home health aides and OTs), two recruitment strategies were used. First, the managers of health and social services centres selected the home health aides from among their group of workers. The recruited home health aides were given 5 hours of training by an OT on the research team to ensure that they used Algo properly and complied with the data-collection procedure. More specifically, training was carried out in three steps: two 2-hour workshops in small groups, including role modelling, separated by a 1-hour period of individual work. Algo comes with a user's guide (http://ergotherapie-outil-algo.ca/en/algo/) that was handed out to home health aides.

Second, all of the clinical OTs from the four home-care interdisciplinary teams ($n = 63$) were asked to take part in collecting data. Each volunteer OT was invited to attend an hour-long preparatory meeting to take ownership of the study context and data-collection procedures.

Table 1. Characteristics of 'complex cases' included in Algo and leading to the exclusion of 73 clients during triage.

Has a degenerative neurological disease	12
Is at the end of life	0
Has a medical contraindication (e.g. partial weight bearing)	17
Cannot get to the bathtub/shower stall unassisted	3
Wants or needs to sit at the bottom of the bathtub	13
Is less than 18 years of age	0
Weighs more than 250 pounds	7
Is unable to get up and remain standing	1
Cannot use a bar for support	0
Does not cooperate or understand instructions	7
Has a non-standard bathtub	13
Total	**73**

Data collection, instruments and variables

During a first visit, one of two research OTs (criterion) obtained consent. Questionnaires and the SMAF[11,12] were then used to characterize older adults. Scores for individual SMAF items enable classification of clients into one of 14 ISO-SMAF Profiles,[13] characterizing their type of disabilities.

The nature of the clinical situation (straightforward/complex) and recommended bathing seat (eight choices) were the main variables. The research OTs judged cases as either straightforward or complex based on their clinical judgement and information regarding skill mix published by the regulatory board.[8] Then they selected the best choice between (1) no seat in the shower stall, (2) no seat in the bathtub, (3) bath stool in the shower stall, (4) bath stool in the bathtub, (5) bath chair in the shower stall, (6) bath chair in the bathtub, (7) bath board in the bathtub and (8) bath transfer bench in the bathtub. The OTs could determine that another option was more suitable for the client, but they had to write it down. Finally, the research OTs had to list which other seats (out of the eight options) would also be acceptable choices, meaning they could be installed in the client's bathroom and would allow bathing without a risk of imminent injury to the client or caregivers, if any.

For all recommendations, the OTs were prompted to use one or more subjective and objective assessment methods, depending on the nature of the client's request and the characteristics of the individual and his or her environment, in determining the need for bathing equipment. They did not know about Algo and were asked to perform an assessment as they normally did, following the practice guidelines issued by their regulatory board.[14]

During the second visit, a home health aide used Algo with the client. Algo is structured with simple questions guiding the user to decide if he or she has to stop the assessment because the client's clinical situation is complex, or continue because it is straightforward.[15] In the latter case, Algo yields both systematic and unsystematic outputs. First, all clients that represent straightforward cases systematically receive (1) general recommendations, such as installing non-slip mats inside and outside the bathtub or shower stall, and (2) the recommendation to add two wall grab bars. Second, Algo guides non-OTs to select a bath-seat model to recommend to the client, when required, which therefore constitutes an unsystematic output (i.e. one of the eight bath-seat options). The home health aide also had to document falls or hospitalizations that occurred since the client was visited by the research OT. At any time and especially in cases of doubt or unfamiliar situations, the home health aides were to seek support[16] from a designated occupational therapist on the interdisciplinary team who was not otherwise involved in the study.

For a subsample of clients, a third visit was performed by an OT from the health and social services centre not involved in the research team. These

clinical OTs received the same instructions as the research OTs about the nature of the occupational therapy assessment to be carried out in order to determine the case's simplicity and to recommend the best seat. Any falls or hospitalizations since the home health aide's visit were also documented.

The research OTs, home health aides and clinical OTs submitted their recommendations without being aware of those made by the others. There was no discussion between them regarding visits to the clients and there was a verbal agreement with clients not to inform assessors about previous visits. Research files were not accessible during the data-collection process. All visits had to occur within a maximum of 10 calendar days.

