

Can conference participation lead to changes in clinical and research practice in stroke care? A survey of stroke conference attendees

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ABSTRACT

Background. Conferences are a widespread method of research dissemination; however, their impact on practice is not well understood empirically. We aimed to investigate how conference participation influences clinical and research practice in the stroke field and to explore which presentation formats are most impactful. **Methods.** Clinicians, researchers and doctoral students who attended a multidisciplinary stroke conference were invited to participate. Surveys were administered at the conference and 3 months later. Both surveys contained questions about how respondents remember and apply information learnt at conferences in their clinical and/or research practice. **Results.** Baseline survey responses from 120 conference participants were analysed (80.8% female, 69.0% clinicians, 60.8% aged 31–50 years), and 53 participants completed the follow-up survey. Of the 87 clinician respondents, 73 (83.9%) reported that their clinical practice had changed as a result of attending conferences. Workshops incorporating skill demonstrations were rated most useful for changing clinical practice, whereas oral presentations detailing methodology were more influential on research practice. Attending conferences was rated more impactful on clinical practice than reading journal articles or textbooks. **Conclusion.** Conference presentations can be a useful method for disseminating research findings to influence clinical practice and should be considered by researchers to maximise the translation and impact of their work.

Keywords: clinical implementation, conference participation, evidence-based practice, interprofessional education, knowledge translation, multidisciplinary conference, research dissemination, stroke rehabilitation.

Introduction

Academic and clinical conferences have been described as playing an important role in the ongoing education of health professionals and health care providers (Mishra 2016). Medical and allied health clinicians are often mandated to meet a certain quota of professional development hours to maintain their registration requirements, and conference attendances represent an efficient way to meet these quotas. However, rather than simply educating health professionals, many organising committees strive for conferences to promote research translation so that research presentations inform future research projects or lead to improvements in clinical practice and patient outcomes. In the stroke recovery and rehabilitation field, ‘moving evidence-based treatments into practice’ has been recently highlighted as a key priority (Bernhardt et al. 2019).

Changing practice is notoriously difficult. Traditionally, researchers conduct their studies and publish these findings in peer-reviewed journals. Journal publications are a key index of academic track record and therefore are often the most valued form of output for researchers (Lynch et al. 2018). However, the impact of journal publications on clinical practice and policy is inconsistent, and implementing findings from published literature in routine clinical practice remains a challenge in health care across the world, as exemplified in stroke rehabilitation (Walker et al. 2013). Clinicians strive to provide

care that improves patient outcomes, yet there is evidence that individual clinicians vary in their delivery of evidence-based healthcare (McGlynn *et al.* 2003; Runciman *et al.* 2012). Although clinicians have a professional responsibility to apply evidence into clinical practice, they may prioritise daily management of health service delivery over keeping abreast of the latest research. Further, research publications that clinicians may be aware of may not present the evidence in a way that is directly applicable to clinical settings, presenting another barrier to its use in clinical practice.

Researchers are becoming more aware of the importance of demonstrating how their research findings are being used to improve health and quality of life or deliver broader societal benefits. This demonstration of research impact is expected by many funding bodies and is now included in university performance metrics in Australia and the United Kingdom (Australian Research Council 2019; Research Excellence Framework 2019). Accordingly, there is a drive for researchers to share their research findings in ways that will promote translation and impact, which frequently means looking for dissemination methods to augment academic publications.

Conferences provide a forum where clinicians and researchers can meet and learn from one another about research evidence as well as opportunities and challenges in clinical practice. Researchers can present their findings in person, display and trial new devices or techniques in stroke care, discuss key questions and run workshops to share skills. The opportunity for two-way verbal exchange between researchers and clinicians can allow clinicians to draw out the information that is most relevant for them in their clinical setting. These interactions facilitate collaboration between these groups, which can enhance research translation and impact (Fudge *et al.* 2016).

