



## Review

# A scoping review examining the availability of dialogue-based resources to support healthcare providers engagement with vaccine hesitant individuals



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## ABSTRACT

**Background:** There is growing attention around the need to improve the confidence and skills of healthcare providers to assist them in completing the complex task of communicating to vaccine hesitant parents and other individuals. While interventions have been developed and evaluated in a research setting, there is uncertainty regarding the public availability. This study aimed to examine the current landscape regarding the availability of online dialogue-based interventions which aim to support vaccination conversations.

**Methods:** A scoping review was undertaken to identify and appraise the availability and accessibility of dialogue-based interventions. A dialogue-based intervention was defined as a strategy aiming to improve an individual's confidence and communication skills to engage with and respond to vaccine hesitant individuals. Two approaches were utilised to identify relevant interventions and resources. Firstly, the European Centre for Disease Prevention and Control Catalogue of Interventions was assessed to identify interventions that met the definition. Secondly, a Google search (in English only) was conducted using key words, that reflected the strategy that healthcare providers may use to identify resources.

**Results:** We identified a total of 31 dialogue-based interventions, of which 29 were reviewed. The interventions were all text based and instructional in nature. Twenty-two were suitable for healthcare providers, as well as non-clinical immunisation spokespersons to use. Of issue, was that in many instances it was common to find the resource located on the fifth to tenth page of search entries, and usually disguised under seemingly non-descript and nonspecific titles. Lastly, not all resources were available for free and not all could be accessed directly from the site.

**Conclusions:** Findings suggest that while there have been numerous interventions developed to support healthcare providers to communicate with vaccine hesitant parents/individuals, there are fundamental issues with accessing the materials in a timely and convenient way. Having a central repository or website (which links to the interventions) would not only assist healthcare providers to have an improved comprehension of the different interventions available but also would theoretically increase the utilisation by providers.

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**1. Introduction**

While most individuals accept vaccination for themselves or their children, there are those who persistently decline to receive any vaccines or they purposefully select to receive some, decline or delay others. When encountering a parent or individual who is opposed or hesitant to vaccination, it can result in consultations that can be complex, lengthy and ultimately unproductive [1]. While evidence suggests that vaccine information or education delivered by healthcare providers can improve vaccine uptake [2], some communication approaches can actually negatively impact an individual’s acceptance of immunisation [3]. At one end of the spectrum, studies have found that parents can feel confused, disrespected, or mistrustful and less likely to return for their child’s next vaccination appointment, due to being on the receiving end of poor provider communication [1,4]. Conversely, communication that is respectful and builds trust can assist hesitant parents to work through their concerns [5,6].

It is now well accepted that medical communication skills are integral to the curricula of medical and nursing education. Previous attempts have even been made to list the key communication challenges faced by doctors in practice which includes: talking to a patient/family about a mistake, giving bad news; detecting and responding to domestic violence; and ethical dilemmas [7]. While communicating to a vaccine hesitant individual was explicitly identified, given the potential stresses encountered from both the healthcare provider and the patient/patient’s family and the potential implications of bad communication, it probably should make the list. The problem is that in the busy medical curricula, it is highly unlikely that training will cover all the required topics and so there needs to ongoing opportunities (continuing professional development) for capacity building. This need is further supported by the observation that the communication skills of doctors tend to decline over time, as they lose their focus on holistic patient care [8]. By improving the communication skills of the provider this should contribute to improvements in trust and rapport between the patient and the provider, leading to more satisfying consultations [9]. It is now well established that information regarding the benefits of vaccination should be communicated using unambiguous, easily understood language using a guiding style [1,10,11]. However, implementing the correct communication plan as a provider can be challenging. In hospital settings, discussing the benefits and need for vaccination is not necessarily commonplace, and so hospital specialists may not necessarily have the skills or knowledge to proceed [12,13]. Even for experienced primary care providers with years of practice, tackling these conversations can be daunting at times based on anecdotal feedback received from those in primary care. Providers in all settings could benefit from resources that they could refer to during the consul-

tation, or from communication training – though this requires an investment of time.