Sample size

Considering that 75% agreement was expected between the research OTs and home health aides, 73 clients had to be recruited to estimate the agreement with a precision of 10% and a level of confidence of 95%. Since a higher rate of agreement between two OTs was expected (85%), a subgroup of 49 clients had to be recruited to estimate the agreement between their recommendations, again with a precision of 10% and a level of confidence of 95%. The recruitment breakdown in the four health and social services centres was established by considering the volume of requests for community occupational therapy assessment and the number of clinical OTs available.

Data analysis

Participant characteristics are presented using means and standard deviations or frequencies and percentages. Algo's criterion validity was first determined by calculating the sensitivity and specificity[17] for the dichotomous variable 'nature of the clinical situation' (straightforward vs. complex). Then, for the variable 'bath seat', the home health aide's decision was compared with the research OT's decision to determine the number of errors made by the home health aide.

The percentage of agreement[18] and the kappa coefficient[19] were used to compare the opinions of two OTs. Anticipating kappa paradoxes,[20] the delta[21,22] and indicators of prevalence and bias[23] were also calculated. Constructing 95% confidence intervals made it possible to take into account sample variation. We considered the criteria proposed by Landis and Koch[24] when interpreting the measurements of agreement greater than chance. For the variable 'bath seat', only the percentage of agreement between the home health aides and the research OTs was estimated and compared to the percentage of agreement between two OTs with the chi-square test.

The Research Ethics Committee of the Eastern Townships Health and Social Services Centre approved the research protocol (approval number: MP-CSSS-ESTRIE-09-003). Health and social services centres involved in the study received a token payment to compensate for part of the time practitioners dedicated to data collection. A member of the research team gave a tailored talk on global results for each health and social services centre involved in the study.

Results

During the four months of recruitment, 221 requests for bathroom assessments were placed in one of the four health and social services centres (Figure 1). Out of these, 167 clients were eligible for the study and the participation rate was 88%. Half of the clients were judged complex during triage (Table 1).

Lastly, 71 clients were visited more than once and were included in the analysis. The research coordinator assigned them to one of three groups in the following order, taking into account practitioner availability: (a) 33 clients were visited by a research OT and a home health aide; (b) 32 clients were visited by a research OT, a home health aide, and a clinical OT; and (c) 6 clients were visited by a research OT and a clinical OT. Thus 65 participants were considered for Algo's criterion validity, while the data for 38 participants were available to estimate agreement between two OTs when selecting bathing equipment.

The clients were 73 years of age on average and the majority were living home with activities of