Attendance at conferences is widely accepted and supported by many universities and health services. However, there is growing concern about the cost of attendance and the return on this investment (Kircherr and Biswas 2017). Evidence to justify this expense is somewhat mixed. A systematic review of randomised controlled trials investigating the effectiveness of educational meetings (which included conferences, workshops, courses and symposia) reported that attendance at educational meetings tended to result in small to moderate improvements in professional practice but only small improvements in patient outcomes (Forsetlund *et al.* 2009). However, the studies included in the review were from a wide range of fields and included only evaluations of specific educational interventions to improve a specific type of practice outcome, usually within a specific health profession (Forsetlund *et al.* 2009). We are not aware of any studies investigating the broader interprofessional translational impact of participation in conferences. It might be expected that interprofessional conferences would have a different impact from single-discipline conferences, as the latter usually have broader content (e.g. a rehabilitation physician's

conference may include presentations about cancer, orthopaedic injuries, etc.), as opposed to focusing on stroke care as delivered in practice by multidisciplinary teams.

International audit data indicate that evidence-based therapies are not consistently delivered to people with strokes (Bray *et al.* 2018; Howard *et al.* 2018; Stroke Foundation 2019), and therefore, it is a matter of priority that methods for effective research translation are identified. This research was conceived by a multidisciplinary group of researchers with an interest in research translation and stroke rehabilitation. We focused on the impact of attending a dedicated interprofessional stroke conference, rather than a more generalised brain injury or single-discipline conference, because stroke care is mostly provided by multidisciplinary teams of health professionals with a particular interest in stroke. We sought to:

- (i) Investigate whether conference attendees perceived that participating in conferences results in change to their own clinical and/or research practice in the stroke field, and
- (ii) Identify which conference elements (such as didactic presentations, interactive workshops and informal networking) are considered the most impactful on stroke practice.

Materials and methods

Ethical approval for this study was obtained from the La Trobe University Human Research Ethics Committee, approval number: HEC18292. All participants provided informed consent to participate. Reporting is in line with STROBE guidelines for observational studies.

Participants

Attendees of the Stroke-2018 conference (a combined conference of the Stroke Society of Australasia and Smart Strokes), held in August 2018 in Sydney, Australia, were invited to participate. Attendees were eligible to participate if they were researchers, clinicians or doctoral students. Stroke survivors, industry representatives and other types of registrants were excluded, unless they also fell into one of the eligible categories. There were 643 full conference registrants, and we estimated that between 5 and 10% of these would be ineligible. Therefore, we calculated our target sample size as 234, which would be a representative sample from the 600 eligible registrants according to established survey sample size estimation methods (Taherdoost 2017).

Materials

Two related surveys were developed by the research team. In the context of the Knowledge to Action Framework (Graham *et al.* 2006) for knowledge translation, survey

questions were focused on investigating processes relevant to conference participation within the 'Identify, review, select knowledge' and 'Adapt knowledge to local context' components of the Action Cycle. For the 'Identify, review, select knowledge' component, survey questions aimed to identify the potential mechanisms by which clinical and research practice changes occurred, including the learning strategies used to absorb conference content, the most useful presentation types/components and presenter characteristics, and the impact of the later review of learned content. For the 'Adapt knowledge to local context' component, questions aimed to identify whether conference attendees' research and clinical practice changed as a result of conferences generally and the Stroke-2018 conference specifically, as well as the comparative influence of conferences, journal articles and textbooks on practice.

Survey 1 (see Supplementary Appendix S1) included 41 questions regarding demographic details, history of changing clinical or research practice as a result of previous conference attendance, methods for recording and remembering information during conferences, and preferences regarding research dissemination methods and presentation types. Survey 2 (available upon request to the authors) contained 20 questions about whether participants had reviewed their Stroke-2018 conference notes, whether and how their clinical or research practice had changed since the Stroke-2018 conference, and which factors had been the most influential and impactful over the past 3 months. Both surveys contained primarily multiple-choice response formats; however, both also contained a number of open questions with open-text responses. None of these questions required compulsory responses.

Procedure

Survey 1 was administered during the conference, and Survey 2 was administered 3 months later. Participants completed Survey 1 either online using Qualtrics on their own device, or using an iPad that was available for use at the conference, or on a paper version that was distributed and collected at the conference. A link to Survey 2 was emailed to those who provided their email address in Survey 1 and consented to being followed up. Survey 2 was completed online using Qualtrics. Each survey took approximately 10 min to complete.

