International Journal of Multilingualism

ISSN: 1479-0718 (Print) 1747-7530 (Online) Journal homepage: www.tandfonline.com/journals/rmjm20

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To cite this article: Emily Stanford, Maren Eikerling, Olivia Hadjadj & Hélène Delage (2025) Supporting multilingual children with language impairment in a multilingual environment: experience and perspectives from speech and language therapists in Switzerland, International Journal of Multilingualism, 22:2, 630-649, DOI: 10.1080/14790718.2024.2325999

To link to this article: https://doi.org/10.1080/14790718.2024.2325999

Published online: 09 Mar 2024.

INTERNATIONAL JOURNAL OF MULTILINGUALISM
2025, VOL. 22, NO. 2, 630–649
https://doi.org/10.1080/14790718.2024.2325999

Supporting multilingual children with language impairment in a multilingual environment: experience and perspectives from speech and language therapists in Switzerland

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ABSTRACT

This work reports the results of a survey study conducted with French-, German-, and Italian-speaking speech and language therapists (SLTs) in Switzerland. In this survey we asked respondents about their language background, training in multilingual matters, and practices with multilingual patients, as well as their opinions on the current SLT provisions for multilingual children in Switzerland. The main results showed that despite high levels of SLT multilingualism in Switzerland, there is often a mismatch between the additional languages spoken by the SLTs and the heritage languages spoken by their patients. To circumvent the challenges of assessing a multilingual child, SLTs across Switzerland reported using a variety of assessment tools and methods, although therapeutic options are still missing. The results also revealed some differences based on linguistic region, with SLTs working in French-speaking region having the highest number of multilingual caseloads but those working in the German-speaking region receiving the most training on multilingualism. Conclusions drawn are that across Switzerland there is still a need for SLTs to be better trained to work with multilingual children and for suitable tools for assessing and especially treating multilingual patients to be developed. Full results are reported and discussed.

ARTICLE HISTORY
Received 1 April 2022
Accepted 24 February 2024

KEYWORDS
SLT; multilingualism; service provision; Switzerland

Introduction

Switzerland: a plurilingual landscape

Switzerland, with four national languages (German, French, Italian and Romansch) and a large migrant population, is synonymous with multilingualism, making it an intriguing backdrop for investigating level of practitioner training, experience with, and perspectives on multilingual[1] issues within the clinical setting. Switzerland is divided into 26

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linguistically sovereign cantons: 17 German-speaking cantons (where Swiss and Standard German coexist in a diglossic relationship), four French-speaking cantons, one Italian-speaking canton, three French-German bilingual cantons, and one trilingual canton in which Romansch, German and Italian are spoken. These linguistic boundaries are reflected in the organisation of the education system, with the language of instruction being German, French, orItaliandepending on the language region. However, there is a strong focus on maintaining a multilingual ideal. For example, early exposure to a second language (L2) is prioritised, with at least two L2s, typically English and one other national language (e.g. German in the French-speaking region), being introduced into the curriculum from primary school.[2]

Immigration has further enriched Switzerland's linguistic landscape, with its numerous international companies, scientific bodies and political organisations attracting an international workforce. This is especially true for the French-speaking canton of Geneva, which isthe most linguistically diverse of the 26 cantons. Economic immigration has contributed to both societal multilingualism[3] (e.g. by driving English to become a *de facto* Swiss language, Dürmüller, 2013) and individual multilingualism[4] as the number of residents whose main language is not one of the four national languages has tripled since 1990 (FSO, 2019). While most newcomers to Switzerland arrive from neighbouring countries in which one of the national languages is spoken (such as Germany, Italy, or France), according to the FSO (2019), 24% of the population in Switzerland do not speak one of the national languages as a first language (L1), and more than 44% of children living in Switzerland are exposed to multiple languages at home (i.e. at least one heritage language is used in the household). Of the non-national languages spoken in Switzerland, English and Portuguese rank highest, followed closely by Spanish and Albanian (FSO, 2019). Finally, newly revised laws that expedite asylum procedures have further diversified the Swiss linguistic situation, with 54,374 refugees documented as being in various stages of the asylum request process in Switzerland as of 31 October 2021 (State Secretariat for Migration, SEM, 2020a). According to the SEM, the main countries of origin for asylum seekers in Switzerland in 2020 were Eritrea, Afghanistan, and Turkey (SEM, 2020b).

With multilingualism at both the societal and individual level in Switzerland, it is unsurprising that speech and language therapists (SLTs) practising in the country are frequently faced with linguistically diverse patient caseloads. In Switzerland, the provision of SLT services occurs at the cantonal level, although 16 of the 26 cantons have joined an intercantonal agreement (The Swiss Conference of Cantonal Ministers of Education, EDK), with topics such as educational equity, the development of special education pedagogy, and the promotion of bilingualism at the top of the agenda (https://www.edk.ch). Formal SLT training takes place at one of six universities, with, at the time of the study, three of the four German-speaking institutions offering three-year courses only (i.e. a bachelor's degree) and the other three institutions (one German-speaking and two French-speaking) offering five-year courses (i.e. a master's degree). No official SLT training in Italian is offered in the country. Even if the EDK underlines the promotion of bilingualism in Switzerland, it is not easy to know if (and how) formal SLT training includes this dimension.

Roughly 3,000 qualified SLTs currently practice in Switzerland, often in collaboration with publicly or privately run hospitals, schools or other therapeutic clinics. SLT provisions encompass a range of services, including assessment, diagnosis, and delivery of intervention if necessary. Children referred to SLTs for a full language evaluation, which involves

the administration of standardised tests and clinical observations, will have often been screened prior to the assessment phase by an educational or medical professional. The EDK (2014) now recognises a regulated protocol for evaluating the additional language needs of children and adolescents, but the use of canton-specific procedures is also common practice. For a more complete description of SLT policy and practices in Switzerland, see Skoruppa et al. (2019).