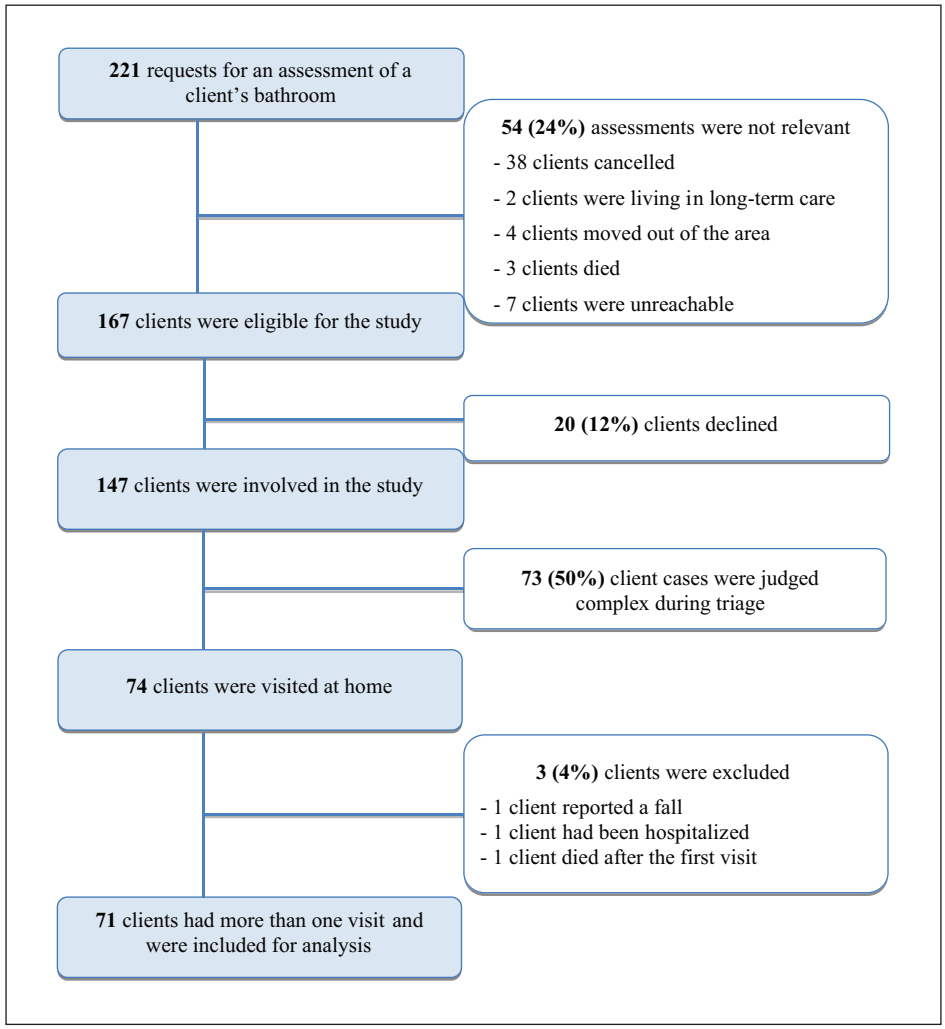

Figure 1. Flow diagram of clients involved in the study.

daily living (ADL) disabilities only (Table 2). The visits conducted by the research OT and the home health aide occurred within an interval of three days on average (ranging from 0 to 9 days), while the visits between two OTs were six days apart on average (ranging from 0 to 10 days).

The research OTs had 14 and 20 years of experience, including community-based practice in health and social services centres in Quebec. One performed 21 visits and the other 53, according to their availability.

Two home health aides were trained in each health and social services centre. In total, 6 women and 2 men performed from 3 to 13 visits (median of 9) with the clients. Their visits lasted an average of 37 minutes (standard deviation of 14 minutes). The home health aides were, on average, 47 years of age (ranging from 29 to 59), with an average of 10 years of work experience (4–20 years) and 11–18 years of education (median of 13 years).

Twelve clinical OTs (10 women) assessed from 1 to 7 clients (median of 3). They were, on average, 37

Table 2. Demographic and clinical characteristics of clients (n = 74).

Continuous variables	Mean (standard deviation)
Age (years)	72.8 (14.4)
Schooling (years)	9.8 (4.6)
Functional autonomy (SMAF score out of –87)	–15.6 (6.6)
Categorical variables	**Frequency (%)**
Sex (female)	52 (70.3)
Living situation	
Home/alone	33 (44.6)
Home/with someone	31 (41.9)
Private nursing home	10 (13.5)
Diagnosis	
Neurological	12 (16.2)
Orthopaedic	29 (39.2)
Cardiopulmonary	13 (17.6)
Oncological	4 (5.4)
Undetermined	16 (21.7)
ISO-SMAF profile	
Impairment of ADLs only (profile 1, 2 or 3)	56 (75.7)
Predominantly motor impairment (profile 4, 6 or 9)	16 (21.6)
Predominantly cognitive impairment (profile 5, 7, 8 or 10)	2 (2.7)

SMAF, Functional Autonomy Measurement System; ADL, activity of daily living.

years old (ranging from 23 to 57), with, on average, 8 years of work experience (ranging from 0.5 to 30).