Data analysis

Survey data were collated in a common database and were primarily analysed using descriptive statistics. Comparisons of group means were conducted where applicable. Ranked data regarding the importance or influence of different forms of information exchange were coded so the highest number, which was seven, corresponded to the most influential ranking, and averages were calculated.

Missing data were reviewed and considered to be of minimal impact in the current dataset, given low rates of

mid-survey attrition ($n = 4$, 4.9% in Survey 1, and $n = 1$, 1.9% in Survey 2), low rates of missing individual item responses (not exceeding 7%) and the largely descriptive nature of the analyses. Missing data were not imputed. Percentages reported in the results are based on the number of respondents who answered each item.

A summative approach to qualitative content analysis (Hsieh and Shannon 2005) was used for responses to open-ended questions by inductively coding all available written responses to identify key ideas mentioned in open-text responses and then counting the number of times that the codes were mentioned for each question. The code counts were conducted initially by a junior researcher and clinical neuropsychologist, KB, then checked by a senior researcher and clinical neuropsychologist, DW. Any discrepancies were resolved through discussion.

Results

One hundred and twenty-six attendees responded to Survey 1. Four respondents were ineligible to participate (due to not being clinicians, researchers or doctoral students), and two eligible respondents discontinued after question 1. Four respondents did not answer all questions, but their available data were included. Therefore, data from 120 conference attendees were included in the analysis. This represented 20% of the 600 eligible conference registrants. No data were available explaining why potential respondents chose not to participate in either survey.

Of the 120 respondents to Survey 1, 53 (44.2%) responded to Survey 2 and were included in the 3-month follow-up analysis. One respondent did not complete all questions, and a further nine respondents did not provide their email address, so data from nine respondents could not be linked to allow comparison between anticipated (Survey 1) and reported (Survey 2) responses to questions about recording and reviewing conference information.

Participant characteristics

As shown in Table 1, the majority of participants were female, aged 31–50 years, from nursing or allied health disciplines and worked in metropolitan areas. Those in clinical roles were primarily working in hospital inpatient settings with a smaller proportion in community/outpatient settings. Twenty-five respondents endorsed dual or multiple roles. Doctoral students completed the questions relevant to research and are included in the researcher category.

Respondents to Survey 1 reported attending the Stroke-2018 conference in order to improve their knowledge of the latest research in the field ($n = 47$, 40.9%), to improve their clinical practice ($n = 31$, 27.0%), to present their own research ($n = 29$, 25.2%) or for other purposes, such as networking and maintaining a presence within the field ($n = 8$, 7%). Over half of the respondents ($n = 74$, 64.4%)

Table 1. Survey 1 participant demographics.

	Category	N 120 (%)
Age	18–30	19 (15.8)
	31–40	38 (31.7)
	41–50	35 (29.2)
	51–60	24 (20.0)
	61+	3 (2.5)
	Not specified	1 (0.8)
Sex	Female	97 (80.8)
	Male	22 (18.3)
	Not specified	1 (0.8)
Role	Clinician ^A	87 (72.5)
	Hospital inpatient setting ^B	64 (73.5)
	Hospital outpatient setting ^B	11 (12.6)
	Community setting ^B	17 (19.5)
	Researcher ^A	54 (45.0)
	Doctoral student	18 (33.3)
Discipline	Nursing	29 (24.2)
	Physiotherapy	29 (24.2)
	Medicine	20 (16.7)
	Occupational therapy	16 (13.3)
	Speech pathology	7 (5.8)
	Clinical psychology	5 (4.2)
	Neuropsychology	4 (3.3)
	Epidemiology, biomedical science, neuroscience	10 (8.3)
Region	Metropolitan	80 (66.7)
	Regional	34 (28.3)
	Remote	5 (4.2)
	Not specified	1 (0.8)

^AValues add up to more than 100% because 25 respondents reported dual or multiple roles.

^BValues add up to more than 100% because four participants reported working in more than one clinical setting.

received financial support to attend, most commonly from clinical workplaces ($n = 30$, 26.1%), academic institutions ($n = 27$, 23.5%), or specific grants or scholarships ($n = 17$, 14.7%). Three quarters of participants ($n = 85$, 73.3%) had attended at least one other conference in the previous 12 months.