Multilingualism and identification of language impairment

While multilingualism does not cause linguistic disorders *per se* and multilingual children are not disproportionately affected by language impairment (Kohnert, 2010), diagnosing a multilingual child with language impairment can be a serious challenge (Paradis et al., 2021). Although the linguistic experience of children with a multilingual background will differ from one child to another, in many cases such children have received less exposure to the community language in early childhood and thus can lack proficiency in this language when they enter school. This leads to a situation in which children with a multilingual background are commonly associated with linguistic underachievement in comparison to their monolingual peers, in particular in vocabulary and syntax (Bonifacci et al., 2016; Scharff Rethfeldt, 2019). Consequently, SLTs are presented with complex clinical scenarios related to differential diagnosis. For example, limited mastery of the mainstream language may lead to performance on language tests (when exclusively norm-referenced for monolinguals) that mimics language impairment, resulting in the misdiagnosis (i.e. overidentification) of a language disorder, such as Developmental Language Disorder (DLD, Crago & Paradis, 2003; Genesee & Paradis, 2004; Gruter, 2003; Håkansson & Nettelbladt, 1993; Paradis et al., 2004; Paradis & Crago, 2000; Tuller et al., 2013). On the other hand, and even more importantly, lack of L2 proficiency may mask a more serious language disorder and lead to missed diagnosis of DLD (also referred to as under-diagnosis/-identification, Genesee & Paradis, 2004; Grimm & Schulz, 2014; Tuller et al., 2013). Either way, misidentification is a costly mistake. Not only are practitioners' resources wasted when, in the case of misdiagnosis, they are asked to provide specific language remediation services to children who do not actually need them, it also 'undermines attempts to evaluate the effectiveness of treatment regimens, to develop risk registries and to establish prognostic indicators' (Redmond et al., 2011, p. 2). Missed diagnosis, on the other hand, is very likely to hinder the child's access to intervention as many SLT services only become available once an official diagnosis of language impairment has been made, and failure to receive early SLT support when a true need is present can have long-lasting developmental, psychological, and social implications. For example, research on children with DLD has shown that early intervention leads to better outcomes in young children (see Cable & Domsch, 2011; Guralnick, 2011; Kong & Carta, 2013).

The advantages of using questionnaires in SLT practice and research

Researchers and practitioners have become increasingly aware of (i) the lack of appropriate assessment tools for multilingual children, (ii) the underrepresentation of multilingual children in research on language impairment and (iii) the consequences of mis- or missed

diagnosis (Paradis et al., 2021). Ideally, assessment of a multilingual child should occur in each of the child's languages (Paradis et al., 2021), but reliable testing tools do not exist in all languages, or if they do, are not always available or meaningful. Furthermore, when such tools are available in a child's L1 and L2, a competent assessor and/or bilingual norms in the given languages may not be (Kehoe, 2009; Paradis et al., 2021). While there certainly needs to be a focus on pinpointing and developing measures that reduce the risk of misdiagnosis when assessing bilingual children for language impairment, such as language processing measures like nonword repetition or dynamic assessment measures (Paradis et al., 2021), several studies (e.g. De Lamo White & Jin, 2011) highlight the importance of pairing appropriate measures with a carefully compiled background report from family members and caregivers when evaluating the language development of a bilingual child. This can be achieved by asking parents and caregivers to fill out questionnaires and checklists, which have proved to be valid indices of language impairment that correlate with performance on more traditional norm-referenced tests (Bonifacci et al., 2016; Paradis, 2011; Tuller, 2015). Three examples of such empirically tested questionnaires are the Alberta Language and Development Questionnaire (ALDeQ, Paradis et al., 2010), the Alberta Language Environment Questionnaire (ALEQ, Paradis, 2011) and the Parents of Bilingual Children Questionnaire (PaBiQ, COST Action IS0804, 2011). While the ALDeQ gathers information from parents of bilingual children about their child's *early* language experience, the ALEQ focuses on the child's *current* language situation. The PaBiQ, therefore, was designed to combine the two questionnaires so that a single tool would be available for clinicians.

In addition to questionnaires being used as part of comprehensive language background reports for multilingual children, other questionnaires have also proved valuable for collecting background information on SLTs working with multilingual children. Indeed, level of training and experience of the SLT in multilingual issues have been shown via survey studies to influence the quality of differential diagnosis. Following a survey study conducted in three cities in the UK, Mennen and Stansfield (2006) reported that SLTs from only one of the three cities anonymously surveyed were providing a fully equitable service to their multilingual patients. Williams and McLeod (2012) observed similar results following their own survey work done in Australia, with three quarters of their respondents reporting that they felt insufficiently qualified to work with multilingual children. However, in more recent work done by Scharff Rethfeldt (2019) in the German city and federal state of Bremen, which, at the time of the study, had a migrant population of 29.4%, the author concluded that despite many of the survey respondents having received additional training in multilingualism, the data collected in the survey indicated that there was still an important need for the inclusion of practical training and development of competences and strategies for working with multilingual children in the curricula of SLT qualification programmes, especially those offered in linguistically-diverse settings. Finally, recent survey work conducted across four different countries in Europe (Bloder et al., 2021) adds to these findings by highlighting the important influence that coupling both training and real-life experience working with multilingual children has on SLTs' attitudes towards and approaches to providing services to this population. These last studies mainly focused on countries where bilingualism is less prevalent than the situation in Switzerland, which underlines the interest of conducting such a questionnaire in this multilingual country.

Study aims

Inspired by survey studies conducted over the last two decades (e.g. Bloder et al., 2021; Mennen & Stansfield, 2006; Scharff Rethfeldt, 2019; Williams & McLeod, 2012), the current work aims to gather information from qualified SLTs across Switzerland about their language background, professional training and experience working with multilingual children, the types of tools they use during assessment and during intervention with multilingual patients, as well as their engagement with interpretation and language services when interacting with multilingual families. Switzerland was chosen as the setting for this work because multilingualism, both at the societal and the individual level, is emblematic of the country and, as such, multilingual caseloads for SLTs working in Switzerland are supposed to be high. Nevertheless, the prevalence is not known at this time, and it is possible that our survey will lead universities to offer more support to SLTs who may have difficulty dealing with numerous multilingual children. It would be expected, however, that the number of multilingual SLTs in Switzerland would also be elevated. This creates a unique environment in which there is a greater need for training and tools related to multilingualism, but high rates of multilingualism among SLTs in Switzerland may also lead to greater awareness of multilingual issues and needs and may positively impact the services that SLTs in Switzerland are able to deliver to their multilingual caseloads.