The use of interventions or dialogue-based communication tools may help foster and facilitate an open discussion about vaccination with parents or individuals who are vaccine hesitant. These tools may include adaptable frameworks to allow tailoring of information, decision aids or delivery techniques like motivational interviewing, where individuals are provided with a guiding style to make good health-based decisions [1]. However, communication interventions are only effective if physicians can easily access and utilise them. In 2017, the European Centre for Disease Prevention and Control released a technical report which aimed to catalogue existing interventions which address vaccine hesitancy. While the report identifies the different interventions, it does not describe whether the intervention has been translated into a product accessible by healthcare providers. Previous studies have identified, described and assessed the potential effectiveness of interventions [14,15], however we currently do not have any understanding about what strategies are publicly and freely available. Therefore, the aim of this study was to undertake a scoping review to explore the public availability of dialogue-based resources to support the vaccine provider to engage with vaccine hesitant caregivers or individuals.

**2. Methods**

*2.1. Defining the intervention*

While there have been reviews of the literature focused on the effectiveness of interventions for informing or educating people about vaccination [2], the intention of this paper was to explore downstream in the translation pathway, hence a scoping review approach was chosen. When a topic has not yet been extensively reviewed or is complex or heterogeneous in nature, a scope review can be useful [16]. They are used when the extent, range and/or nature of the activity in a topic area has not been well examined, as they can efficiently identify research gaps [17].

*2.2. Identifying appropriate interventions: inclusion/exclusion criteria*

We included interventions/tools that focused at training and/or supporting different communication approaches between healthcare providers and known or potential vaccine hesitant individuals. We focused on interpersonal communication skills or techniques and interventions that have been developed in the last fifteen years (From 2003 onwards). For example, interventions which provided tips on various phrases/communication cues and communication techniques to use were included whilst broad, nonspecific

information about the importance of communication with vaccine hesitant patients was excluded. To be included, interventions had to offer direct assistance or tips to healthcare providers around communicating with vaccine hesitant individuals and families. Interventions which could not be traced to a source were excluded, e.g. resources not clearly affiliated with any organisation or individual.

### 2.3. Searching

Several approaches were utilised to identify relevant interventions. Firstly, the European Centre for Disease Prevention and Control Catalogue of interventions was assessed to identify interventions that met the definition [18]. The catalogue included interventions and strategies that specifically addressed vaccine hesitancy. Both evaluated and non-evaluated interventions that have shown promise in practice were included in the catalogue. The interventions varied from large immunisation support programs such as Tailoring immunization programmes (TIP) [19] through to specific examples of dialogues between healthcare provider and patient. In this study we focused on the interventions which were classified as dialogue based. For each dialogue-based intervention, an attempt was made to identify any associated published journal papers focused on the development, testing, evaluation or implementation of the intervention through back searching of the title of the intervention and via a search using the author details (if they were available). We also attempted to identify whether the intervention elements were available on the internet (free or by paid subscription) by means of key phrase search.

In addition to identifying interventions from the ECDC catalogue, we searched all major databases (The Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE and LILACS), as well as Google, and Google Scholar. Broad and varied MESH terms and phrases were developed to achieve the goal of locating dialogue-based interventions or tools. The following MESH terms/phrases were used in six different combinations: communication, intervention, vaccine hesitancy, tool, health professional, vaccination tool and vaccination/immunisation/immunization. These words were selected as it was theorised that healthcare providers may utilise similar words if they were attempting to locate resources for their professional use. On average, both the database search and internet search strategy resulted in over 3615 results, therefore only the first 10 pages of each key phrase were evaluated. The same approach was used for each platform.

Lastly, we undertook a targeted review of the websites of health departments and disease control centres in UK, Canada, Australia and USA. These included portals through the UK Department of Health and Social Care, Health Canada, the Australian Department of Health and the US Centre for Disease Control and Prevention. All interventions that were deemed relevant (criteria included below) were assessed via the audit tool constructed for this analysis (to ensure consistency in extracting information) and patterns/gaps relating to the nature of the communication interventions were established. All identified interventions were also viewed on a mobile device to assess accessibility in scenarios where no computer is available.