Recording and reviewing conference information

Most respondents to Survey 1 recorded information learned at conferences by taking notes ($n = 110$, 93.2%) and/or by taking photos of slides ($n = 90$, 76.3%). Of the 44

respondents with data linked to both surveys, most ($n = 41$, 93%) intended to review this information after the conference (Survey 1), and 33 (75%) reported having reviewed their conference notes at the 3-month follow-up. Respondents who committed to reviewing their notes within a set timeframe were more likely to review their notes than those who did not commit to a timeframe, $X^2(3, N = 44) = 14.75$, $p = 0.002$ (Fig. 1).

Communication following conferences

The majority of Survey 1 respondents ($n = 76$, 64.4%) were not required to present a summary of key information learnt at conferences back at their workplace, but half of them ($n = 38$) planned to give workplace presentations anyway. At follow-up, 20 of the 53 follow-up survey respondents (37.7%) had presented information learned at Stroke-2018 to their work colleagues, most commonly in the form of verbal summaries and discussions ($n = 7$), written summaries ($n = 5$) and grand rounds or workshops ($n = 4$). A further seven (13.2%) respondents planned to give a workplace presentation about information from Stroke-2018 in the near future.

Influence of conferences on clinical practice

The majority of the 87 clinician respondents at Survey 1 ($n = 73$, 83.9%) indicated that they had previously changed their clinical practice as a result of attending a conference prior to Stroke-2018. Respondents most commonly described general improvements in the delivery of evidence-based practice ($n = 35$), with specific examples of procedural changes given by 19 respondents, for example implementing circuit classes or altering patient selection approaches for specific medical interventions.

At follow-up, 23 of the 37 clinician respondents (62.2%) reported that their clinical practice had changed as a result of attending the Stroke-2018 conference, with respondents describing:

- Increased opportunities for practice in rehabilitation ($n = 6$), e.g. 'more emphasis on reps – programs developed to increase reps' [quote from Participant 33, clinician]
- Increased promotion of stroke prevention and risk education ($n = 3$)
- Improvements in implementation of medical and nursing interventions (Computed tomography (CT) perfusion, blood pressure management and bladder care) ($n = 3$), and
- Joining research trials aiming to improve stroke recovery ($n = 2$).

Influence of conferences on research practice

In Survey 1, 41 of 52 researcher respondents (78.8%) reported that previous conference attendance had influenced their research by refining the design or methodology of

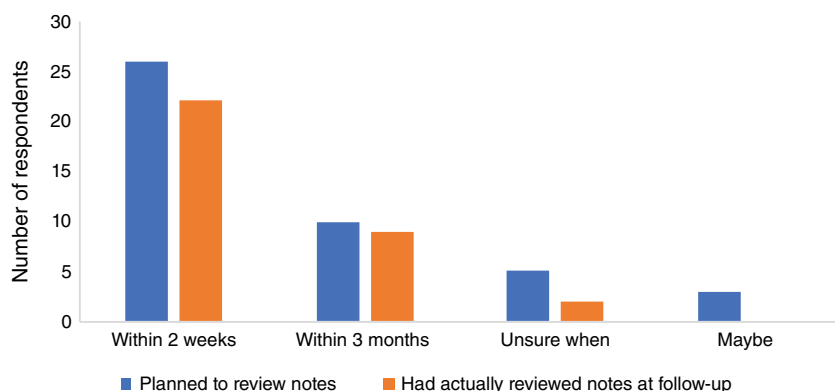


Fig. 1. Number of respondents who planned to review their conference notes at the time of Survey 1 (during conference) and those who reported having reviewed their notes at Survey 2 (follow-up).

