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"We treat humans, not herds!": A qualitative study of complementary and alternative medicine (CAM) providers' individualized approaches to vaccination in Switzerland

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Abstract

Complementary and alternative medicine (CAM) providers' roles in parents' decision-making about vaccinations for their children have only recently begun receiving research attention, despite studies showing CAM to be used by 25 to 50% of the population in Western countries. This article examines how CAM practitioners discuss vaccinations with parents in Switzerland, with a focus on childhood vaccinations and human papillomavirus (HPV) vaccinations. We describe how the CAM providers we interviewed (N=17) and observed during vaccination consultations (N=18 observations with 5 providers) employed individualized approaches to vaccination. Triangulation of qualitative evidence from interviews and observations allowed us to analyze their discourses and descriptions of

experiences (i.e. what they said) and their practices *in situ* (i.e. what they did). Evidence gathered shows that practitioners framed vaccination decisions as choices at individual and family levels rather than focusing on public health benefits and consequences. They articulated their perspectives in terms of personal clinical experiences and parents' wishes, concerns, and contexts. Such findings challenge recurring narratives depicting CAM providers as categorically anti-vaccination and suggest that approaches to address vaccine hesitancy in clinical practice could benefit from communication and relational approaches similar to those demonstrated by participants in this study. Such approaches include taking time to understand parents' wishes, involving them in vaccination decisions, and taking their concerns seriously.

Keywords:
Switzerland
Vaccination
Vaccine hesitancy
Immunization
Complementary and alternative medicine
Patient-provider interactions
Individualized recommendations
Participatory communication

1. Introduction

The growing body of research on vaccine hesitancy (VH) underscores how drivers of vaccination decisions are multifaceted. Since healthcare professionals play important roles in

parent vaccination perceptions and decision-making, this study addresses an important research gap by providing insight into the vaccination discourses and practices of complementary and alternative medicine (CAM) providers. We open with a brief review on VH literature and CAM. We then evoke larger social and research narratives that tend to depict CAM providers and users as anti-vaccine advocates, which lays the groundwork for a discussion of the importance of considering choice, language, power dynamics, and legitimacy when researching CAM and biomedicine. Results from this study call into question such narratives and provide evidence showing nuanced CAM perspectives that go beyond the 'pro'/'anti' divide. That said, results demonstrate how participants' discourses and practices diverge from biomedical and public health discourses on vaccination, particularly through their tendencies to individualize vaccination consultations and to place less emphasis on systematically adhering to official vaccination recommendations of the Swiss health authorities.

1.1 Complexities of vaccine hesitancy

Resistance towards vaccination is not new; when Edward Jenner proposed inoculation as a medical practice in 1797, it received mixed reactions, including rejection from colleagues, and took time before becoming standard practice (Riedel, 2005). We focus specifically on contemporary VH and agree with scholars who define *vaccine hesitancy* along a spectrum between anti- and pro-vaccination stances. It involves malleable attitudes whose underpinnings find roots in socio-medical trends which have been shaping healthcare landscapes over the past several decades (Peretti-Watel et al., 2015; Bedford et al., 2018). Such trends are multidimensional and linked to the notions of 'healthism' (Greenhalgh & Wessely, 2004), risk culture (Beck & Ritter, 1992), consumerism of healthcare (Tomes,

2001; O'Hara, 2013), patient autonomy (Armstrong, 2014), experiential and lay knowledge in patient decisions (Caron-Flinterman et al., 2005), mistrust of scientific expert advice, skepticism towards health authorities, and perceptions of pharmaceutical industry influence in scientific knowledge production and profit-seeking (Epstein, 1996; Benin et al., 2006; Salmon et al., 2015; Ward, 2017; Attwell et al., 2018a). Furthermore, with a general public health shift towards health promotion, which encourages people to take more responsibility and exercise more agency in health decisions (WHO, 1986), it is not surprising that the public and healthcare professionals have become proactive in questioning vaccinations. In other words, VH is not a stand-alone issue; it reflects larger social developments concerning health decisions.

