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Knowledge acquisition and research evidence in autism: Researcher and practitioner perspectives and engagement



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ABSTRACT

Background: Government policy and national practice guidelines have created an increasing need for autism services to adopt an evidence-based practice approach. However, a gap continues to exist between research evidence and its application. This study investigated the difference between autism researchers and practitioners in their methods of acquiring knowledge.

Methods: In a questionnaire study, 261 practitioners and 422 researchers reported on the methods they use and perceive to be beneficial for increasing research access and knowledge. They also reported on their level of engagement with members of the other professional community.

Results: Researchers and practitioners reported different methods used to access information. Each group, however, had similar overall priorities regarding access to research information. While researchers endorsed the use of academic journals significantly more often than practitioners, both groups included academic journals in their top three choices. The groups differed in the levels of engagement they reported; researchers indicated they were more engaged with practitioners than vice versa.

Conclusions: Comparison of researcher and practitioner preferences led to several recommendations to improve knowledge sharing and translation, including enhancing access to original research publications, facilitating informal networking opportunities and the development of proposals for the inclusion of practitioners throughout the research process.

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What this paper adds?

This study presents the first evidence of similarities and differences between researchers and practitioners in the methods they use to gain research knowledge of autism. In a novel questionnaire completed by over 600 researchers and practitioners, individuals were asked to indicate the methods that they used to keep up-to-date with research as well as methods that they felt would be beneficial in increasing practitioners' access to research evidence. They were also asked to what extent they engaged with the other group.

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The study showed that practitioners differed from researchers in the methods they used to access information, but had similar overall priorities about what would be beneficial to increase research knowledge for practitioners. The results directly contributed to, and extended, existing literature on research-users' preferences regarding topic areas that should be prioritized for research investigation. It also replicated findings showing different perspectives in the levels of engagement experienced, with researchers perceiving that were more engaged with research-users than vice versa.

The findings from this research highlight potential targets for change in the task of bridging the gap between research and clinical, educational, and policy-based practice. The recommendations include enhancing access to original research publications, facilitating informal networking opportunities and the development of proposals for the inclusion of practitioners throughout the research process.

1. Introduction

Government policy and national practice guidelines have highlighted an increasing need for professionals working in autism services to adopt an evidence-based approach in the delivery of diagnostic methods and clinical and educational interventions. However, a gap continues to exist between research knowledge and its application in practice (Parsons et al., 2013; Reichow, Volkmar, & Cicchetti, 2008). One factor that may contribute to this gap is a difference between academic and non-academic professional groups in their approach to acquiring knowledge of autism research.

Practitioners' views about what counts as a credible knowledge source is historically influenced by their training and experience (Rycroft-Malone et al., 2004). They may, therefore, routinely use different methods from those used by researchers when updating their specialist professional knowledge and have different views about how they could potentially benefit from research evidence in the future. Greater understanding of these perspectives is therefore important for researchers who are aiming to adapt scientific evidence to meet the needs of the wider, non-academic community (Lemay & Sá, 2014).

Effective knowledge translation into practice depends on effective facilitation by researchers (Kitson, Harvey, & McKormack, 1998; Rycroft-Malone et al., 2004), a goal that has been heightened by government policy in recent years by the impact assessment of academic research (e.g. Research Excellence Framework, 2014; <http://www.ref.ac.uk/>). It has been argued that attempts to bridge the research-practice gap need to involve greater collaboration between autism researchers and research-users, such that both communities are engaged in the research process from the beginning (Parsons et al., 2013). Such collaborative activity, or engagement, can facilitate co-participation in the development of research design and method through reciprocal exchange of knowledge. Engagement between researchers and the people who use research is a central component of interactive models of knowledge translation in health policy (Jacobson, Butterill, & Goering, 2003) and a key facilitator of effective knowledge translation (Huberman, 1990). It enables the researcher to orient towards the needs of the user group, provides opportunities for discussion about the values and interpretation of evidence, and helps to facilitate trust and collaboration between researchers and research-users (Milton, 2014; Parsons et al., 2013).