The only survey study that we know of having investigated SLT services for multilingual children in Switzerland is that of Bloder et al. (2021) in which the authors examined perspectives of SLTs on multilingualism more broadly by comparing results from four different countries, Switzerland, Germany, Austria and Italy. In their work, Bloder and colleagues found that multilingual SLTs did not have more positive attitudes towards multilingualism than their monolingual colleagues, and SLT multilingualism did not influence the quality of the services provided to multilingual children. Instead, the authors found that practical experience was the factor that most influenced SLTs' attitudes and approaches to multilingualism. However, Bloder et al. (2021)focused exclusively on the German-speaking part of Switzerland while, as previously mentioned, the French-speaking region of Switzerland, and in particular the canton of Geneva, is more linguistically diverse than the other language regions. Furthermore, training programmes for SLTs differ between the French-speaking and German-speaking regions. For these reasons, it seems insufficient to generalise about Switzerland regarding the impact of factors such as language and educational background on services provided to multilingual children based on survey results from a unique language region; a more complete investigation across the country is thus warranted. More specifically, if variations in SLTs' practices are identified across Swiss regions, this would help identify the factors (e.g. education, experience, SLT's linguistic status) most likely to benefit clinicians in their approach to multilingualism. Moreover, it is possible that languages spoken by the Swiss SLTs also vary from one region to another; in this case, we can wonder if possible overlap between their languages and those of multilingual caseloads facilitate the intervention. Finally, even if specific questionnaires and tools exist and can be used by SLTs, they are mainly referred to in the scientific literature and their transfer to clinical practice is not guaranteed. Therefore, it is essential to know whether SLTs are familiar with these tools and use them with multilingual caseloads.

After having collected preliminary data concerning the participants' workplace and patient cohort, the current study was guided by two main research questions:

1. Are societal multilingualism and high rates of individual multilingualism reflected in the services provided by SLTs to multilingual children and their families in Switzerland, across the different regions? More specifically,
    a. Do SLTs receive systematic training targeting matters related to multilingualism and are they familiar with current best practices documentation for working with multilingual children?
    b. Do the additional languages spoken by the SLTs overlap with the heritage languages spoken by their patients? If so, do SLTs use these languages when assessing and treating multilingual children?
    c. Do SLTs use tools that have been adapted or specifically designed and validated for multilingual populations as outlined, for example, by Paradis (2011)?
    d. Do SLTs use interpretation and translation services when interacting with multilingual families? Is information in the various national and immigrant languages available for multilingual parents whose child is receiving SLT services?
2. How do SLTs working with multilingual children in Switzerland gauge the following dimensions of their work:
    a. Multilingual children's access to treatment; caregivers' access to information and resources about DLD and treatment
    b. Efficacy of treatment provided to multilingual children
    c. The social-educational implications of language disorders for multilingual children

Methodology

Participants

Seventy qualified SLTs currently practising in Switzerland with multilingual children and adolescents anonymously completed a 20-minute online survey designed using the open-source statistical survey web application Qualtrics (http://www.qualtrics.com). The mean age of the respondents was 43 years old, with 36% of respondents having 1–10 years of experience, 28% having 11–20 years, and 36% having > 20 years of experience. In total, respondents practising in 13 of the 26 different cantons took part in this study. In terms of distribution of respondents' place of work across Switzerland, 37 respondents (53%) were working in French-speaking cantons, ten (14%) in German-speaking cantons, 16 (23%) in Italian-speaking cantons and seven (10%) in bilingual French- and German-speaking cantons. For the purposes of this work, however, respondents working in bilingual cantons were grouped with respondents from either the French- or German-speaking cantons based on the main language in which the respondent worked. Therefore, 41 SLTs who were practising in French took part in the survey (i.e. French-speaking SLTs, henceforth FR_{SLTs}), 13 who were practising in German (i.e. German-speaking SLTs, henceforth DE_{SLTs}) and 16 who were practising in Italian (i.e. Italian-speaking SLTs, henceforth IT_{SLTs}). This information is summarised in Figure 1.

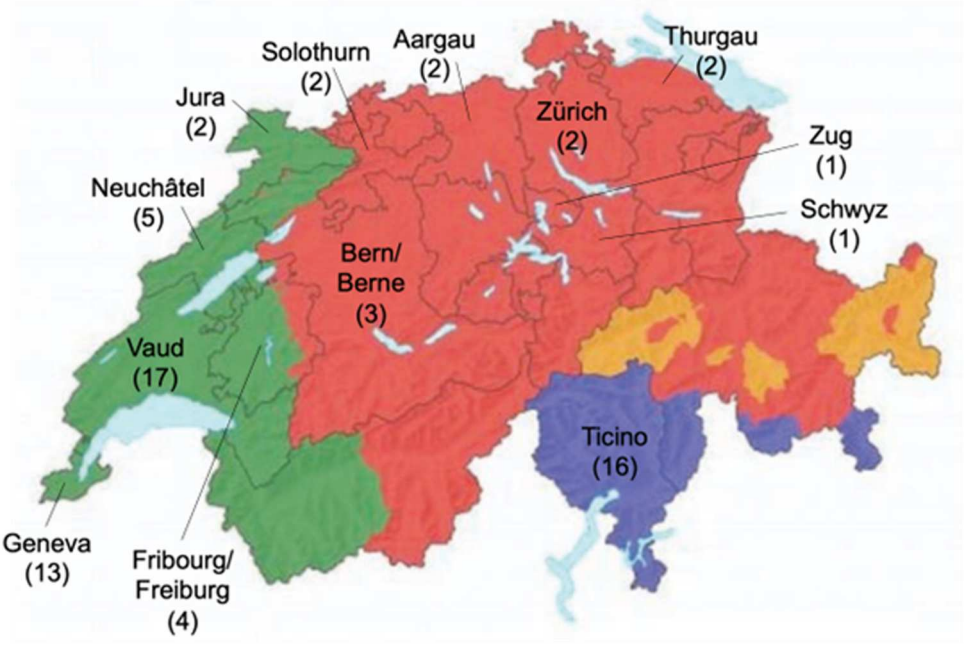

Figure 1. Summary of the 13 different cantons in which the SLTs who took part in our survey were practising as well as the number of respondents in each of these cantons. Green represents the French-speaking part of Switzerland, red the German speaking part, blue the Italian-speaking part and orange the Romansch-speaking part.

Procedure

Excluding personal questions (e.g. about age, location, and years of experience), the survey contained 54questions:

(1) Twenty-four**preliminary questions** about the SLTs' work environment (e.g. private vs. public clinic, number of colleagues, etc.), and patient cohort (e.g. number of mono- and multilingual children currently being treated, age range of patients, etc.).
(2) Thirty questions aimed at answering our **research questions**:
    a. Twenty-two factual questions about the respondent's language background, his/her experience and professional training working with multilingual children, the types of instruments used by the respondent when evaluating and treating multilingual children, and his/her engagement with interpretation and other available services;
    b. Eight opinion questions about the respondent's perspective of his/her working situation, the suitability of the tools used to assess and treat multilingual children, and the efficacy of this treatment.