Personal social networks can influence vaccine choices; the more vaccine hesitant people there are in one's network, the more likely one is to be vaccine hesitant (Brunson, 2013). The multitude of vaccine information, particularly via the press, social media, and the Internet, can lead to 'information overload,' 'misinformation,' and heightened levels of anxiety and indecision (Kata, 2010; Betsch & Sachse, 2012; Yaqub et al., 2014; Wang et al., 2015; Sobo et al., 2016). Larson et al. (2014) systematically reviewed determinants of VH from a global scale, characterizing them as complex and context-specific, and concluded that there was "no universal algorithm" (p. 2155). Other scholars have also highlighted the need to clearly distinguish between (1) under-immunization as it relates to questions of access, affordability, logistics, and inadequate health systems, and (2) under-immunization as it relates to varying degrees of vaccine acceptance and non-acceptance (Bedford et al., 2018).

Another important vein of VH literature focuses on medical providers' influence on parents' decisions and emphasizes the importance of trust (Benin et al., 2006; Ames et al., 2017). Similar research highlights factors such as the time they spend on consultations and their information and communication styles (Kimmel et al., 2003; Bryant et al., 2009; Opel et

al., 2012; Paterson et al., 2016). A conversation analysis of 111 consultations showed how providers who initiated discussions with *participatory approaches* (i.e. "What do you want to do about shots?") were more likely to be met with "resistance" than providers who initiated the discussion with *presumptive approaches* (i.e. "Well, we have to do some shots.") (Opel et al., 2013, p. 1037). Further analysis showed that providers' persistence with initially resistant parents brought about half of the parents to vaccinate, whereas the other half did not. Opel et al. (2013) concluded that additional research is needed, particularly involving shared decision-making between providers and parents. That said, there is evidence that motivational interviewing, a patient-centered communication intervention which invites individuals to make decisions after exploring ambivalence, is effective in increasing vaccine uptake and reducing VH (Gagneur et al., 2018a; Gagneur et al., 2018b).

1.2 CAM, VH, and the vaccine narrative

Research efforts into VH have focused primarily on biomedical providers and tended to overlook, stereotype, or mystify CAM practitioners' roles regarding vaccination decisions. One study, for example, gathered evidence linking "anti-vaccination" and "pro-CAM" attitudes to "magical beliefs about health" (Bryden et al., 2018). Such an emphasis might be partially explained by larger cultural narratives. Sociologist Heller (2008) explains the tendency to scapegoat those who question "the vaccine master narrative" (p. 10) in which numerous scientific, medical, public health, and legal advances work in concert to frame vaccination as a champion of health for all, whereas non-compliers are considered "the opponent," characterized by ignorance and knowledge deficiencies (p. 14). He explains, "by insisting on universal compliance, the injunction to achieve one hundred percent vaccine coverage turns the small portions of the population who do not comply (for whatever

130 reasons) into deviants who need to be cajoled into full compliance with vaccine policies" (p.
131 14).

132 Such narratives can be similarly exemplified by the difficulties encountered when
133 attempting to clearly define CAM, which is perhaps best characterized through its diversity
134 and contrasted relations to biomedicine. Researchers describe CAM as healing practices and
135 modalities operating outside of, in addition to, or as accompanying biomedicine and accepted
136 medical curriculum (Zollman & Vickers, 1999; Wardle et al., 2016; Attwell et al., 2018a).
137 Gale (2014) explains how language, through processes of defining and naming, serves as a
138 vehicle for the power and legitimacy attributed to CAM and biomedicine, which underscores
139 the importance of taking CAM providers' and users' experiences into account to understand
140 such dynamics.

141 Social science research has demonstrated fundamental epistemological differences
142 between CAM and biomedicine. Medical sociologists and anthropologists have argued that
143 what counts as *evidence* for CAM practitioners and users differs from the oft-cited mantra of
144 evidence-based biomedicine, where randomized controlled trials are considered the gold
145 standard. Evidence in CAM, they argue, is expressed more in terms of experiential
146 knowledge and embodied experience (Gale, 2010; Pedersen & Baarts, 2010). Barry (2006)
147 explains, "Non-biomedically trained alternative practitioners have a knowledge system that is
148 closer to that of anthropology than to science-based medicine; it is more grounded in the
149 phenomenal world of everyday lived and embodied experience" (p. 2655).