Recent research studies in the field of autism have highlighted the importance of developing a research agenda that is oriented towards the research-user. This work has identified topic areas that research-users prioritize as important areas for future research (Pellicano, Dinsmore, & Charman, 2013; Pellicano, Dinsmore, & Charman, 2014a). Results showed that although researchers and research-users agreed on some of the priorities for future research in autism, there was also a mismatch in priorities for other areas. This research also reported a mismatch in the level of engagement reported by researchers and research-users in the field of autism (Pellicano et al., 2013; Pellicano, Dinsmore, & Charman, 2014b). While academic researchers perceive themselves to be engaging with non-researchers, the same view is not held by non-research users of research.

The findings above emphasize that research should focus on priority areas that meet the needs of the research-user community, a goal more likely to be fulfilled by improved engagement between researchers and non-researchers. The focus of the current study was not on priorities for what should be researched, as previously studied, but on the process of knowledge acquisition. To investigate this, similarities and differences in the methods and preferences for acquiring knowledge used by researchers and research-users were examined, targeting individuals from one sector of the autism research-user community: professional practitioners working in clinical, educational and policy settings. In this respect our definition of 'research-user' is consistent with the definition used by Lemay and Sá (2014) in a study of the translation of research evidence into professional practice. If methods of knowledge acquisition differ, and researchers present evidence in ways that are incompatible with the preferences of practitioners, communication will be inhibited and the translation of research evidence impeded. Therefore, greater understanding of the gap between research and practitioner groups in both their current practice and future preferences will facilitate conditions for collaborative engagement that starts from a more common ground and enable reciprocal exchange.

The current questionnaire study formed part of the development work for an online web-based initiative being designed for the purpose of connecting research, practice, and policy communities. In a set of three questions, researchers and professionals working in practice communities were asked about how they use research information. First, both groups were asked how they currently keep up to date with information in the field of autism. Second, both groups were asked which methods they thought would be beneficial to increase research access and research knowledge for research-users. This question necessarily focuses on the translation of information *from* researchers *to* research-users, to help explore issues about the inadequacy of the communication of research evidence to non-research professionals. Finally, researchers and

practitioners were asked to report on their current level of engagement with the other community. This question was intended as a general measure of the extent to which each group felt that they had any form of active involvement with the other community and was intentionally non-specific, to capture any form of interaction or engagement.

It was expected that the two groups would use different sources of information to keep up to date with professional knowledge, with researchers relying more on primary evidence sources and practitioner research-users relying on alternative evidence sources. However, it was not known if views would differ about the best methods for increasing research knowledge in the non-academic community. Better understanding of potential differences between these groups may identify mechanisms by which knowledge sharing could be improved. Finally, based on previous findings, it was expected that practitioners would report lower levels of engagement with researchers than vice versa.

2. Method

2.1. Participants

A total number of 683 respondents answered at least one of the three questions. Two hundred and sixty one respondents described themselves as working in the area of practice or policy. When asked to specify their occupation, of these 261, the two largest occupational groups represented were professionals working in schools (teachers or teaching/learning assistants; $n=55$), and psychologists, including educational, clinical and occupational psychologists ($n=47$). Other occupational groups included speech and language therapists ($n=21$), psychiatrists ($n=5$), nurses ($n=3$), support workers ($n=16$) and social workers ($n=6$). Nine respondents stated that their occupation included both “policy work” and practice roles, with a further two indicating that their primary occupation was “policy work”. Eighty-two respondents selected “Other” and a further 26 did not respond to this question. The title of ‘practitioner’ group was therefore assigned, to include a range of professionals working in clinical, educational, and policy-based practice.

In the research professional group ($n=422$), the majority described themselves as either established career researchers (including completed a PhD, working in research; $n=256$) or early career researchers (including post-graduate, research assistant or associate, or PhD student; $n=143$). A minority ($n=17$) selected “Other”, which included retired or freelance/independent researcher, and six gave no response. Researchers were also asked in which country they worked.¹ There were 147 researcher responses from North America, 137 from Australia/New Zealand, and a further 108 from elsewhere in the UK. The remaining respondents ($n=30$) came from a range of countries including Serbia, Japan, South Korea, Argentina, South Africa, Columbia and Singapore.

2.2. Design and procedure

The survey questions were first designed for practitioners and trialled on a first ‘wave’ set of 54 local professionals from clinical, educational and policy sectors recruited through professional contacts in two neighbouring regions of Wales (UK), in order to identify potential problems. Concurrent with this initial trial of the survey, a separate sample of eight local autism professionals from teaching, occupational therapy, speech and language therapy, care work and educational psychology professions were recruited through professional contacts to take part in 40 minute telephone/face-to-face interviews using a semi-structured, open-ended interview format. The interviews focused on the topics of evidence-based practice, research colleagues, and collaboration. Responses from these interviews revealed broad themes that were consistent with the online survey questions and response options. The survey was then distributed to the researcher group in addition to the geographically wider practitioner community without alterations. The survey was written and distributed only in English.