The survey was created in three languages, German, French and Italian, and respondents were recruited by advertising the survey in regional newsletters linked to three national SLT associations in Switzerland: the *Deutschschweizer Logopädinnen- und Logopädenverband* (DLV) in the German-speaking part of Switzerland, the *Association Romande*

des Logopédistes Diplômés (ARLD) in the French-speaking part and the *Associazione Logopedisti della Svizzera Italiana* (ALOSI) in the Italian-speaking part of Switzerland. Consultations with a small focus group of four SLTs who were either practising in Switzerland or who were familiar with Swiss SLT policies led to the development of the content of the survey, which was carefully scanned for clarity and relevance. Furthermore, all translations were verified by a native speaker of the language in question and the three language versions of the survey were thoroughly proofread by proficient multilingual speakers to check for translation accuracy. All three language versions of the survey stayed online for 12 weeks.

This study was approved by the Committee for Ethical Research at the University of Geneva and all respondents gave consent for their anonymised data to be used when they initiated the survey.

Results

Preliminary questions about workplace and patient cohort

Most SLTs (66%) reported that they were working for a public institution, while the others indicated that they worked in private clinics. However, regardless of whether they were employed publicly or privately, more than half of the respondents (61%) stated that they worked with a small group of only 1–5 colleagues. As for caseload, nearly all SLTs (87%) reported that they regularly see more than 20 patients themselves or within their team. Finally, based on the SLTs' self-estimation, FR_{SLTs} had the highest proportion of multilingual caseloads, with 66% of FR_{SLTs}estimating that at least 50% of the children they work with are multilingual, see (Figure 2).

Main questions and factual questions

Question 1a: Do SLTs in Switzerland receive systematic training targeting matters related to multilingualism and are they familiar with current best practices documentation regarding working with multilingual children?

When asked if they were required to receive training on working with multilingual patients, most SLTs (87%) reported that this type of training was not mandatory and only 30% confirmed that they had been formally trained on multilingual matters. However, when responses from the different language regions were looked at individually, it was observed that more than half of DE_{SLTs} (69%) reported that they had received training to work with multilingual children, while this number was much lower for FRand IT_{SLTs} (27% and 6% respectively). Despite reporting that they were the most trained in multilingual matters, all DE_{SLTs}(100%) also reported being unfamiliar with published policy or current best practice guidelines for working with multilingual children (e.g. scientific articles or recommendations published by the EDK[5]), whereas FR and IT_{SLTs} were more familiar with such documentation (49% and 33% respectively). French and IT_{SLTs} cited newsletters and reviews linked to various SLT associations across Switzerland (e.g. the bi-annual review *Langage et Pratiques* published by the ARLD in French, https://arld.ch/publications/langage-et-pratiques) as their main source of information, as well as EDK publications (https://www.edk.ch/en/documentation/overview).

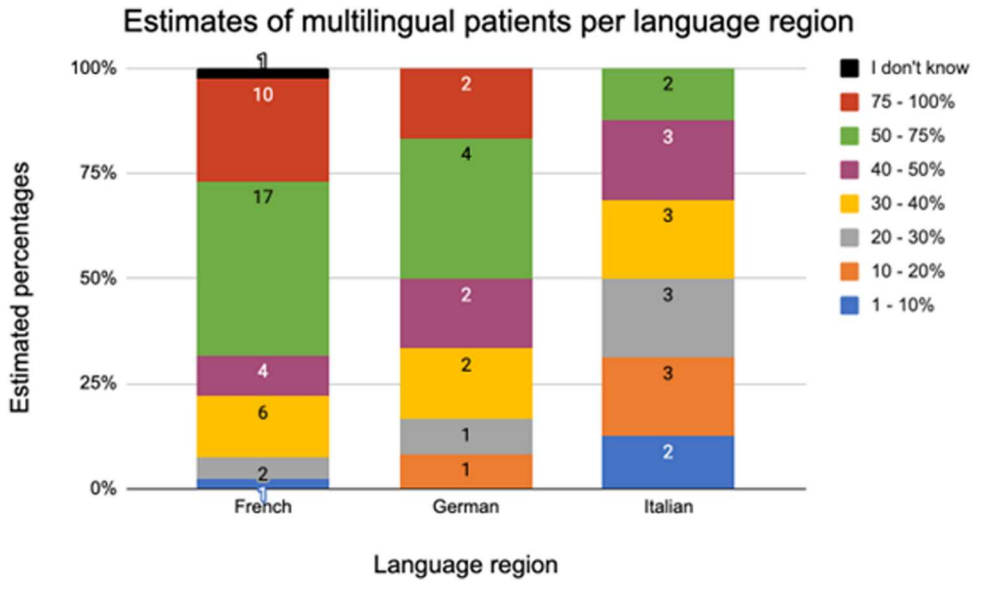

Figure 2. Multilingual caseload estimates provided by SLTs working in the three different language regions.

Across Switzerland (regardless of language region), respondents were only somewhat familiar with recent research conducted at Swiss universities on multilingualism, with 38% stating that they were not at all familiar with such work.[6] However, when asked if they knew of a designated SLT they could contact with queries regarding multilingual patients, language region seemed to play a role, with DE_{SLTs} being most likely to have access to colleagues with expertise on multilingualism (77% compared to 53% for FR_{SLTs} and 40% for IT_{SLT}s).

Question 1b: Do SLTs use multiple languages when assessing and treating multilingual children and do the additional languages spoken by the SLTs overlap with the heritage languages spoken by their multilingual patients?

Most SLTs who responded to our survey described themselves as multilingual, with 76% confirming they could speak at least one L2 (FR_{SLTs} = 61%, DE_{SLTs} = 92%, and IT_{SLTs} = 100%)and 67% speaking more than one L2 (FR_{SLTs} = 60%, DE_{SLTs} = 85%, and IT_{SLTs} = 75%). Of the L2s spoken, English was the most common followed by the national languages. Figure 3 summarises the various L2s spoken by the respondents. Furthermore, 51% of the FR_{SLTs} in our study confirmed that they sometimes use a language other than French with their patients, while this percentage was lower for DE and IT_{SLTs}(23% and 25% respectively).

The survey revealed a total of 44 heritage languages spoken across Switzerland by the SLTs' multilingual patients, but the most reported heritage languages (i.e. the SLTs said they had a patient who spoke that language)were Portuguese (56%), Albanian (50%), English (43%), Italian[7](36%), German[8] (33), and Spanish (31%).

Question 1c: Do SLTs use tools that have been adapted for multilingual populations?