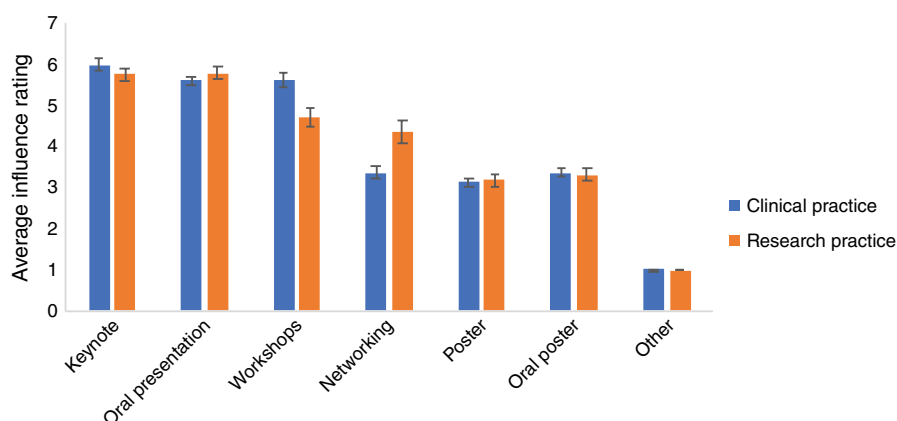


Fig. 2. Average ratings of how influential each form of information exchange is on clinical and research practice as rated in Survey 1 (during the conference). 1 = least influential and 7 = most influential. Other = 'case conundrums, advice/discussion on difficult cases' (as described by one clinical respondent) and 'informal connections when travelling' (as described by one research respondent).

research ($n = 15$), generating new or more focused research ideas ($n = 11$) and forming collaborations ($n = 6$).

At follow-up, 9 of the 23 researcher respondents (39.1%) reported that their research practice had changed as a result of attending Stroke-2018 by:

- (a) Forming new collaborations ($n = 2$)
- (b) Helping shape the direction of studies and manuscript write-ups ($n = 2$), e.g. 'Fine tuned my research proposal following (feedback from) a presentation I gave' [quote from Participant 19, Researcher], and
- (c) Inspiring them to do their own research and gain a fellowship ($n = 1$).

Formats most influential for clinical and research practice

Survey 1 respondents reported that the most influential forms of information exchange at conferences for both clinical and research practice were keynote addresses and oral presentations (see Fig. 2). Workshop presentations were also deemed to be influential by clinician respondents. Posters were considered least likely to influence clinical and research practice.

At follow-up, a similar pattern was observed. The most influential forms of information exchange at the Stroke-2018 conference reported by both clinicians and researchers

Table 2. Summary of most influential aspects of keynote addresses, oral presentations and workshops for influencing clinical and research practice.

Form of exchange	Most useful for influencing practice change (in order of preference)	
	Clinicians	Researchers
Keynote	1. Conclusion 2. Background 3. Results	1. Background 2. Conclusion 3. Methods
Oral presentation	1. Methods 2. Results 3. Conclusions	1. Methods 2. Results 3. Background
Workshop	1. Demonstrations 2. Conclusions 3. Visual aids	1. Demonstrations 2. Questions/discussions 3. Visual aids

were keynote addresses followed by oral presentations. In addition, clinicians reported changing practice following workshops, and researchers reported their research being influenced by networking activities.

Respondents who reported keynote, oral and workshop presentations to be influential on their practice were asked to nominate three aspects within these presentation types that were most useful. These results are summarised in Table 2, and additional detail can be found in Supplementary Appendix S2.

At follow-up, respondents who selected keynote as their most influential presentation type reported the summary of current evidence and the ‘big picture’ of what is happening globally in stroke care as influential components of the Stroke-2018 keynote presentations. Those who selected oral presentations described the opportunity to discuss results and methodologies with presenters as being highly influential. Respondents who preferred workshops noted that practical examples of how to implement new knowledge into practice and the opportunity to engage with the workshop presenters at Stroke-2018 were particularly influential.

Presenter and presentation factors that influence practice

When asked which presenter and presentation factors were important for influencing their clinical or research practice (in Survey 1), clinicians and researchers nominated the same three factors, albeit in different order: (i) relevance of the presentation to their clinical practice or research,

(ii) the likely benefit to their patients or their own research, and (iii) the evidence strength/scientific rigour (Fig. 3).