### 2.4. Data collection

We designed an audit tool to extract information about each of the dialogue-based interventions found which included: (1) main components of the intervention (aim, what the training program consisted of, delivery mechanisms); (2) what elements were focused on (i.e. responding to vaccine hesitancy in general, responding to misinformation or safety issues); (3) what languages the intervention was available in; (4) whether the intervention was

targeted at certain vaccines or not; (5) whether the intervention had received funding; (6) whether there was evidence to support its effectiveness provided; (7) whether it was easily locatable and accessible and whether it was free to access (via a website) or whether access was via a paid subscription; (8) whether guidance was provided to providers about how to utilise the intervention, and (9) whether there were any other factors impacting on the use of the system (i.e. immunisation providers needing to register with a system prior to use, whether the information could be accessed clearly via a mobile phone). Each of the identified resources were comprehensively reviewed and the data extracted by JK. Issues and uncertainties were discussed with HS prior to the extracted information being tabulated and descriptively analysed. Direct comparison or meta-analysis of study data was not feasible, as the relevant studies did not employ a uniform methodology or study design.

## 3. Results

Based on our search we identified a total of 32 dialogue-based interventions. However, three were presented online as PowerPoint presentations only, and were therefore excluded as we were unable to trace them back to any credible source. Of the 29 included interventions, 13 had been developed in the last five years. Ten were only available as a journal paper, so we were unable to examine the intervention itself. While most were applicable to all vaccines across the life span, four (13, 14, 19 and 24) were focused on certain population groups or vaccines. Examples included interventions regarding vaccinations of a newborn, or interventions aimed at improving communication towards teenagers who are hesitant about the HPV vaccination. When it came to the resources available on websites, it was not always possible to identify the actual author or developer of the intervention. In addition, the websites often had difficult or outdated user interfaces. Such elements made the user experience inconducive to learning and therefore, retention of the information that was available. Table 1 outlines the interventions identified.

### 3.1. Content

The included interventions were all text-based and instructional in nature. Interventions predominantly outlined sympathetic and empathetic modes of communication and dialogue to break down the various stances that patients take as part of their vaccine hesitancy. For example, intervention 20 outlines a participatory approach and includes a databank of questions to ask patients and prepared statements to help with responses. The approach aims to support the healthcare provider to work with the patient, rather than for the patient, to reach a positive and beneficial outcome. Participatory techniques covered by these interventions included active listening, positive reinforcement, education, acts of sympathy, reasoning and motivational interviewing. However, the problem on these websites is that while the instructional information/resources are included, there has been a failure to provide action cues/signposts to guide providers on how to maximise the usefulness of the resources. For example, we came across downloadable PowerPoint slides which appeared to come from a face-to-face training program and had not been converted into a tool for self-directed online learning.

Five interventions (3, 7, 9, 15 and 26) provided example dialogue scripts and a list of useful phrases which could be employed by the healthcare provider for a range of scenarios that address many levels and types of vaccine hesitancy. Around half focused on encouraging and instructing healthcare providers to tactfully challenge the vaccine hesitant person by asking thoughtful and