Taken together, the majority of SLTs confirmed that they use a combination of different approaches and tools during the assessment of a multilingual child, such as standardised

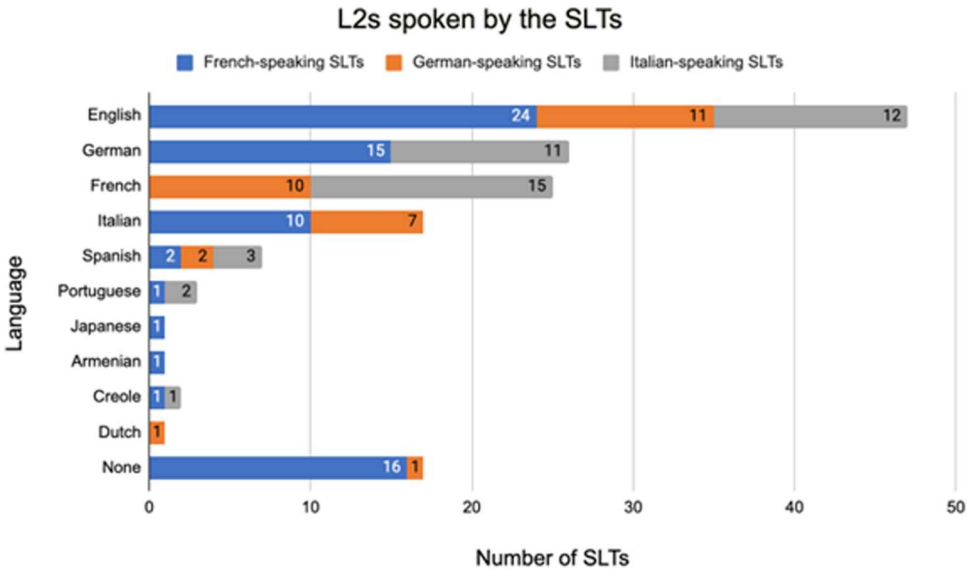

Figure 3. SLT responses concerning the various L2s they spoke.

and non-standardised tests, informal observation, the constitution of a language corpus, parent interviews and questionnaires. Just under half of the SLTs (46%) stated that they often use standardised tests in the community language and monolingual norms (Figure 4) when evaluating the language abilities of a multilingual child, although this was least common for DE_{SLTs}(23%). However, nearly half (43%) of all respondents also reported using measures in more than one language (e.g. standardised tests and

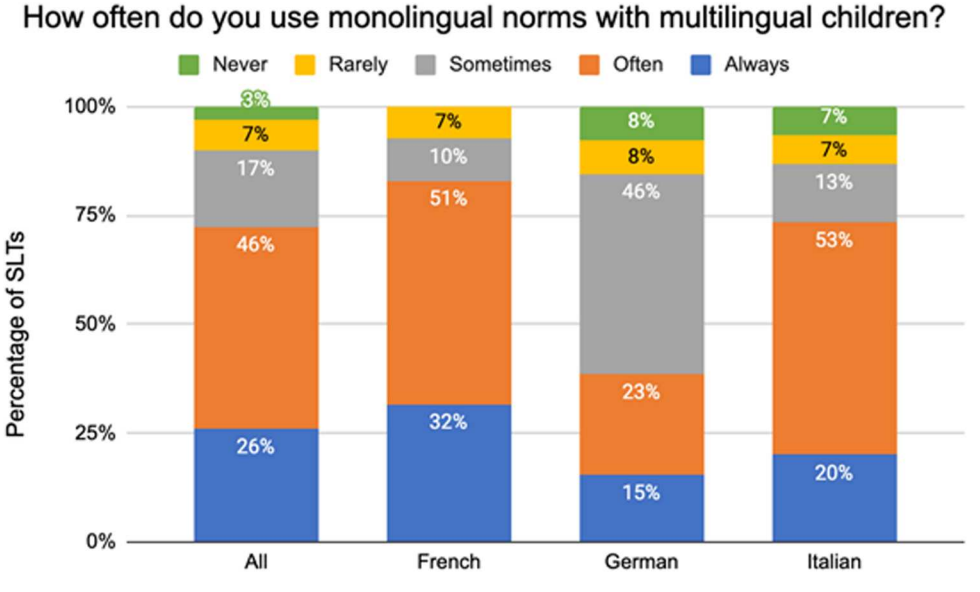

Figure 4. SLT responses about their use of monolingual norms with multilingual children.

questionnaires in a language other than the community language) with multilingual children. Additionally, mostFR and DE_{SLTs}(93% and 69% respectively) reported keeping a detailed record of their multilingual patients' language history (e.g. list of various languages spoken at home, with whom and at what frequency), while the percentage was lower for IT_{SLTs}(33%). Some SLTs responded that their choice to keep a language record for a multilingual patient depended on certain factors, in particular when exposure rates to the community language were low.

Question 1d: Do SLTs use interpretation services when interacting with multilingual families and in which languages is material available for multilingual parents with a child is receiving SLT services?

Seventy-six percent of FR_{SLTs}, 67% of $DE_{SLTs}$and 53% of IT_{SLTs}confirmed that interpretation and translation support was available to them at their place of work, although how frequently SLTs reported using these services differed among respondents in the three language groups:FR_{SLTs}use these services the most often and DE_{SLTs} use them the least (Figure 5). For SLTs who stated that they never used such services, budgetary limitations were cited as the main reason. As for material for parents in multiple languages (e.g. brochures, leaflets), more than half of the respondents stated that this was available at their clinic, but this average was largely driven by the high number of positive responses from the FR_{SLTs}[9] and DE_{SLTs}[10] (78% and 85% respectively); only one IT_{SLT}reported that information was available for parents in a language other than Italian, and the two other languages provided by this participant were both national languages (French and German) rather than immigrant languages. Figure 6 shows the immigrant languages in which material was available for parents at the time of the study according to the FR and DE_{SLTs}.