In addition to the factors presented in Fig. 3, respondents nominated other elements that influenced their clinical and research practice. Clinicians primarily referenced the feasibility or relevance of a presentation to their own setting ($n = 13$), opportunities to communicate with the speaker and other attendees afterward ($n = 4$) and the passion/motivation of the speaker ($n = 2$). Researchers commented on the clarity and detail provided ($n = 2$), having extended presentation length or panel discussions to obtain more useful information ($n = 2$) and the clinical application or likely benefit of an intervention to patients ($n = 2$).

Comparing conferences with other forms of dissemination

In Survey 1, participants were asked to rate the extent of impact of conferences, peer-reviewed journal publications and text books/book chapters on their clinical and research practice out of a maximum rating of 100. As shown in Fig. 4,

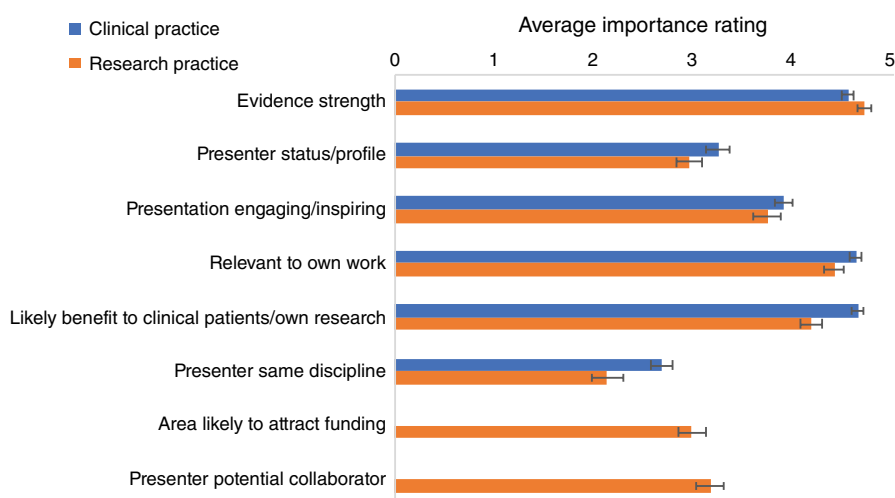


Fig. 3. Average importance ratings (out of five) of conference presentation features associated with greatest influence on clinical and research practice, as rated in Survey 1.

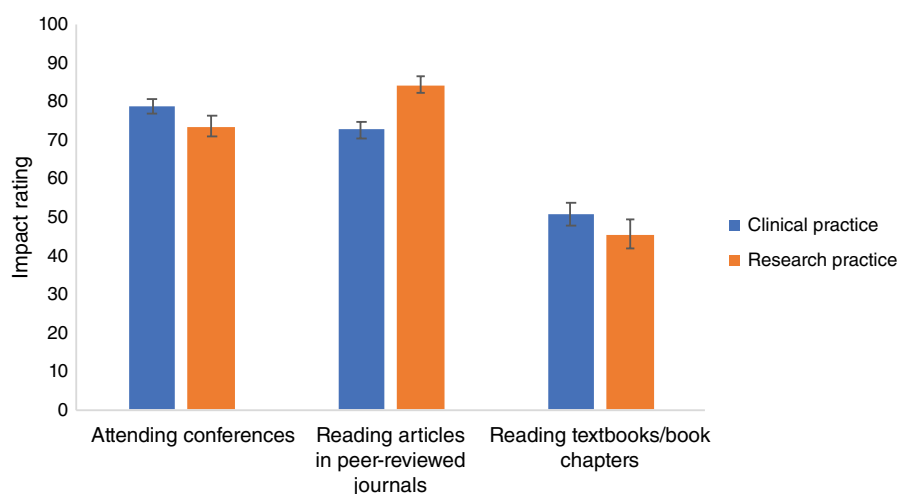


Fig. 4. Ratings of the impact of different types of research information dissemination on clinical and research practice (high rating = more impactful), as rated in Survey 1.

attending conferences was rated as the most impactful dissemination method for clinical practice ($M = 78.98$), significantly more impactful than reading articles in peer-reviewed journals ($M = 72.84$, $t(80) = 2.46$, $p = 0.016$) and reading textbooks/book chapters ($M = 50.94$, $t(80) = 8.99$, $p < 0.001$). For research practice, reading articles in peer-reviewed journals was rated as most impactful ($M = 84.46$), followed by attending conferences ($M = 73.65$) and then reading textbooks/book chapters ($M = 45.76$). Reading journal articles was reported to be significantly more impactful on research than on clinical practice ($t(17) = 2.11$, $p = 0.05$).