150 Qualitative studies have described what happens in CAM provider-patient interactions. A
151 common theme among 46 Danish CAM users was that alternative medicine was 'risk-free'
152 and that 'it could do no harm' (Pedersen, 2013). Another study from Denmark analyzed how
153 trust, a key factor in vaccination decisions, is earned by practitioners of acupuncture,
154 reflexology, and homeopathy through patient-provider relationships. "Practitioner's caring,

155 careful listening and providing responsive feedback," (p. 54) their experiences of patients'
156 bodies and patients' experiences of their own bodies, and the material experiences of the
157 encounter were considered crucial (Pedersen et al., 2016). Furthermore, a study comparing
158 CAM and biomedical approaches to patient-provider relationships in Germany found that
159 practitioners of CAM were more likely to argue for shared-decision making with patients
160 than biomedical general practitioners and insisted on "patient-centeredness" (Berger et al.,
161 2012, p. 133).

162 Qualitative research on CAM and vaccination decisions is surprisingly scarce. A recent
163 study from Australia describes how parents and CAM providers in two cities exemplified a
164 *symbiotic* relationship regarding CAM and VH: "Vaccine hesitancy and CAM exist and
165 function separately, but when combined, provide each other with 'resources' that enable them
166 to thrive together" (Attwell et al., 2018a, p. 111). Results emphasized parents' preferences for
167 natural approaches and desires to exercise agency in immunization and healthcare decisions
168 outside the influence of biomedicine and the pharmaceutical industry.

169 Quantification of CAM-use prevalence in Western countries, which use varying
170 methodologies and definitions of CAM, reported rates of approximately 40% among adults in
171 the US in 2007 (Barnes et al., 2008), 26% of the general population in Europe in 2014
172 (Kemppainen et al., 2018), and 40% in Germany and Switzerland, where a particularity is
173 that CAM is often provided by medical doctors with additional CAM training (Hart, 2017).
174 Studies seeking to quantify CAM use have additionally focused upon *why* people use CAM
175 and show reasons including dissatisfaction with biomedicine, satisfaction with CAM
176 encounters, alternative perspectives towards biomedicine, and interest in approaches
177 combining CAM and biomedicine (Harris et al., 2012; Thomson et al., 2014; Leach et al.,
178 2018). Additionally, CAM use correlates with higher levels of VH and with individuals who
179 cite spirituality as an important source of information, exemplify intuitive (as opposed to

analytic) thinking styles, and demonstrate openness to new experiences (Browne et al., 2015). Researchers in Australia found that children of parents who had consulted a complementary medicine (CM) practitioner were less likely to be up-to-date on their vaccinations than those who had not consulted a CM practitioner (Frawley et al., 2018). However, researchers have not determined causal pathways and explain associations in terms of confounding factors, such as higher income and education, or distrust of medical systems (Wardle et al., 2016).

1.3 The Swiss context

With around 8 million people and 3 distinct language regions (Swiss German, French, and Italian), Switzerland does not have any federally mandatory vaccinations in non-epidemic settings. The Swiss Federal Office of Public Health (FOPH) makes vaccination recommendations and communicates them to the public. Basic mandatory health insurance covers vaccination costs when the official schedule is respected and administered for at-risk groups for certain vaccine preventable diseases (VPD). With no federal mandate, vaccination programs are the responsibility of the 26 Swiss cantonal public health systems, and implementation modalities and coverage vary between cantons (Masserey Spicher, 2010; Lang et al., 2011a).

Vaccination rates in Switzerland are high overall (FOPH, 2015) and have not been decreasing since 1999; rather, national coverage is either increasing or stabilizing (FOPH, 2018a). Regarding regional differences, children from the French and Italian-speaking cantons have on average higher rates of measles vaccination coverage than in German-speaking cantons (Lang et al., 2011b). Additionally, in 2017, the FOPH reported not systematically meeting targets: “Switzerland has only partially reached its objectives in terms of vaccination (…). For instance, flares of measles still occur in parts of Switzerland, taking

advantage of locally low rates of vaccination" (FOPH, 2017, p. 5). Cases of measles, small epidemics (Bundesamt für Gesundheit, 2009), and under-immunization tend to cluster around anthroposophic (i.e. Rudolf Steiner, Waldorf) schools and around certain CAM practitioners (Richard & Masserey Spicher, 2009). However, the relationship between VH and immunization rates has not yet been extensively studied in Switzerland.