The data for the main survey were collected via Google Survey over a period of three weeks in August 2013. The online survey was also sent to UK professionals and two international email lists made up of both practitioners and researchers who attended face-to-face or online professional conferences. Consistent with previous online surveys of this type (e.g. Pellicano et al., 2014a, 2014b), a snowball method of sampling was used. The link was shared extensively via national and international email contact lists and social media, and recipients were encouraged to forward it to colleagues, resulting in a ‘cascade’ distribution. Emails were sent out three times inviting people to respond. The survey was shared on Twitter and Facebook weekly. The written introduction to the survey explained that the questions formed part of the planning and design stage for a new knowledge hub initiative aiming to improve connections between autism researchers and non-academic professionals, and that the survey aimed to compare the needs and views of different professional groups. Ethical approval was obtained from the University’s School of Psychology Ethics Committee. All participants gave informed consent on the first online page of the questionnaire prior to participating.

Participants were first asked to indicate if they were a researcher or a professional working in practice or policy. Both groups were asked about the methods they use to access information: “*At the moment, how do you keep up to date with current information in the area of autism?*” Respondents were asked to select their top three options out of a possible ten (see Fig. 1 for summarized response options). In a separate question, respondents were asked to identify methods that they perceived would be beneficial for increasing research access and research knowledge (see Fig. 2 for response options). Non-academic

¹ Due to an oversight this question was not asked to members of the practitioner group.

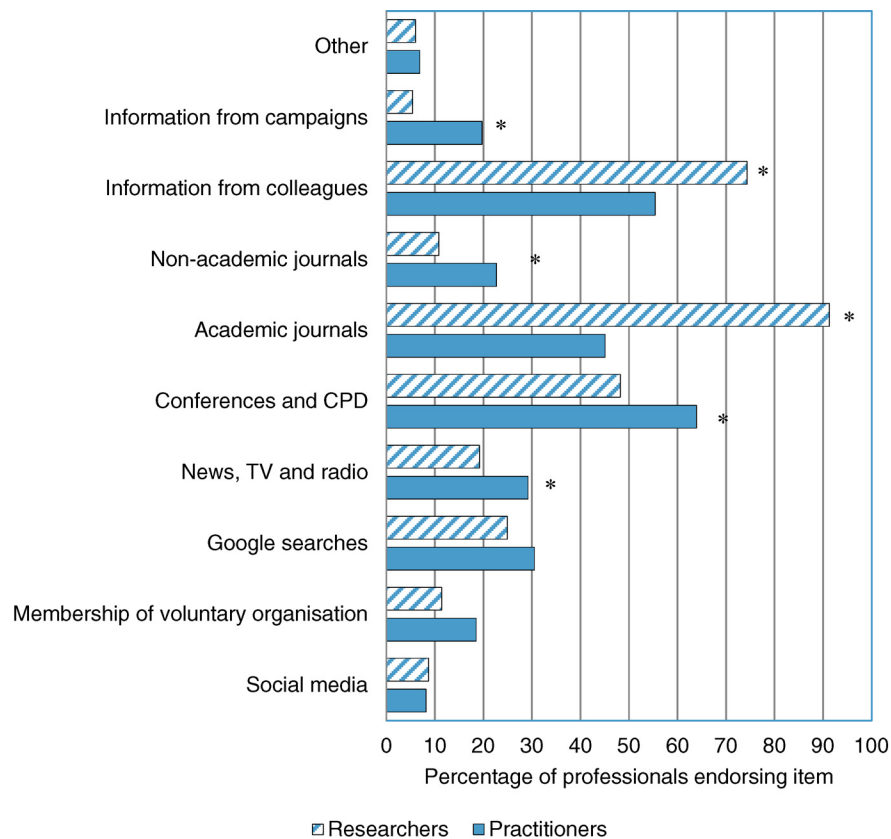


Fig. 1. Percentage of practitioners and researchers selecting each type of method as one they use to keep up to date with current information. CPD = Continuing Professional Development. *denotes a significant group difference ($p < .005$ following Bonferroni correction for multiple comparisons).