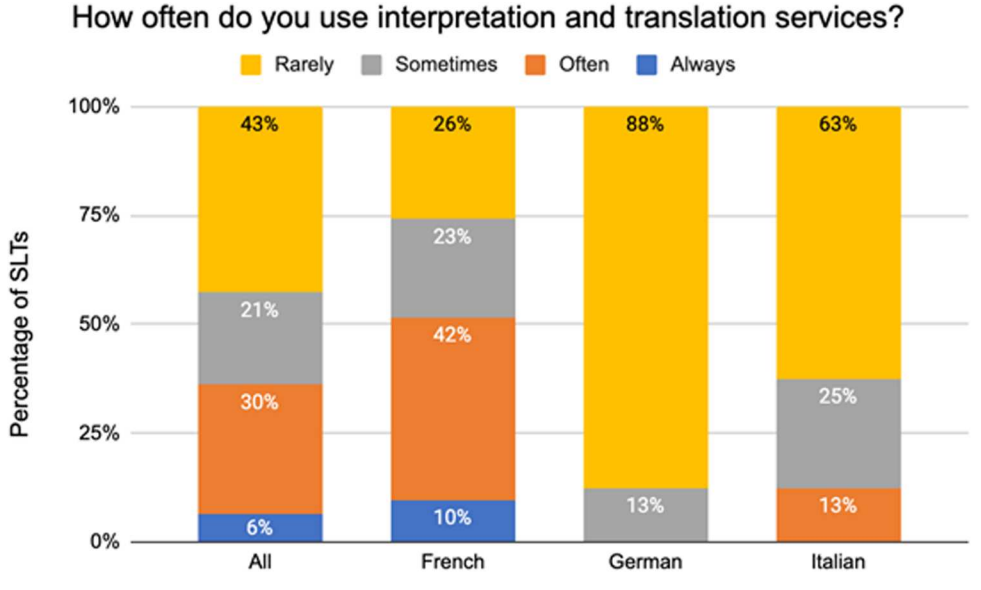

Figure 5. Summary of how often respondents use interpretation and translation services.

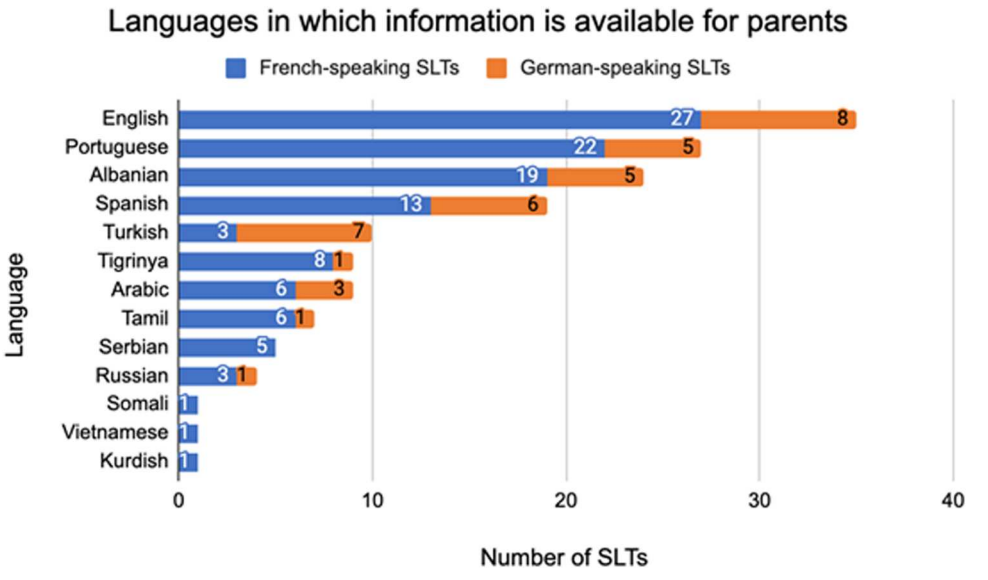

Figure 6. Summary of immigrant languages in which information is available for parents.

Opinion questions

How do SLTs in Switzerland gauge the efficacy of SLT services currently available for multilingual children and how satisfied are they with their patients' outcomes?

Our first opinion question asked SLTs if they felt multilingual children were over- or underrepresented at their place of work, and half of the respondents (50% in total; $FR_{SLTs} = 56\%$, $DE_{SLTs} = 69\%$, and $IT_{SLTs} = 7\%$) stated that they felt multilingual children were overrepresented. Thirty-eight per cent reported they had no opinion about the question and 12% felt that multilingual children were underrepresented at their clinic. When practitioners were asked how they felt about the number of sessions prescribed for their multilingual patients, 63% of FR_{SLTs}, 42% of DE_{SLTs} and 29% of IT_{SLTs}mentioned that they were neither satisfied nor dissatisfied, with smaller numbers($FR_{SLTs} = 8\%$, $DE_{SLTs} = 17\%$, and $IT_{SLTS} = 36\%$)reporting that they were not satisfied with the number of prescribed sessions as they did not feel it was sufficient. However, when asked specifically about their feelings towards the treatment they were able to provide their multilingual patients, over half of FR and DE_{SLTs}(60% and 62% respectively) judged this treatment to be satisfactory or very satisfactory, while only 40% of IT_{SLTs} felt this way.Fewer participants felt that treatment was unsatisfactory or very unsatisfactory ($FR_{SLTs} = 10\%$, $DE_{SLTs} = 31\%$, and $IT_{SLTs} = 27\%$). Among respondents who felt treatment was unsatisfactory, the reasons given were (i) a lack of suitable training for working with multilingual children (cited 75% of the time), (ii) a lack of suitable tools for evaluating multilingual children (cited 83% of the time) and (iii) a lack of suitable tools for treating multilingual children (cited 75% of the time).In terms of effectiveness of treatment for multilingual children, DE_{SLTs} were the most positive, with 85% judging treatment to be effective to very effective (compared to only 45% and 40% for FR and IT_{SLTs} respectively). Only 15% of DE_{SLTs}judged treatment to be fair/moderate, while this number was much higher for FR

and IT_{SLTs} (53% and 60% respectively). Only one respondent (a FR_{SLT}) stated that he/she felt the treatment to be ineffective.

We also enquired about the risks of social stigmatisation and educational disadvantage for multilingual children, and 73% of the SLTs (87% of IT_{SLTs}, 71% of FR_{SLTs}, and 62% of DE_{SLTs}) felt that the risk of social stigmatisation (e.g. difficulties integrating at school) due to being multilingual was very low to average, while 27% felt this risk was high to very high. As for the risk of educational disadvantage for multilingual children who also require SLT services, just over half of the respondents (51% in total; $FR_{SLTs} = 56\%$, $DE_{SLTs} = 62\%$ and $IT_{SLTs} = 27\%$) felt that this was very high.

Finally, we asked participants about their feelings regarding the availability of consultation and education information for caretakers and teachers of multilingual children receiving SLT services, and 42% ($FR_{SLTs} = 41\%$, $DE_{SLTs} = 39\%$ and $IT_{SLTs} = 50\%$) felt that the availability of this information was high to very high, while 58% ($FR_{SLTs} = 59\%$, $DE_{SLTs} = 62\%$ and $IT_{SLTs} = 50\%$) felt it was low to moderate, revealing high heterogeneity with regard to this question.

Discussion

This study provides a snapshot of the SLT services provided to multilingual children within the Swiss context in which societal and individual multilingualism are common. More specifically, it sheds light on the potential impact that societal multilingualism and high rates of individual multilingualism have on the training that SLTs in Switzerland receive, the languages and assessment tools they use with their patients, the intervention services they provide, and how satisfied they are with the diagnostic process and treatment outcomes in the context of a child's general development and scholastic achievements.