Research examining CAM in Switzerland show relatively high rates of use and favorable opinions among the population; Wolf et al. (2006) found that about 50% of the population had used CAM and about 50% of the population preferred hospitals with CAM therapies and providers. Data from the 2007 and 2012 Swiss Health Surveys have shown 25% CAM use in the population older than 15 years, higher probability of CAM use among those with chronic illness or poor self-perceived health, women, middle-aged people, and more highly educated individuals (Simões-Wüst et al., 2014; Klein et al., 2015). In Switzerland, CAM is often provided by medical doctors with CAM training (Hart, 2017). CAM services are reimbursed by basic mandatory health insurance when they are provided by medical doctors who have also obtained additional postgraduate training in anthroposophical medicine, Traditional Chinese Medicine/acupuncture, homeopathy, or phytotherapy (FOPH, 2018b). Patients can choose to purchase supplementary insurance that covers other CAM-related costs that are not covered by basic mandatory health insurance; 60% of the adult population in 2012 reported having such insurance (Klein et al., 2015). CAM practitioners who are not medical doctors must undergo training and obtain accreditation in order to be eligible to receive payments through patients' supplementary insurance (ASCA, 2019; RME, 2019).

1.4 Study research questions

Considering the debated roles of CAM providers in VH and the popularity of CAM among large segments of the population, we consider it important to empirically study their views and practices regarding vaccination. Since vaccinations are not mandatory in Switzerland, healthcare professionals are allotted some leeway in their interactions with patients. Our study aims at understanding CAM providers' roles in VH and asks the following questions: (1) how do CAM providers describe their perspectives and roles regarding vaccination?; (2) in what ways, if any, do CAM providers' views and practices diverge from biomedical and public health vaccination discourses?; and (3) how do CAM providers and parents discuss vaccination during consultations?

2. Methods

We collected data in the French- and German-speaking regions of Switzerland (FR-CH and GE-CH, respectively) between August 2017 and November 2018. We conducted semi-structured qualitative interviews with CAM providers (N=17) and ethnographic observations of vaccination consultations between providers and parents (N=18 consultations with 5 providers). Practitioners were interviewed and then observed during consultations in an attempt at qualitative data triangulation; data gathered during interviews allowed comparison of their vaccination perspectives and descriptions of their interactions with parents to observations of what actually happened in practice during consultations.

The study was approved by the local ethics committee (*Ethikkommission Nordwest- und Zentralschweiz*). We recruited providers through research networks by sending recruitment letters and study flyers via e-mail, by personally calling potential participants, and through snowball sampling. Purposive sampling was conducted with providers' support to selectively observe consultations during which vaccination was likely to be discussed, including

interactions with parents seen for the first time or with parents considering their children's first vaccinations. Informed consent was obtained from providers for interviews and from providers and parents for observations. Pseudonyms are used to protect the anonymity of participants.

Author5, a pediatrician with training in anthroposophic medicine, and author8, an infectious disease specialist and internist, played important roles in recruiting participants. In total, we invited more than 50 CAM medical doctors and practitioners offering CAM. Not all responded. Eighteen declined to participate, with some citing concerns about our research agenda. A commonly expressed worry was that we were studying CAM and, by proxy, "anti-vaccine" practitioners, to use "their arguments" against them, with our team perceived as "pro-vaccine" or potentially "pro-mandatory vaccination." We clarified our research goals and explained our focus on understanding provider vaccination perspectives and experiences. Despite some providers declining to participate, to our knowledge, we were able to recruit and interview more CAM practitioners and observe more CAM vaccination consultations than other researchers in the past.

Author1, a sociologist trained in qualitative methods, conducted 7 interviews and observed 10 consultations with 2 participants in FR-CH. Author2, a medical doctor trained in qualitative research, conducted 8 interviews and observed 3 consultations with 2 participants in GE-CH. Author3, a senior medical student with training in qualitative methods, conducted 2 interviews and 5 observations with 1 participant in GE-CH.