Participants were asked the same question at follow-up; the only difference was that they rated attendance specifically at Stroke-2018. Responses showed the same pattern, whereby reading articles was deemed most likely to impact research practice and attending Stroke-2018 was deemed most likely to impact clinical practice.

Discussion

In this survey study, the majority of clinicians and researchers attending a multidisciplinary stroke conference reported changes to their practice resulting from current or previous conference attendance. The type of presentation influenced the type of impact: keynote addresses were helpful in providing the 'big picture' for both clinicians and researchers, workshops with demonstrations of techniques were considered important for clinical skill development and changing clinical practice, and oral platform presentations detailing methodology were important for influencing research practice. Importantly, conference attendance was rated by clinicians as more impactful on their clinical practice than traditional forms of research dissemination, such as journal articles. These results highlight the potential of conferences as a vehicle for knowledge translation, particularly in the case of translation to clinical practice.

For the information learned at conferences to impact practice, it needs to be remembered when attendees were back in the workplace. We found that the majority of conference attendees intended to review their conference notes, most often in the form of written notes or photos of slides, at some point following the conference. However, those who did not indicate a specific timeframe for reviewing their notes were less likely to review them, indicating the importance of a commitment to review information recorded at conferences within a specified time period. This is consistent with what is known in terms of clarity of intentions and behaviour change (Webb and Sheeran 2006). One way to ensure attendees review conference material would be to present a summary of key conference learnings to colleagues, which was a workplace requirement of only one-third of respondents, even though two-thirds received support from their workplace to attend. It may be helpful for both clinical and academic organisations to support

conference attendees to develop and implement a knowledge translation plan as part of their funding arrangements. This may include discussing and planning with colleagues how to apply what was learned to their clinical and research practice. These sorts of initiatives could facilitate both the 'Identify, review, select knowledge' and 'Adapt knowledge to local context' steps of the Action Cycle in the Knowledge to Action framework (Graham *et al.* 2006).

An unexpectedly large majority (84%) of clinician respondents to Survey 1 reported that their clinical practice had previously changed as a result of attending a previous conference. Almost two-thirds (62%) of clinician respondents to the follow-up survey reported that their clinical practice had changed as a result of attending Stroke-2018 specifically. Respondents described a number of changes that were directly linked to Stroke-2018 conference content; for example, several participants noted that they had been giving their stroke patients more opportunities for practice in rehabilitation, which was a key point made by three keynote speakers, as well as the subject of numerous oral platform presentations (Withiel *et al.* 2018; Wong *et al.* 2018). These results suggest greater impacts from conference attendance than the small improvements that have previously been reported in a meta-analysis focusing on educational meetings (Forsetlund *et al.* 2009). There may be a number of reasons for this apparent discrepancy. Firstly, the meta-analysis only included randomised controlled trials evaluating an educational 'intervention' designed to change specific types of professional practice and patient outcomes, whereas ours was an observational survey design where participants reported on a variety of practice impacts resulting from the conference as a whole. Secondly, the magnitude of our participants' reported changes in practice and their impact on patient outcomes was not measured, only the proportion of attendees who reported change. Thirdly, previous work has indicated that the impact of educational meetings on professional practice varied as a result of the proportion of clinicians in the target audience that attended the meetings, the complexity of the targeted change in practice, and the seriousness or importance of the targeted patient outcome (Forsetlund *et al.* 2009). The changes reported to have been introduced as a result of attendance at Stroke-2018 have several interacting components, meeting the definition of being inherently complex interventions (Craig *et al.* 2008), but it may be that these changes related to patient outcomes that were considered particularly important by the respondents. Related to this, all our participants were attending a dedicated stroke conference, and therefore, the content of presentations was likely to be relevant to their practice with stroke patients. Our data do not allow us to directly test the idea that the relevance and importance of the conference content to the attendees influenced the results; however, this would be an interesting direction for future research.