Our first research question asked if **SLTs in Switzerland receive systematic training targeting matters related to multilingualism and if they are familiar with current best practices documentation regarding working with multilingual children.** Differences found regarding the proportion of multilingual patients in the three different linguistic regions (with multilingual caseloads being most common in French-speaking cantons) show that needs related to training for working with multilingual children and access to adequate assessment and treatment material might differ from one canton to another. However, across linguistic regions, the majority of SLTs in our study clearly reported a lack of training on multilingualism and language impairment. Indeed,most respondents had not received (mandatory) training on multilingualism, although such training was more common for DE_{SLTs}. Interestingly, DE_{SLTs} also reported being less familiar than FR and IT_{SLTs} with policy reports or current best practices guidelines on working with multilingual children with language impairment. This discrepancy between practical and theoretical knowledge, which has also been found in previous survey studies (e.g. Bloder et al., 2021), might be interpreted as a decreased need for such documentation for SLTs who have specifically received training on multilingualism at the graduate level. This is in contrast to SLTs who have never received training on multilingualism and who may therefore be more likely to seek out information on the matter.

Despite their familiarity with published documentation on multilingualism *via* regional SLT newsletters and national Swiss education reports, FR and IT_{SLTs} were largely unfamiliar

with recent research conducted on multilingualism and language impairment(and all DE_{SLTs} reported being unfamiliar with such research). It should be noted that some of these resources are fee-based and SLTs typically do not have subscriptions to journals such as those published by ASHA. In addition, studies are most often in English and some SLTs may lack competence in this language (see Durieux et al., 2016, on Belgian French-speaking SLTs). An alternative could be the consultation of the open repository and archive that exists at the University of Geneva, where defended MA and PhD dissertations on this topic can be easily accessed by the public (with similar archives available at the other main Swiss universities). As it is likely that SLTs working in Switzerland are aware of the availability of these resources, one possible explanation as to why they are not referred to with the same frequency of newsletters or summative reports is that MA and PhD dissertationscould be considered long and difficult to read, with a lot of methodological and statistical considerations. To maximise the dissemination and impact of the research findings in university collections, it may be necessary to provide such findings to SLTs in a more palatable format, e.g. by highlighting recent work in the various SLT newsletters that have a high readership. Nonetheless, research-oriented communication and results on multilingualism do not seem to play an important role for the diagnosis and treatment of multilingual children for Swiss SLTs, irrespective of language region. Future studies are thus needed to understand whether this is due to the topic of multilingualism itself, to difficulties SLTs face when trying to access scientific communications and networks, or to SLTs having a lack of time for reading scientific articles and approaching research groups. Regarding lack of time specifically, certain studies have indeed highlighted that SLTs do not tend to base their treatment on scientific findings (Law et al., 2015).

Finally, the percentages of SLTs per linguistic region who know of a designated colleague to contact with queries about multilingualism were similar. The majority of FR and DE_{SLTs} knew someone they could turn to with questions on this matter, with the highest prevalence of a colleague or therapist to turn to with multilingualism queries in the German-speaking region. The higher presence of such a person in the German-speaking part of the country might be linked to the increased training DE_{SLTs} receive on this topic, but also to the possibility to share information and resources with SLTs from the three neighbouring German-speaking countries. However, that one region is more likely than the others to collaborate with neighbouring countries remains speculative and should also be addressed in future work.

Next, we asked if **SLTs use multiple languages when assessing and treating multilingual children and if the additional languages spoken by the SLTs overlap with the heritage languages spoken by their multilingual patients.** Our study revealed a mismatch between the languages spoken by the SLTs and the heritage languages spoken by their multilingual patients, with English being the exception. While a large number of the respondents reported working with Portuguese-, Albanian- and Spanish-speaking patients, only seven of the SLTs were able to speak Spanish and three were able to speak Portuguese; none of the SLTs reported being able to speak Albanian. Still, half of FR_{SLTs} reported that they occasionally used a language other than French with their multilingual patients, although further work needs to be done to understand which additional languages Swiss SLTs are using with their patients and in which contexts. Also, more work is needed to thoroughly examine whether being multilingual impacts SLTs' work with

multilingual children and if so, if the main impact comes from (i) sharing concrete language skills in a second language, (ii) sharing the same general experiences of being a multilingual person, or (iii) both.

Next, we asked if **SLTs in Switzerland use tools that have been adapted to multilingual populations**. That Swiss SLTs overwhelmingly confirmed that they use a variety of different tools when assessing multilingual children is encouraging and points to a good understanding of the precautions that need to be taken to decrease the risk of mis- or missed diagnosis in a multilingual child. This is also in line with suggestions made by Paradis et al. (2021), amongst others, that language evaluations given to multilingual children need to be as comprehensive as possible. The results revealed other ways in which SLTs in Switzerland handlelanguage impairment diagnoses in multilingual children. For example, nearly half of the respondents in our survey confirmed that they occasionally use language measures in more than one language with their multilingual patients, although a slightly greater number of SLTs reported that they use standardised tests and monolingual norms. Interestingly, DE_{SLTs} were less likely than their FR and IT-speaking colleagues to use standardised tests in the community language when assessing a multilingual child for potential language impairment, which might be explained by the fact that DE_{SLTs} have received more training on multilingualism than SLTs working in French and Italian and may have thus been directly confronted with the inadequacy of current standardised tools during their academic studies.

Also, the majority of FR and DE_{SLTs} reported keeping detailed records of their multilingual patients' language history. This demonstrates high levels of awareness regarding the importance of compiling thorough background reports. These not only allow clinicians to rule out external factors that may contribute to limited proficiency in the language being assessed, such as lack of exposure, but also act as a guide for SLTs, helping them to pinpoint potential red flags (e.g. history of late development in the heritage language) that could signify a legitimate language impairment and thus necessitate targeted intervention(Armon-Lotem, 2018). IT_{SLTs}, who have the lowest access to a colleague or an expert on multilingualism, treat the lowest proportion of multilingual children compared to the other language regions, and who have the lowest number of SLTs who have received training on multilingualism, were also least likely to assess the language history of a multilingual child. This corroborates previous findings that experience working with multilingual children (Bloder et al., 2021) and training on this topic (which is more common for FR and DE_{SLTs}) is actually beneficial in providing SLT services for multilingual children.

Do SLTs use interpretation services when interacting with multilingual families and in which languages is material available for multilingual parents with a child is receiving SLT services?