professionals were asked “Of the options below, which would help you benefit most from research knowledge and evidence in your specialist area of autism?” Respondents were asked to select their top three options out of a possible nine. The researcher version of the questionnaire asked a similar question, which aimed to elicit researchers’ views of what would help most to promote engagement, research awareness and knowledge translation in practice and policy communities: “The [online initiative] aims to engage researchers with non-academic professionals, promote awareness of research and create opportunities to translate research knowledge. Which options below do you think would help achieve this aim? Tick your top three”. The identical response options for both groups are shown in Fig. 2. Both questions included an ‘other’ option. Finally, both groups were also asked about their level of engagement with research or non-research professionals: either “As a practitioner or working in policy in autism, do you currently engage with researchers?” or “As a researcher in autism, do you currently engage with practitioners or those working in policy?” To reduce the potential carry-over effect of responses, the questionnaire design presented the following fixed order: (1) methods for improving research knowledge question, (2) methods for updating of current information question, (3) engagement with the other professional group question.

3. Results

3.1. Updating of current information

Each participant was asked to select their three preferred methods of keeping up to date with current information. Six participants, all researchers, did not endorse any items and were excluded. Of the remaining participants, 233 (89%) practitioners and 336 (81%) researchers selected three options. The distribution of choices for the sample selecting three options is shown in Fig. 1.

Two-by-two Chi square analyses compared group differences for each option, with alpha level set at .005 following Bonferroni correction for multiple comparisons. The following information options were selected significantly more frequently by practitioners than researchers: *campaigns*: $\chi^2_{(1)} = 28.52$, $p < .001$ (20% practitioners, 5% researchers); *non-academic journals*: $\chi^2_{(1)} = 15.10$, $p < .001$ (23% practitioners, 11% researchers); *conferences and Continuing Professional Development (CPD)*: $\chi^2_{(1)} = 14.26$, $p < .001$ (64% practitioners, 48% researchers); *newspapers, online news, TV and radio*: $\chi^2_{(1)} = 7.93$, $p = .005$ (29% practitioners, 19% researchers). In contrast, the following options were selected more frequently by