It is reassuring that both clinicians and researchers reported positive influences from keynote addresses and oral presentations because these presentation types form the core structure of the majority of academic and clinical conferences. Further, in the pandemic-affected world of more online and hybrid conferences, didactic presentations can readily be replicated online via virtual conferences or webinars. Presenters should focus on the aspects of their presentations that different audiences find most useful, which our study indicates are different for researchers and clinicians. When conference organisers strive for translation to clinical practice, skills-based workshops incorporating practical demonstrations as well as interaction with the presenter/s should also be organised, either in person or via an online forum. It would also be worth considering ways to increase the impact of posters, for example by incorporating poster 'tours' with brief presentations by the authors.

In terms of other aspects of presentations considered important for impact, neither clinicians nor researchers rated the status of the presenter highly, which is encouraging for early career presenters. Rather, the relevance of the presentation to the respondent's practice, the likely benefit to their patients or their own research, and the strength of the evidence were most important. These priorities suggest that the idea of 'precision education', where the presentation type and content is tailored to the learning objectives of the audience to maximise both learning and patient outcomes as well as facilitate the application of knowledge to the local context (Graham et al. 2006), is useful and worth pursuing in future research.

Notably, clinicians rated conference participation as more impactful on their clinical practice than reading journal articles or book chapters. Academic outputs in peer-reviewed journals must follow rigorous reporting guidelines, which is useful for researchers wishing to replicate or extend a particular research methodology, thereby explaining the impact of research articles reported by researcher respondents in the current study. However, as a result, journal article content is not necessarily readily applicable to clinical practice. Our findings suggest that conference presentations should potentially be given greater weight in academic track records, particularly in terms of their impact on clinical practice.

Several limitations of this study should be noted. One key limitation is that data regarding change to clinical and research practice were collected via self-report and not direct observation. It is possible that respondents' recall and description of their practice changes were positively biased. However, it is notable that the description of changes that were made following the Stroke-2018 conference by Survey 2 respondents aligned with the content of the conference. Nevertheless, observational and/or audit data collection to follow-up and confirm self-reported changes to practice following conference participation would be a useful direction for further research. This could then lead to comprehensive

cost-benefit analyses of conference participation, as well as more detailed analysis of the association between various conference components and practice outcomes, to further explore facilitators of knowledge translation. Related to this, it may be that our participants, who chose to both attend the stroke conference and to participate in the survey study, were engaged and motivated clinicians and researchers who were particularly likely to actively respond to newly learned information by changing their practice. Investigating ways to change the practice of less engaged clinicians and researchers is an important focus for those of us who are keen to maximise impact.

Another limitation was our sample size ($n = 120$), which was substantially lower than the target sample size of 234. Further, our sample was predominantly female and consisted mostly of people in allied health, rehabilitation and post-acute roles. The extent to which our findings are generalisable to those less well represented (i.e. males, medical professionals, those working in acute settings) is unclear. Additionally, our results are based on participation in one conference only, which was a dedicated stroke conference with multidisciplinary attendees. It is therefore also unclear how our results apply to other conferences with different presentation formats and where the focus is either more broad (e.g. not focused on a single medical condition) or where attendees are from one discipline. Replicating our study in the context of other types of conferences would be a useful way to examine the generalisability of our findings. Nevertheless, it is important to note that this study is the first of its kind and provides a starting point that can guide the focus of future similar studies.

Conclusions

Our survey study can provide guidance for stroke researchers seeking to optimise their clinical and research impact by understanding who benefits from the various methods of dissemination. For clinical impact, presenting at conferences is recommended, either by delivering a practical workshop containing demonstrations of relevant techniques or by giving an oral presentation clearly outlining how to apply new findings to clinical practice. For research impact, publishing findings in peer-reviewed journals and delivering oral presentations clearly outlining methodology and results is suggested. Understanding what is relevant for the target audience and providing clear explanations of how research findings may benefit patients is crucial for both clinical and research impact, thereby optimising evidence-based practice to improve the lives of survivors of stroke.

Supplementary material

Supplementary material is available [online](#).

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Ethics standard. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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