When access is available, other recommendations from policy reports and literature, like use of interpretation services, seem to be occasionallyimplemented, although FR_{SLTs} were most likely to use these support services. This is perhaps unsurprising as FR_{SLTs} have the highest proportion of multilingual caseloads, and the French-speaking region is more linguistically diverse, which may make the need for these services greater.However, future studies should investigate the origin of the disparity in access across the linguistic regions to such services. For example, are the differences due to (i) sufficiency of other tools and high levels of the child's/family's L2 performance (i.e. a

conscious choice of the SLTs) or(ii) a lack of funding for interpreters? In the same vein, material for parents in multiple languages is reported to be readily available by FR and DE_{SLTs}, while this seems not to be the case in the Italian region. At this point, it is unclear if this lack of material is due to a lack of need for it (e.g. because immigrant families are generally proficient in Italian), or if this is due to a lack of resources.

Finally, we asked: **How do SLTs in Switzerland gauge the efficacy of SLT services currently available for multilingual children and how satisfied are they with their patients' outcomes?**

The majority of SLTs reported that they felt multilingual childrenwere over-represented on their caseloads. This implies that they perceive overdiagnoses as prevalent in their clinical practice.It should be noted that while this general feeling is not necessarily representative of reality, it is in line with work showing that bilingual children can be inaccurately over-diagnosed with DLD (e.g. de Jong et al., 2010; Peña et al., 2020) and subsequently referred to SLTs for treatment (Ruiz-Felter et al., 2016). However, the majority of SLTs confirmed they were neither satisfied nor dissatisfiedwith the quantity and quality of their therapy sessions with multilingual children,and a substantial number of DE_{SLTs} felt that the treatment they provide to their patients is unsatisfactory. On the one hand, our findings confirm survey outcomes of Scharff Rethfeldt's (2019) study, that suggest dissatisfaction with the service provided to multilingual children despite having received additional training. On the other hand, the results of this study appear to be in contrast to previous research findings that highlighted that SLTs were not satisfied with their own skillset in diagnosing and treating multilingual children. For example, in their study, Mennen and Stansfield (2006) only found one third of the respondents to provide fully equitable service to their multilingual clients compared to the monolingual ones. Further, Williams and McLeod (2012) demonstrated that the majority of SLT respondents felt inadequately qualified to work with multilingual children.When participants did express satisfaction with their diagnostic and therapeuticachievements, the majority still felt there was a high risk of educational disadvantage for these children. This apprehension shows that in this context, case management and the involvement of other disciplines like school psychologists (special education) teachers etc. is very relevant when providing SLT to multilingual children. The high risk of educational disadvantage that the SLTs perceive also underlines the necessity of sufficiently early intervention as highlighted by Cable and Domsch (2011), Guralnick (2011) and Kong and Carta (2013).

Conclusion

Overall, the results show that despite societal multilingualism and high rates of individual multilingualism,the additional languages spoken by the SLTs often do not match the heritage languages spoken by theirmultilingual patients. However, to circumnavigate these difficulties, the SLTs reported that they frequently use a variety of different tests when assessing a multilingual child for language impairment, and FR_{SLTs} and DE_{SLTs} also tend to keep a detailed language background report that allows them to inform diagnostic decisions as well as clinical practices.Also, FR_{SLTs} were most likely to consult interpretation services when dealing with multilingual caseloads. In the French and German-speaking areas information for parents about bilingualism and language impairment seems to

be more readily available than in the Italian-speaking region, but across Switzerland, most SLTs felt that multilingual children are overrepresented at their clinic, although this needs to be investigated further in order to determine if it is truly the case or not. Finally, most SLTs agreed that multilingual children with language impairment faced a high risk of educational disadvantage. Collectively, these results highlight that despite the multilingual nature of Switzerland, there is a continued need for (i) SLTs in Switzerland to receive more specialised training in working with children with diverse language backgrounds and (ii) the creation of reliable assessment and remediation tools for multilinguals.

Limitations

We acknowledge that there was an unbalanced number of respondents for the different linguistic regions of Switzerland. The low number of Italian-speaking respondents could be due to the fact that 1) there is only one Italian-speaking Swiss canton and 2) there are no SLT schools in Ticino, thus leading to a lower number of SLTs in this region compared to other regions. The low number of German-speaking respondents could hypothetically be a consequence of the authors having less contact with the German-speaking part of the country than with the French-speaking part, where two authors of this paper are currently practicing.We recognise that numbers of respondents should be increased in future studies, in order to have a more representative panel of SLTs from all regions of Switzerland.

Despite this imbalance, a global screening was necessary to provide an overview of SLT practices for the entire country. In addition, we analysed the results of our survey by separating the responses according to the language region to which respondents belonged. This type of analysis avoided overgeneralising the results from one region to the entire country. Despite this precaution, we recognise that our survey has mainly allowed us to collect information on the French-speaking part of the country. However, it should be noted that these results for this specific region were necessary because, to our knowledge, no study has looked at SLT practices for bilingual children specifically in this region.

Notes

1. The term *multilingual* is used in this paper to refer to any individual who proficiently uses more than one language on a regular basis (Grosjean & Li, 2013). Throughout this work, the terms 'multilingual' and 'bilingual' are used interchangeably.
2. In the canton of Geneva, for example, children attending public schools begin learning both English and German from the age of ten years old (https://www.ge.ch/bienvenue-ecole-primaire).
3. The linguistic diversity found in a country.
4. One's ability to understand and speak languages other than his/her mother tongue.
5. The Swiss Conference of Cantonal Ministers of Education
6. It should be noted that at the University of Geneva, defended MA dissertations on the theme of multilingualismare nonetheless freely available online via an open access digital repository, for example: https://archive-ouverte.unige.ch/documents/facets/sort:Document.year/direction:desc?newFacet=typeFacet%3DMaster
7. These data came from SLTs working in either the French- or German-speaking part of Switzerland.

8. These data came from SLTs working in either the French- or Italian-speaking part of Switzerland.
9. Examples of available information in French can be found here: https://arld.ch/publications/brochures.
10. Examples of available information in German can be found here: https://www.bern.ch/politik-und-verwaltung/stadtverwaltung/bss/gesundheitsdienst/merkblaetter/muttersprache-sprache-des-herzens.

Acknowledgements

We would like to thank Federico Alessio, Alice Rinaldi and Fabrizio Arosio for translating and proofreading the Italian version of the questionnaire. We are also grateful to the *Deutschschweizer Logopädinnen- und Logopädenverband*, the *Association Romande des Logopédistes Diplômés*, and the *Associazione Logopedisti della Svizzera Italiana* for advertising our study in their newsletters.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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