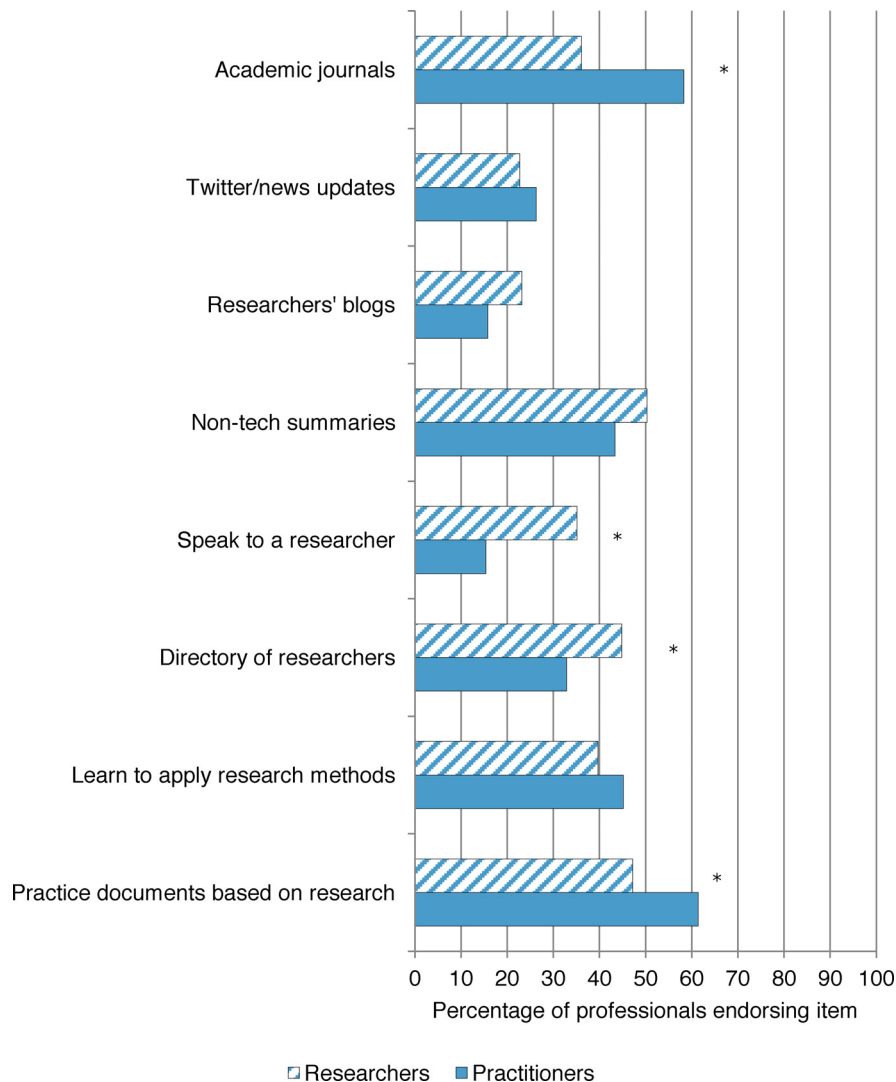


Fig. 2. Percentage of practitioners and researchers selecting each type of method as beneficial for increasing research knowledge. *denotes a significant group difference ($p < .005$ following Bonferroni correction for multiple comparisons).

researchers than practitioners; *colleagues*: $\chi^2_{(1)} = 20.94$, $p < .001$ (74% researchers, 55% practitioners); *academic journals*: $\chi^2_{(1)} = 142.77$, $p < .001$ (91% researchers, 45% practitioners). The top three options for each group overlapped, although the order of these differed. The most frequently endorsed option for practitioners was *conferences/CPD courses* (64%) followed by *colleagues* (55%) and *academic journals* (45%), while the most frequently endorsed option for researchers was *academic journals* (91%), followed by *colleagues* (74%) and *conferences* (48%). No group differences ($p > .005$) were found for *Google searches* (31% practitioners, 25% researchers), *membership of voluntary organizations* (19% practitioners, 11% researchers), or *social media* (8% practitioners, 9% researchers) and there was no difference in the “other” category (7% practitioners, 6% researchers). Analyses were re-run including participants who failed to endorse all three choices. Results were identical with the exception of one additional group difference for *voluntary organizations*, which was favoured by practitioners ($\chi^2_{(1)} = 9.28$, $p < .002$; 18% practitioners, 10% researchers).

3.2. Increasing research knowledge

Each participant was asked to select the three methods that they considered most beneficial for increasing research access and knowledge (their top three). The question to practitioners asked which methods would most benefit their own research knowledge and evidence in their specialist area of autism (top three choices), while the question to researchers asked which would help promote research awareness and opportunities for knowledge translation in non-academic professionals. Eleven respondents (all of whom were researchers) did not endorse any items and were excluded. Of the

Table 1

Percentage of practitioners reporting current engagement with researchers, and percentage of researchers reporting current engagement with practitioners.

Professional group	Level of engagement reported			
	A lot	Quite a bit	Occasionally	Not at all
Practitioners	12 (4.7%)	41 (16.2%)	131 (51.8%)	69 (27.3%)
Researcher	61 (14.5%)	176 (41.8%)	98 (23.3%)	86 (20.4%)

remaining participants 228 practitioners (87%) and 389 researchers (95%) endorsed three choices. Fig. 2 compares the choices of the respondents who selected three choices. As above, 2×2 Chi square analyses were computed to compare groups for each option, with alpha level set at .006 using Bonferroni adjustment for multiple comparisons.

The following options were selected significantly more frequently by practitioners than researchers: *connect directly to research articles to read original research*: $\chi^2_{(1)} = 29.09$, $p < .001$ (58% practitioners, 36% researchers); *access to practice based articles that have been based on reliable research*: $\chi^2_{(1)} = 11.47$, $p < .001$ (61% practitioners, 47% researchers). In contrast, the following options were selected more frequently by researchers: *speak to a researcher to ask questions about specific research findings*: $\chi^2_{(1)} = 27.59$, $p < .001$ (35% researchers, 15% practitioners); *access a large directory of researchers to find out about research and/or develop opportunities for collaborating*: $\chi^2_{(1)} = 8.72$, $p < .005$ (45% researchers, 33% practitioners). The most frequently endorsed option for practitioners was *access to practice-based articles based on research* (61%), followed by *connect directly to research articles* (58%) and then *learn to apply evidence-based research methods* (45%). For researchers the most frequently endorsed option was *non-technical one-page lay summaries* (50%), followed by *access to practice-based articles based on research* (47%) and *access a large directory of researchers* (45%). No group differences were found for *researchers' blogs* (16% practitioners, 23% researchers), *non-technical one-page summaries* (43% practitioners, 50% researchers), *Twitter or news updates* (26% practitioners, 23% researchers) or *apply evidence-based research methods to use in practice and policy* (45% practitioners, 40% researchers). Analyses were re-run to include all those participants who did not endorse the full three choices; the results were identical.