**Table 1**  
Interventions aimed at supporting immunisation providers.

Author and name of intervention	Reference no	Year	Mode	Details of intervention with link to source/development evidence	Payment or training required
Henrickson et al. Ask, Acknowledge, Advise	1	2014	Verbally written notes via training session	A didactic presentation for vaccine providers to develop mechanisms of encouraging questions from parents, skills to demonstrate respect to patients and their concerns and advising/recommending vaccination. Printed material, monthly newsletters and a link to a website are provided.	Training required
Temoka E. Becoming a vaccine champion	2	2013	Journal Article	A series of steps to aid doctors in providing assurance to parents about the safety of vaccines.	No
Jacobson RM. C.A.S.E. (Corroborate, About me, Science, Explain/Advice) Approach	3	2014	Journal Article	A strategy with steps aimed to help providers communicate with parents. It includes example dialogues and useful phrases and scenarios.	No
CD- Rom-based tutorial	4	NA	CD-ROM	Information for practitioners to draw upon when communicating with vaccine hesitant individuals. Levi BH. Addressing parents' concerns about childhood immunisations: a tutorial for primary care providers. <i>Pediatrics</i> . 2007; 120(1): 18–26. Available from: <a href="http://www.ncbi.nlm.nih.gov/pubmed/17606557">http://www.ncbi.nlm.nih.gov/pubmed/17606557</a>	Fee required
Mayne S et al. Electronic medical record linked clinical decision support	5	2012	Computer Program	A computerised tool linked to electronic medical records to help communicate findings and framings of reminders for vaccinations	Training and fee required
Danchin M et al. Framework for communicating with vaccine hesitant parents	6	2014	Journal Article and PDF	A list of communication/interactive based suggestions for clinicians to consider when discussion immunisation with parents.	No
Cinzia G et al. Fifty-eight responses to anti-vaccination questions: A handbook against misinformation	7	2014	PDF	A handbook of popular questions with set answers for clinicians to use with vaccine hesitant people.	No
Gagneur, A. PROMOVAC: motivational interviewing session a birth increases vaccination acceptance and uptake	8	2016	Journal Article	A set of motivational interviewing techniques that may be applied within nurseries in order to promote vaccination.	Training Required
Leask J et al. SARAH: an approach to vaccine communication in primary care – strategies to increase vaccine acceptance	9	2016	Website	An intervention which includes dialogue examples, communication tips and conversation vignettes. National Centre for Immunisation Research and Surveillance. The Sarah Project. <a href="http://www.ncirs.edu.au/research/social-research/sarah-project/">10 http://www.ncirs.edu.au/research/social-research/sarah-project/</a>	No
Pisani, A. ECBT (Every Child by Two) – increasing vaccine confidence using evidence based research	10	2017	Website	A comprehensive set of tips and tools to use in communication which provide maximum engagement of vaccine hesitant parents. Every Child By Two. <a href="http://www.ecbt.org/">http://www.ecbt.org/</a>	No
Opel, D. Screening for Hesitancy to Optimize Talk (SHOT)	11	2016	Website	A questionnaire for doctors to utilise in addressing and helping parents identify potential patient non understanding regarding their own vaccine hesitancy. Screening for Hesitancy to Optimize Talk. <a href="https://clinicaltrials.gov/show/nct02708745">https://clinicaltrials.gov/show/nct02708745</a>	No
Leask, J et al. Addressing Vaccine Hesitancy (AVH)	12	2012	Journal Article	Observations which aim to encourage questions and employ a guiding rather than directing style of recommendation.	No
Szilagy, PG. STOP-HPV communication intervention	13	2018	Journal Article	A set of guidelines who assist in practitioners communicating with individuals unsure about the HPV vaccination	Training Required
Dempsey, AF et al. 5-component health care professional HPV vaccine communication intervention	14	2018	Journal Article	A summary of five different aspects of communication to improve upon to maximise engagement and success of engagement with HPV vaccine hesitant people.	Training Required
Healy, CM et al. “How to Communicate With Vaccine-Hesitant Parents” Supplementary Article	15	2011	Journal Article	Specific advice regarding communication techniques such as personal anecdotes and visual images to aid in conversation with vaccine-hesitant people	No
Williams, SE et al. Vaccine Educational Intervention	16	2013	Journal Article	Video assistance and information as part of a multifaceted communication methodology aimed to engage and educate vaccine hesitancy.	Fee Required
Morhardt, T et al. Vaccine Curriculum	17	2016	Physical Training	Training with simulated patient encounters, self-assessment and scoring and feedback aimed to help health professional identify and more comfortably converse with vaccine hesitant patients.	Training Required
Bechini. A et al. The ESCULAPIO Project	18	2017	Website	Elaborate strategies and actions of multi-purpose health communication with any patient regarding vaccination uptake.	No
Dahlqvist, J et al. Strategy for child care nurses when meeting with vaccine hesitant parents	19	2014	Journal Article	An outline of various communication based strategies for nurses to employ when speaking to newborn parents about vaccinations.	No
Favin, F et al. Health Worker training module: Conversations with hesitant caregivers	20	2014	Website	Various training modules for vaccine providers, including a databank of questions to ask patients, pre prepared statements and psychological elements of conversation to consider. Found at: <a href="http://www.who.int/immunization/programmes_systems/vaccine_hesitancy/en/">http://www.who.int/immunization/programmes_systems/vaccine_hesitancy/en/</a>	No

(continued on next page)