A qualitative interview guide was drafted based on VH literature, critically reviewed, and finalized after several iterations among research team members. The guide included open-ended questions for participants to answer in their own words and covered questions within the following themes: (1) providers' background and training, (2) parent-provider interactions during consultations, (3) perspectives on vaccination and immunity, and (4) perspectives on

279 medicine and public health. The guide was tested prior to data collection. Interviews ranged
280 from 47 to 110 minutes (average 70 minutes), were digitally audio-recorded, and transcribed
281 verbatim.

282 Observed consultations were documented with ethnographic observation notes in field
283 journals, which were subsequently written into a narrative format. In a semi-structured
284 approach, we filled out observation guides that were created with the research team and based
285 on VH and medical ethnography literature. These guides prompted researchers to document
286 items of interest, such as the reason for consultations, the person who initiated the
287 vaccination discussion, if the practitioner used presumptive or participatory approaches,
288 which vaccinations were discussed, time spent discussing vaccinations, and researchers'
289 interpretations of providers' and parents' emotions and communication styles.

290 After compiling interview transcripts and observation notes, several rounds of in-depth
291 readings of the data, and discussions with the research team, a coding scheme was developed.
292 The coding scheme allowed data to be coded into three main groupings: providers' (1)
293 positions on vaccination along the spectrum of VH, (2) reflections on official Swiss
294 vaccination discourse, evidence, and biomedicine, and (3) focus on individuals' choices.

295 Given the transdisciplinary nature of the team, our range of research backgrounds,
296 professional experiences, and language abilities, we opted to analyze the qualitative data with
297 the Framework Method described by Gale et al. (2013) with the support of MAXQDA
298 software (VERBI, 2017). This allowed for structured flexibility in the sense that our guided
299 interviews and observation approaches were informed by a *deductive* approach, meaning that
300 our data collection tools were constructed based on VH literature. However, further analysis
301 led us to adopt an *inductive* approach by incorporating themes into our analysis that emanated
302 from the data. We therefore benefited from what Charmaz (2006) refers to as *constructivist*
303 *grounded theory*.

Data were coded in the original language of utterance and then analyzed according to our coding scheme, with regular research team discussions throughout this process. These discussions allowed us to reflect on our interpretations of the data and to take into account how our backgrounds, knowledge, beliefs, and previous experiences may have affected the analysis of the results and our conclusions. We have translated supporting evidence, such as quotes from interviews, into English in this article.

3. Results

As shown in Table 1, we interviewed 7 providers in FR-CH and 10 in GE-CH. Of the 17 participants we interviewed, 15 were licensed medical doctors with additional training in CAM. In line with our approach inspired by constructivist grounded theory, we asked providers to explain the type of medicine they practiced in their own words. They reported practicing a range of CAM: 7 anthroposophic medicine, 7 homeopathic medicine, 1 Traditional Chinese Medicine/acupuncture(TCM), 1 phytotherapy, and 1 naturopathy. Such classifications are used heuristically. In reality, several providers described their practices as not fitting neatly into these categories; some practiced "integrative medicine," meaning they employ one or multiple CAM therapies in addition to biomedicine. We observed 10 childhood vaccination consultations in FR-CH and 8 in GE-CH with 5 practitioners. Consultations concerned children ranging in age from 12 days to 8 years.

In the following sections, we draw upon findings from interviews with providers and observations of medical consultations. We first discuss CAM providers' nuanced positions on vaccination. Second, we describe how their tendencies to frame vaccination perspectives in terms of their and their patients' experiences serve as a point around which they articulated critiques of both biomedicine and biomedical vaccination discourses in Switzerland. Third,

these discussions bring us to examine CAM practitioners' individualized approaches to vaccination discussions in clinical settings.

3.1 CAM providers' nuanced views and practices on vaccination: Going beyond the anti-pro dichotomy

Rather than having a categorical stance on vaccinations, providers demonstrated nuanced positions during interviews and observations and did not always express perspectives as being "pro" or "anti." Most participants reported favorable or ambivalent vaccine attitudes and regularly recommending vaccinations in practice. Furthermore, during interviews and observations, they discussed vaccination on a vaccine-by-vaccine, case-by-case basis, with the official Swiss vaccination schedule serving as a common reference point. Practitioners explained how they made a point to ensure parents were comfortable with their decisions, even if this meant not always adhering to official recommendations.