3.3. Engagement with the other professional group

Eight practitioners and one researcher did not respond to this question. Table 1 shows the current level of inter-group engagement reported by the remaining practitioners ($n = 253$) and researchers ($n = 421$). Researchers reported significantly higher levels of engagement with practitioners than practitioners reported for their level of engagement with researchers ($\chi^2_{(3)} = 87.03$, $p < 0.001$); the majority of researchers (56.3%) indicated that they had either “a lot” or “quite a bit” of engagement with practitioners, while the majority of practitioners (79.1%) reported that they only “occasionally” had engagement with researchers, if at all.

4. Discussion

This study presents the first evidence of similarities and differences between researchers and practitioners working in autism in their preferred methods for acquiring up-to-date information and gaining research knowledge. The focus on a professional practitioner research-user group in the current study specifically aimed to facilitate greater understanding of the incompatibility in preferred methods used by researchers and professional practitioners. By identifying gaps in the way that researchers communicate research evidence it may be possible to highlight potential targets for evidence-based approaches in clinical, educational and policy-based practice.

Multi-dimensional approaches to knowledge translation (Kitson et al., 1998; Rycroft-Malone et al., 2004) have emphasized the importance of the nature and accessibility of the research evidence to be translated. In the current study we examined the evidence sources that practitioners prefer to use when updating their knowledge and the methods that they consider would help them benefit from research knowledge and evidence. Previous work on knowledge translation in areas of health and education indicates that practitioners can be resistant to learning about and accepting research evidence (Parsons et al., 2013; Russell, Greenhalgh, Boynton, & Rigby, 2004; Rycroft-Malone et al., 2004), and indicate preferences for accessible, practitioner-relevant and non-technical sources of evidence information (Graham, Tetroe, & Gagnon, 2013). Specific work in the area of autism has also emphasized practitioners' priorities for accessing practitioner-oriented methods in the area of intervention (Reichow et al., 2008).

When both researchers and practitioners were asked about how they keep up to date with current information, their responses showed that the preferred current sources of information for practitioners were conferences and continuing professional development (CPD). There was also evidence that practitioners relied more than researchers on publicly accessible sources of knowledge such as news media and campaigns, as well as on non-academic journals. In general, however, more accessible methods of updating current information, such as social media, Google searches and news/TV, were of relatively low priority for practitioners. Researchers differed from practitioners in their methods for keeping up to date with current information due to their highly frequent use of academic journals compared with practitioners. However they were similar in their low priority for social media and other accessible evidence sources.

When researchers and practitioners considered what would be beneficial for increasing their research knowledge, the most notable finding was the high value given by practitioners to original articles from academic journal articles. Another notable difference was that researchers gave higher scores than practitioners to the options relating to direct contact with researchers (*access to researcher directory to find out about research or develop opportunities for collaborating and speak to a researcher*). Finally, both groups were in agreement about their priorities for learning to apply evidence-based research methods and accessing non-technical research summaries, both of which were highly rated. Again, more accessible methods such as social media were of relatively low priority for both groups and showed no difference between the groups. Finally, when asked about level of engagement with the other group, the results for the current study supported Pellicano et al.'s (2014b) earlier finding. We found that practitioners reported relatively lower levels of engagement in comparison to the level of engagement reported by researchers; that is, researchers identified themselves as more highly engaged with the practitioner community than vice versa. One potential explanation for this discrepancy could be the perceived impact of engagement in the two fields; while researchers may more directly perceive the benefits of involving the practitioner community in designing and conducting research, the outcome of research and the implications for practice may be felt only over a longer time-frame. Practitioners may, therefore, feel less engaged by the research community as the impacts of any involvement may be less immediately tangible. Alternatively, this discrepancy could reflect differences in the perceived value of research evidence and practitioner expertise; if practitioners felt that research evidence was valued more highly than evidence coming from their own knowledge and expertise, they may be less likely to engage with the research community. The questionnaire in the current study did not allow us to explore these issues, but these findings highlight that an important area for further investigation will be to clarify differences in the definition and value of what counts as evidence and to facilitate more reciprocal recognition of both research and practitioner expertise.