The sensitivity of the judgement of a home health aide using Algo criteria to determine the simplicity of a clinical situation was moderate when his or her decision was compared with the clinical judgement of an OT (Tables 3 and 4). For 11 of the 65 clients visited, the home health aide refrained from formulating recommendations, whereas the research OT determined that the clinical situation was straightforward. The estimated specificity was low (27%) since the home health aide deemed the clinical situations of eight clients as straightforward, whereas the research OT deemed them as complex.

For a quarter of the clients, however, even two OTs did not agree on nature of the clinical situation and the percentage of agreement over chance was low (kappa = 0.27; delta = 0.52). Consequently, the opinion of the research OT does not appear to be a sound standard to determine straightforward cases that could be visited by a home health aide. Agreement between the home health aide and the research OT were therefore calculated as complementary to the estimates of sensitivity and specificity. Comparing these estimates of agreement with those between two OTs do not reveal statistically different values (P = 0.54).

With respect to bath-seat selection, results are summarized in Tables 5 and 6. In our study, two OTs provided the same seat recommendation for 21 of the 38 clients (55% agreement). The 95% confidence interval (CI) for the agreement between two OTs ranged from 39% to 71%. The percentage of agreement is obviously higher when comparing the recommendation of the clinical OT (i.e. best seat) with all of the acceptable options identified by the research OT, which includes her best choice. Indeed, the clinical OT recommended a seat included in the options proposed by the research OT for 34 of the 38 clients, that is, for 89.5% of clients (95% CI 80–99%).

These results suggest that the gold standard to be considered in Algo's criterion validity is not the

Table 3. Judgement of practitioners concerning the nature of the client's clinical situation.

		Home health aides			Clinical OTs		
		Straightforward	Complex		Straightforward	Complex	
Research OTs	Straightforward	43	11	54	26	7	33
	Complex	8	3	11	2	3	5
		51	14	65	28	10	38

OT, occupational therapist.
Home health aides' sensitivity using Algo: 43/54 = 0.80; home health aides' specificity using Algo: 3/11 = 0.27.

Table 4. Measurements of agreement between the judgement of practitioners related to the nature of client clinical situation ($n_{\text{research OT vs. home health aide}} = 65$ vs. $n_{\text{clinical OT vs. home health aide}} = 38$).

Practitioners	Sens.	Spec.	Prevalence index	Bias index	κ [95% CI]	Δ [95% CI]	Pa
Home health aides	0.80	0.27	0.62	0.05	0.06 [–0.20; 0.32]	0.40 [0.29; 0.51]	70.8
Clinical OTs	N/A	N/A	0.61	0.13	0.27 [0.08; 0.61]*	0.52 [0.39; 0.65][a]	76.3¥

Sens., sensitivity; Spec., specificity; κ, kappa; CI, confidence interval; Δ, delta; Pa, percentage of agreement; OT, occupational therapist.
[a]To our knowledge, there is no statistical test to compare two delta values.
*P-value of 0.33 when compared to the kappa for the home health aide.
¥P-value of 0.54 when compared to the percentage of agreement for the home health aide.

'best seat' according to the research OTs, but the group of acceptable seat options they identified. For the 51 clients for whom the home health aide formulated a recommendation using Algo, he or she identified a seat judged acceptable by the research OT in 43 cases (84%). The 95% CI for this estimate ranges from 75% to 93%. Actually, the Algo users made eight errors, but the rate of seat acceptability recommended by the home health aides with Algo was not statistically different from the rate of the clinical OTs (89.5% vs. 84%; $P = 0.48$).

Discussion

In this study, half of the clients who requested bathroom modifications corresponded to clients who could be visited by a home health aide using Algo. When clients did qualify as potentially straightforward cases after triage, the results indicate that Algo guided them towards equipment that responded to client needs in the large majority (84%) of situations. Although the home health aide did not always recommend the equipment judged ideal by the research OT, the appropriateness rate of seats recommended by the aides did not statistically differ from that of the clinical OTs.