**Table 1** (continued)

Author and name of intervention	Reference no	Year	Mode	Details of intervention with link to source/development evidence	Payment or training required
Developer not Disclosed. Communication Aids for health professionals	21	2018	Website	A flip chart to be used by health professionals with useful commutative tips during conversations with patients. <a href="https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Pages/Communicating-with-Families.aspx">https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Pages/Communicating-with-Families.aspx</a>	No
Danchin, M et al. "Positive Approach to parents" Intervention	22	2014	Website	A wide range of communicative aids including decision aids and communication approaches including not overstating, exploration of receptivity and guiding styles <a href="https://www.racgp.org.au/afp/2014/october/a-positive-approach-to-parents-with-concerns-about-vaccination-for-the-family-physician/">https://www.racgp.org.au/afp/2014/october/a-positive-approach-to-parents-with-concerns-about-vaccination-for-the-family-physician/</a>	No
Mordini, E et al. COMPARE Work Package 10	23	2018	Multimodal	A workshop providing communication based training for health practitioners	Training and Fee Required
Communicating with parents about vaccination: a framework for health professionals	25	2014	Journal Article	A framework for health professionals to follow during communication with vaccine hesitant patients.	No
Oakes, K Motivational Interviewing Intervention	26	2018	PDF	Motivational interviewing techniques to address vaccine hesitancy with HPV vaccines	No
Derban, A et al. Immunization Communication Tool	27	2013	Website	An immunisation reference tool with common questions posed by vaccine hesitant patients with answers. <a href="https://www.simcoemuskokahealth.org/jfy/hpportal/pcpcategories/immunization/immcommunicationtool.aspx">https://www.simcoemuskokahealth.org/jfy/hpportal/pcpcategories/immunization/immcommunicationtool.aspx</a>	No
Developer not disclosed. CIOMS Vaccine Safety Communication Plan	28	2017	PDF	A document to be filled out during conversation with vaccine hesitant people to help quite the practitioner of what is needed for the patient. <a href="https://cioms.ch/wp-content/uploads/2017/06/Template-for-strategic-vaccine-type-form-web.pdf">https://cioms.ch/wp-content/uploads/2017/06/Template-for-strategic-vaccine-type-form-web.pdf</a>	No
Naus, M Improving vaccine uptake: A strategy	29	2015	Website	A manuscript containing a set of instructions and advice on various advantageous methods of communication to employ in communication with vaccine hesitant people. <a href="https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2015-41/ccdr-volume-41-s-3-april-20-2015/ccdr-volume-41-s-3-april-20-2015-1.html">https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2015-41/ccdr-volume-41-s-3-april-20-2015/ccdr-volume-41-s-3-april-20-2015-1.html</a>	No

provoking questions to elicit a response that primes them to accept correct information about vaccines. Lastly, it was determined that over half (58%) of the interventions could also be utilised by non-healthcare professionals (including those within policy/program roles, those who are in leadership positions such as religious leaders/teachers etc).

### 3.2. Mode of delivery

As shown in [Table 1](#), most interventions were presented in the form of websites. 8/29 websites were not functioning correctly when reviewed using a mobile phone. The most time-efficient and clearly presented mode was that of an online PDF document, where individuals could directly select it from the database search page and access the information. As it could also be downloaded, this mode is functional offline, a notable feature in places of inconsistent internet coverage. Several of the interventions (2, 3, 6, 8, 12, 13, 14, 15, 16, 19, 25) were only described in a peer review journal article, where details of the intervention were included as part of the methodology of a study. Lastly one of the interventions was delivered by CD Rom only (4).

### 3.3. Ease of accessibility

Apart from the difficulty of accessing relevant information because of the various modes of delivery, it was common to find valuable resources located on the fifth to tenth page of database or internet search entries, and usually disguised under seemingly non-descript and nonspecific titles. Of the websites reviewed, while half provided access to the relevant information within

30 s of accessing the page, the remainder required visitors to click on links for more detailed information. In some cases, a healthcare provider would need to scroll through the page to identify the correct information and in some instances, without the use of search boxes to assist with narrowing the material. In the case of a healthcare provider preparing for an appointment with a known vaccine hesitant person, there is little chance that they would progress beyond even the first page of a database search [20]. Only four of the 29 (3, 8, 12 and 14, interventions located appeared on the first page of a search entry into a search engine. Finally, 4/29 (4, 5, 16 and 23) interventions required the user to pay a fee to access the resource.

### 3.4. Evidence of evaluation

Only 21% interventions were found to have been evaluated. The effectiveness of the other interventions is yet to be determined. All evaluations were conducted via randomised controlled trials within isolated settings, a nested cohort study and a feasibility study.

## 4. Discussion

In this study, we examined the accessibility of dialogue-based interventions aimed at healthcare providers in addressing the issue of vaccine hesitancy [21]. While none of the identified resources were available in languages other than English, this probably reflects the search strategy utilised rather than the current landscape. However, this issue requires further exploration. Lastly, it is concerning that there are currently interventions publicly

available which are not supported by the literature as being effective in assisting healthcare providers in improving their communication skills with vaccine hesitant parents/patients.