Taking the results from all three questions together, the findings show a pattern in which researchers and practitioners not only have mismatched perceptions of engagement with each other, but also have different views about how to best facilitate the communication and sharing of research knowledge. For practitioners, direct access to original research articles in academic journals is prioritized very highly as a beneficial method for increasing research knowledge, while access to researchers themselves (speaking to a researcher or accessing a directory of researchers) is prioritized more highly by researchers. There are also important similarities between the two groups; for example, both assign relatively low ratings to social media as a mechanism for accessing and gaining research knowledge. Moreover, the top three options for updating current information in both groups were conferences or CPD, academic journals, and colleagues. Although the order of these options differed in the two groups, this overlap suggests that practitioners and researchers use the same mechanisms to update their current research knowledge, with a desire by the practitioner group in this study to access original research articles from academic journals.

These findings have important implications for the effective translation of research knowledge, indicating the ways in which research evidence may best be made accessible to meet the preferences of practitioners. The findings also have some limitations and raise issues for both for the design of future studies and for initiatives directed at researcher-practitioner engagement. With respect to limitations, the two samples were not completely representative. The practitioner group, who had responded to a request to complete an online survey may already have been motivated towards research. Moreover, as recruitment included the use of email contact lists, some of which originated from conference delegate lists, the sample may have had an interest in research to some degree. Similarly, researchers who completed the survey were likely to have an interest in communicating research findings beyond the academic community. It could also be argued that as respondents were aware that the purpose of the survey was to inform the development of a new knowledge hub aiming to improve connections between autism researchers and practitioners, their responses may have been biased, reflecting a desire to demonstrate good practice both in terms of accessing research information and engaging with other communities. This potential bias highlights the limitations of self-report measures, which are dependent not only on the honesty of respondents but also on the accuracy of their evaluation of their own behaviour.

A further potential limitation of the design of the survey could be that the response options for all three questions were presented as a list and in a fixed order. However, this did not appear to affect the results, as when asked which methods would be most beneficial in increasing access to research knowledge, the top three for both groups included options from the second half of the list. Moreover, some aspects of the question wording might suggest that caution should be applied when interpreting some of the responses options. For example, the relevant question posed to the researcher and non-academic professional groups regarding methods beneficial for increasing knowledge, differed slightly; however, this difference was necessary, as the aim in the current study was specifically to identify methods that would be beneficial for increasing practitioners' research access and knowledge. Finally, some missing demographic information limited the potential for a fuller interpretation of the results. Although researchers were asked to indicate their current status as either early or established career researcher (or other), thus giving some indication of their level of experience, the practitioner group were not asked about their level of experience. Nor was either group asked to indicate their age or gender. It seems likely that some or all of these characteristics could potentially influence respondents' perceptions and use of social media and technology. However, there were no significant differences in how the research and practitioner groups rated their use, or the perceived benefits, of social media and technology, suggesting that if there were differences in age, gender, or experience between the two groups, these differences did not unduly affect the findings.

The relatively low priority placed on social media and other more accessible methods, however, is perhaps surprising given the prevalence of blogs and twitter postings from well-established researchers, research organisations, and charities.

Moreover, the survey was advertised using e-mail and social media, and as such, some role for social media could have been expected. The reported lack of importance placed on social media and Google searches may have reflected recognition that some media sources are not necessarily direct scientific sources; that is, they may be brief, simplified interpretations of the evidence. This issue could be further explored by more specifically probing dependence on different types of social media, distinguishing between postings from credible research organisations or charities (e.g. the National Institute for Health and Care Excellence) and more general postings or comments on research findings in the mainstream media. In their ethnographic study of professionals working within Public Health Units, [Lemay and Sá \(2014\)](#) found that practitioners primarily relied on academic literature accessed through journals or professional training and communications to update their research knowledge. The group of professionals were actively engaged in using research to develop and implement evidence-based practice. Given the recruitment of a research-user group in the current study that was similarly focused on professional practice, a similar priority placed on more formal sources of research information was perhaps to be expected. Finally, it might be argued that asking participants to indicate only three sources of information in the current questionnaire may have underestimated the role of more accessible sources such as social media. However, by constraining participants' choice in this way, priorities were more clearly identified. The results from the current study indicate that more accessible methods such as social media were not given high priority by either group, suggesting that other sources were considered more informative or reliable. Further research is needed to identify the role played of social media in knowledge acquisition in this field.