When organizing rehabilitation services according to skill mix, criteria need to be taken into consideration such as the complexity of the client's clinical situation and the nature of the task to be performed.[4] The objective is to enhance work efficiency by discriminating which clients really need to be seen by the 'specialist' and which tasks could be performed by another healthcare team member with minimal but appropriate knowledge and training. Few studies, however, address skill mix in healthcare as a means to ensure the appropriate provision of services to the population.[25–29] Algorithms such as Algo are a way to support clinical practice by guiding professional skills toward clients needing them.

The data-collection process, however, revealed that straightforward cases[15] are not all that common.

Table 5. Bath seats selected by research OTs vs. clinical OTs.

		Clinical OTs									
		No seat/ shower stall	No seat/ bathtub	Stool/ shower stall	Stool/ bathtub	Chair/ shower stall	Chair/ bathtub	Board/ bathtub	Transfer bench/ bathtub	Other	Total
Research OTs	No seat/ shower stall										0
	No seat/ bathtub		**5**								5
	Stool/ shower stall			**1**							1
	Stool/ bathtub				**7**						7
	Chair/ shower stall					**2**					2
	Chair/ bathtub						**6**			*1*[a]	7
	Board/ bathtub							**4**		*2*[a]	6
	Transfer bench/ bathtub								**9**		9
	Other						*1*[a]				1
	Total	0	5	1	7	2	7	4	9	3	38

OT, occupational therapist.
Bold: Clinical OTs' selection was within acceptable choices according to research OTs. Italics: clinical OTs' selection was not within acceptable choices according to research OTs and their choice is compared to the best choice of the research OTs.
[a]Disagreement for clients having been considered complex by at least one OT.

When home health aides do visit clients considered straightforward after triage and use Algo to make recommendations, the specificity and sensitivity of their decision are not impressive when compared to the OT's opinion. Yet agreement on the simplicity of a clinical situation is also only fair when comparing the judgement of two OTs assessing the same clients. What accounts for these results? Possible explanations are that guidelines proposed by the regulatory board of Quebec[8] are difficult for OTs to operationalize and/or that Algo items need improvement.

Our results also suggest that the agreement between two OTs on the 'best' bath seat for an individual was fairly low. Considering that these clients presented a relatively straightforward clinical situation and that the loan of a bath seat is a fairly routine community occupational therapy intervention, these results are surprising. Clinical reasoning of community OTs is influenced by

Table 6. Bath seats selected by research OTs vs. home health aides.

		Home health aides								
		No seat/ shower stall	No seat/ bathtub	Stool/ shower stall	Stool/ bathtub	Chair/ shower stall	Chair/ bathtub	Board/ bathtub	Transfer bench/ bathtub	Total
Research OTs	No seat/ shower stall									0
	No seat/ bathtub		**8**						*1*[a]	9
	Stool/ shower stall			**6**						6
	Stool/ bathtub				**5**					5
	Chair/ shower stall					**1**				1
	Chair/ bathtub		*1*				**14**			15
	Board/ bathtub				*1*			**1**		2
	Transfer bench/ bathtub							*3*	**8**	11
	Other		*1*[a]						*1*	2
	Total	0	10	6	6	1	14	4	10	51

OT, occupational therapist.
Bold: home health aides' selection was within acceptable choices according to research OTs. Italics: home health aides' selection was not within acceptable choices according to research OTs and their choice is compared to the best choice of the research OTs.
[a]Errors made for clients having been considered complex by at least one OT.

factors specific to clinicians as well as by external factors.[30] This influence probably accounts for the fact that, half the time, the OTs did not select the same 'best' seat. This hypothesis could be investigated to better understand why such variability was observed.

It is reassuring, however, to see that the agreement between the OTs was high when the acceptable alternatives were compared. The four occasions when there was disagreement between OTs were because one of them had recommended a bath seat to the client other than the eight choices proposed in Algo.

The results remind us that health practitioners assessing the same clients do not always have the same opinion and therefore perfect agreement between home health aides and OTs cannot be required. Future research should include measuring the predictive validity of bathing recommendations, with and without skill-mix services, to study the influence of opinion variability on client outcomes, such as falls or functional decline. For instance, the

eight errors made by home health aides might have had a clinical impact even if there was no statistical difference when comparing their error rate to the percentage of agreement between two OTs. Research is needed to reveal how to remediate and prevent bathing disabilities among community-dwelling older adults[31] and, beyond using a tool to select bathing equipment, how skill mix supports rehabilitation efforts.