From our study, we found that only four interventions were accessible from the first page of a database search. In most cases, when searching online, there was little in the way of clear headings for healthcare providers to follow. Multiple clicks and additional trawling were required to access the intervention, which equates to time that a busy GP or other healthcare provider likely does not have. There were multiple instances where we only found the evaluation of the intervention, rather than the tool itself. This issue, as well as the difficulty of locating a useful link within the first page of search hits is problematic, as previous studies have found that in 95% of cases, individuals will not proceed beyond the first page of a search made on a database or search engine [20]. In the hypothetical scenario of a GP wanting to undergo self-directed learning (coined: 'informal learning'), in the current landscape, there would be little chance that the individual would reach an intervention that suited their context. This is only amplified by the inconsistent and mostly convoluted modes of delivery that the interventions were packaged in: journal papers, CD ROMs and paid subscriptions [22]. Accessibility of interventions described in peer reviewed journal articles is especially problematic, as providers would be required to firstly search for the article (and possibly pay for access) and then extract the relevant intervention information within the article. Other rarer modalities including the use of a CD ROM is an issue for healthcare providers who require the information immediately without obvious logistical and timing hindrances.

Aside from the issues raised about access, there is also the concern that healthcare providers could feel overwhelmed with trying to tease out the different approaches being put forward. Active listening, positive reinforcement, education, acts of sympathy, reasoning and motivational interviewing are just some of the different techniques currently being promoted as part of curriculum or training interventions. Identifying which strategy (or bundle of strategies) would be more appropriate to the consultation, requires time and motivation on the behalf of the healthcare provider. The development of a consolidated online portal of communication or dialogue-based interventions could help address this identified issue. This compendium of interventions would likely aid in reducing the time required by providers to identify resources as well as support equity as healthcare providers in low resource settings could also have access the resources without having to pay fees. If the use of these interventions is going to be fostered and improved, this portal could include guidance materials around the issue of vaccine hesitancy/acceptance, as well as how to select and implement appropriate interventions. It could even go as far as providing opportunities for knowledge and information exchange about interventions/strategies to foster a community of practice. Such a task would require leadership from an agency to develop and maintain the database, as well as the engagement of healthcare providers in this field to ensure the portal is user friendly and meeting their needs.

Interestingly, there has been little research done to assess the applicability of these interventions for professionals who do not fall in the health care industry, but who maintain a position of importance to the community. Such positions may include teachers/childcare providers, religious leaders and non-clinical public health officials. While many of the interventions located appear to be relevant to non-medically trained stakeholders, more research is needed to identify their potential effectiveness across settings and roles. This is especially important as it has been previously suggested that in order to more effectively address the rising prevalence of vaccine hesitancy, the responsibility needs to be collective, and include other stakeholders in the community [23].

This study had several limitations. Firstly, we were only able to isolate results from six key phrase searches and seven databases in English. While these phrases and databases were selected to reflect common anticipated search strings, other terms/combinations may have yielded different results. Secondly, the study only focused on the information that was available online, and therefore does not capture other forms of training available to healthcare providers such as face to face training. Determining the complete picture of resources of this nature requires further work. In addition, due to the all search entries being in English, it reduced the likelihood of other interventions in different languages from being located. Finally, in determining the applicability of interventions to non-healthcare providers, an element of subjectivity was required to decide. One of the main strengths of this study is that, to the authors best knowledge, it is the first of its kind to assess the accessibility of dialogue-based interventions, as well as their relevance outside the healthcare sphere as opposed to only their effectiveness in general. Despite its limitations, this study has identified various important issues regarding the ability for healthcare providers to access resources that are designed to assist in their communicative ability to reduce the incidence of vaccine hesitancy.

## 5. Conclusion

Healthcare providers need to be able to access relevant and credible resources that can support effective communication and assist providers to adopt approaches that address hesitancy, while also maintaining time efficiency during the clinical consultation. There needs to be emphasis placed on translating immunisation resources and interventions (that are found to be effective), developed in the research setting, into publicly and freely available resources. Lastly, there needs to be a push towards having a central repository that includes links to the evaluated interventions and resources available in English and other languages.

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