Other issues may be addressed in the design of future studies. For example, the design of the questionnaire did not allow for identification of differences between distinct practitioner groups working in either health or education practice who might hold different views. Further exploration of the preferences and priorities of the groups would also be helpful. For example, when selecting the top three options that would be beneficial for facilitating access to research knowledge, ranking of preferences would provide richer data. Another important future direction for further research is in understanding how both researchers and practitioners assess the quality of the research that they access. Improving practitioners' confidence in their evaluation of the available evidence could empower them to apply the findings from research in their practice.

Practitioners' preferences regarding access to academic journals were a key finding. It is possible that very recent policy changes in open access publishing of academic research articles may be already reducing barriers to knowledge access. However, practitioners' needs in this respect should, be continually reviewed and we recommend that researchers are attentive to the importance of making their published findings easily accessible for practitioner use. Another way to address the desire to access and use research is through a scientific training 'master-class' method that has proved to be effective for increasing research competencies in public health professionals ([Jansen & Hoeijmakers, 2013](#)), which also gives opportunity for direct contact and engagement. These 'master-classes' could be further extended to include training in the application of evidence-based practice, which was one of the top three options selected by practitioners as being beneficial in translating research knowledge.

Previous commentary on the gap between research knowledge and practice in autism emphasizes the need to build new research evidence based on collaboration between research and non-research professionals ([Parsons et al., 2013](#)), a view that is also consistent with interactive models of knowledge translation in health sectors ([Jacobson et al., 2003](#)). Research evidence in the area of autism, however, indicates that research-users, including practitioners, family members and adults with autism, may experience low levels of engagement with researchers ([Pellicano et al., 2014b](#)).

Differences in reported experiences of engagement by researchers and practitioner groups reported in this study point to the need to provide direct face-to-face contact and real world shared activities to improve mutual understanding with stakeholders. [Mottron \(2011\)](#) has highlighted the considerable insight that can be gained by including individuals with autism in all aspects of the research process – including the design, implementation, and interpretation of studies. Similar engagement between academic researchers and practitioners in clinical, educational and social care professions is also vital. We recommend that opportunities are increased for informal contact and equitable collaboration in the design of research studies, from the beginning of the research process ([Parsons et al., 2013](#)). In so doing, it will be possible to build stronger communication channels, more trusting relationships and a shared interpretation of research with practice professionals and other users ([Milton, 2014; Parsons et al., 2013](#)).

This study investigated just one aspect of the complex pattern of knowledge sharing relevant for effective translation of research evidence into practice. Its focus was to explore views about access to research information and levels of engagement experienced. As such it might be considered as the tip of an iceberg, with a number of other barriers to evidence based practice still unexplored. The translation of research evidence into practice is a complex process and the relationship between researchers and research-users is not simply one of knowledge provider and user. Models that focus on the interactive nature of knowledge sharing between members of different academic and non-academic communities, stress the importance of active engagement between members. Yet it is important to acknowledge the notable lack of work in this area and the need to build initial foundations for such models. Building these foundations may first require the study of knowledge translation from researcher to researcher-user, and then trace the complementary influence of research-user expertise on research as a result of engagement and collaboration over time. Furthermore, as [Mitton, Adair, McKenzie, Patton, and Waye-Perry \(2007\)](#) points out, there is remarkably little formal evaluation of the actual effectiveness of the application of knowledge translation strategies in context. We recommend a new focus within basic research to ensure better understanding of "what works for whom and in what circumstances".

The results from the current study support a recommendation to provide access to a range of research-based information in the development of an online knowledge platform, from non-technical summaries to access to original research articles. Our findings also point to the need for improved engagement and communication, and continual review of user needs and the barriers to research implementation in practice. However, it is essential that future work should more fully characterize a range of potential factors that hinder knowledge sharing and translation in order to best integrate research and practice in autism.

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