Our study has limitations that should be acknowledged. First, the judgement of the home health aides and OTs in our study may not be representative of practices throughout Quebec. Consequently, there is a potential risk of assessor bias. It is also possible that the non-disclosure between assessors may have been breached despite the precautions taken. Another limitation is associated with the client convenience sampling procedure, which influences external validity. Nevertheless, clients from four health and social services centres were recruited and preserving internal validity was considered more important. The desired sample sizes were not reached before the end of the funding period, so the confidence intervals are larger than expected.

No information is available to compare the recommendations of home health aides using Algo to their judgement based on experience with bathing clients over the years. Some may argue that professional guidelines in Quebec requiring non-OTs to use a 'tool' to enhance population safety[8,9] is questionable, and further research could challenge the hypothesis that a tool such as Algo necessarily helps. Still, this study does provide valid data on which clinicians and administrators can base their decision whether to implement skill mix, either with Algo or with unvalidated in-house tools, to meet the needs of the home-dwelling elderly with bathing difficulties.

Clinical messages

- Agreement between practitioners about which clients could be seen by a home health aide using Algo to recommend bathing equipment to community-dwelling adults was only fair.
- Two OTs did not recommend the same bath seat to community-dwelling adults, but they did agree on which of the eight choices of seat could be installed in the client's bathroom.
- Algo usually allowed appropriately trained and supported home health aides to recommend suitable bathroom modifications in straightforward cases.

Contributions

MG is the principal investigator of this study and wrote the paper. She was supervised by JD and MFD, her thesis supervisors.

Acknowledgements

We thank occupational therapists Nathalie Chevalier, Jessica Boucher and Isabelle Matte for having closely collaborated in data collection, and Chantal Bisson, who coordinated the data-collection process.

Conflict of interest

The authors declare no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors disclose receipt of the following financial support for the research: Eastern Townships Health and Social Services Agency. The first author received scholarships from the Canadian Institute of Health Research (no. 200810SBM-197227-FAH-CFDA), Fonds de recherche en santé du Québec (no. 12539), Institut de recherche Robert-Sauvé en santé et en sécurité du travail, Canadian Occupational Therapy Foundation, and the Ordre des ergothérapeutes du Québec for her doctoral study.

References

1. Stanmore E, Ormrod S and Waterman H. New roles in rehabilitation – the implications for nurses and other professionals. *J Eval Clin Pract* 2006; 12: 656–664.
2. Nancarrow S and Mackey H. The introduction and evaluation of an occupational therapy assistant practitioner. *Aust Occup Ther J*. 2005; 52: 293–301.
3. Lewin G, Calver J, McCormack B, et al. The Home Independence project. *Geriaction* 2008; 26: 9.
4. Guay M. [Issues surrounding the participation of auxiliary personnel in occupational therapy]. *Can J Occup Ther* 2012; 79: 116–127.

5. Naik AD, Concato J and Gill TM. Bathing disability in community-living older persons: common, consequential, and complex. *J Am Geriatr Soc* 2004; 52: 1805–1810.
6. Berlau D, Corrada MM, Peltz CB, et al. Bathing as a potential target for disability reduction in the oldest old. *Am J Public Health* 2011; 101: 200–201.
7. Guay M, Dubois M-F, Desrosiers J, et al. The use of skill mix in homecare occupational therapy with patients with bathing difficulties. *Int J Ther Rehabil* 2010; 17: 300–308.
8. Ordre des ergothérapeutes du Québec. *Participation du personnel non-ergothérapeute à la prestation des services d'ergothérapie: lignes directrices*. Montréal: Ordre des ergothérapeutes du Québec, 2005, p. 34.
9. Ordre des ergothérapeutes du Québec. *Participation du personnel non-ergothérapeute à la prestation des services d'ergothérapie. Lignes directrices (OEQ, 2005) − addenda (OEQ, 2008)*. Montréal: Ordre des ergothérapeutes du Québec, 2008, p. 2.
10. Guay M, Desrosiers J, Dubois MF, et al. Algo: a clinical algorithm for support personnel selecting bathing equipment. *Can J Occup Ther* (submitted).
11. Hébert R, Carrier R and Bilodeau A. The Functional Autonomy Measurement System (SMAF): description and validation of an instrument for the measurement of handicaps. *Age Ageing* 1988; 17: 293–302.
12. Desrosiers J, Bravo G, Hébert R and Dubuc N. Reliability of the revised functional autonomy measurement system (SMAF) for epidemiological research. *Age Ageing* 1995; 24: 402–406.
13. Dubuc N, Hébert R, Desrosiers J, et al. Disability-based classification system for older people in integrated long-term care services: the Iso-SMAF profiles. *Arch Gerontol Geriatr* 2006; 42: 191–206.
14. Ordre des ergothérapeutes du Québec. *Référentiel de compétences lié à l'exercice de la profession d'ergothérapeute au Québec*. Montréal: Ordre des ergothérapeutes du Québec, 2010, p. 52.
15. Guay M, Dubois M-F, Desrosiers J, et al. Identifying characteristics of 'straightforward cases' for which support personnel could recommend home bathing equipment. *Br J Occup Ther* 2012; 75: 563–569.
16. Guay M, Levasseur M, Turgeon-Londei S, et al. Exploring support needed by home health aides in choosing bathing equipment: exploring new challenges for occupational therapy collaboration. *Work* 2013; 46. DOI: 10.3233/WOR-121527.
17. *British Medical Journal*. Statistics Notes: Diagnostic tests 1: sensitivity and specificity. *BMJ* 1994; 308: 1552.
18. Sim J and Wright CC. The kappa statistic in reliability studies: use, interpretation, and sample size requirements. *Phys Ther* 2005; 85: 257–268.
19. Cohen J. A coefficient of agreement for nominal scales. *Educ Psychol Meas* 1960; 20: 37–46.
20. Feinstein AR and Cicchetti DV. High agreement but low kappa: I The problems of two paradoxes. *Clin Epidemiol* 1990; 43: 543–549.
21. Andres AM and Marzo PF. Delta: a new measure of agreement between two raters. *Br J Math Stat Psychol* 2004; 57: 1–19.
22. Andres AM and Marzo PF. Chance-corrected measures of reliability and validity in K x K tables. *Stat Methods Med Res* 2005; 14: 473–492.
23. Mandrekar JN. Measures of interrater agreement. *J Thorac Oncol* 2011; 6: 6–7.
24. Landis JR and Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977; 33: 159–174.
25. Crossan F and Ferguson D. Exploring nursing skill mix: a review. *J Nurs Manage* 2005; 13: 356–362.
26. Dixon S, Kaambwa B, Nancarrow S, et al. The relationship between staff skill mix, costs and outcomes in intermediate care services. *BMC Health Serv Res* 2010; 10: 221.
27. Buchan J and Dal Poz MR. Skill mix in the health care workforce: reviewing the evidence. *Bull WHO* 2002; 80: 575–580.
28. Laurant M, Reeves D, Hermens R, et al. Substitution of doctors by nurses in primary care. *Cochrane Database Syst Rev* 2005: CD001271.
29. Munn Z, Tufanaru C and Aromataris E. Recognition of the health assistant as a delegated clinical role and their inclusion in models of care: a systematic review and meta-synthesis of qualitative evidence. *Int J Evid Based Healthc* 2013; 11: 3–19.
30. Carrier A, Levasseur M, Bedard D and Desrosiers J. Community occupational therapists' clinical reasoning: identifying tacit knowledge. *Aust Occup Ther J* 2010; 57: 356–365.
31. Murphy SL, Gretebeck KA and Alexander NB. The bath environment, the bathing task, and the older adult: a review and future directions for bathing disability research. *Disabil Rehabil* 2007; 29: 1067–1075.