When discussing their sources of information on vaccination during interviews, providers cited medical journals, scientific sources, case studies, vaccination conferences, colleagues, Swiss vaccination recommendations, and books written for French- and German-speaking popular audiences. Several participants reported reading news sources to follow public debates and be informed about vaccination questions they might hear. Dr. Ferrand (FR-CH, homeopathic medicine) mentioned sometimes making a point of visiting controversial anti-vaccination websites, noting that it was "ridiculous," but justified doing this in order to remain up-to-date on "what is being said and to see the paradoxes."

Participants were not shy about expressing doubts and concerns related to risks of vaccination during interviews. Uncertainties varied and related to possible long-term negative effects of vaccines on children's immune systems, in particular the induction of autoimmune

diseases, and unknown long-term effects of aluminum and other additives on the body, particularly the brain. One question concerned the "medical ecology," with a provider wondering, "Eradicating a disease makes space for what other disease?"

When deviating from official recommendations, which recommend the first vaccination at 2 months of age, providers reported delaying vaccines, often until 6-months of age, 1 year, or older, or not recommending certain vaccinations (for example: measles-mumps-rubella, poliomyelitis, hepatitis B, or human papilloma virus (HPV) vaccines). Opinions varied during interviews around polyvalent versus monovalent vaccines. Some practitioners reported encouraging polyvalent vaccines to avoid higher exposure to adjuvants over time, whereas others emphasized specific monovalent vaccines, such as the tetanus vaccine, in order to avoid "too many" vaccines at once.

Two providers professed to having strict anti-vaccination attitudes and being vocal about it with parents. Both are licensed doctors who practice homeopathy in GE-CH. Dr. Füssli explained that she never vaccinates children because, in her view, children are either too healthy and do not need vaccines, or they are too sick and cannot handle them. Dr. Kimmig, a doctor practicing in a small village, posited that if the public had all the information on vaccinations, people would not vaccinate. He reported not doing vaccine consultations and instead encouraged patients to attend vaccination evenings he hosts. At such events, he explains concerns about vaccine adjuvants, statistics showing that the prevalence of VPDs have diminished before the introduction of vaccinations, and how, in his own studies of approximately 200 of his patients, vaccinated children had more allergies than non-vaccinated children.

The 2 providers not licensed as doctors, one a homeopath in FR-CH, the other a self-described naturopath in GE-CH, positioned themselves as ambivalent about vaccination during interviews. Neither saw their roles as being the primary person with whom

vaccination consultations should take place. They instead viewed themselves as advisors who facilitated parents' decision-making. Both discussed their roles after vaccinations in "draining" undesirable vaccination components, such as aluminum or other adjuvants, from patients' bodies through homeopathic or plant-based remedies.

3.2 *Intersections of experiential knowledge and evidence-based medicine: Critiques of biomedicine and health authorities*

Analysis of interview transcripts on providers' vaccination perspectives bring two summative themes to light: (1) CAM providers framed their perspectives in terms of their personal clinical experiences and patients' vaccination experiences; and (2) recounting such experiences allowed participants to express perspectives diverging from generally accepted biomedical consensus on health and illness. This section focuses on these themes while drawing from providers' political discourses on the Swiss context. Such discourses are political in the traditional sense, meaning that they refer critically to established health systems guiding medical conduct. They are also epistemologically political insofar as they deal with CAM providers' legitimacy in claims-making, particularly claims that question the *status quo* of the Swiss vaccination recommendation discourse.

The first theme primarily developed from providers recounting stories of their vaccination experiences in practice, with such accounts commonly introduced with phrases like, "In my experience," "a colleague told me," and "I know from experience." Participants occasionally invited us to take these stories with a grain of salt since they were uncertain that their experiences provided irrefutable evidence for or against vaccinations. As a case in point, Dr. Laurin (FR-CH, anthroposophic medicine) explained, "I know from experience that I have [patients] with less severe asthma. (…). Well, maybe it's due in part to other things." In

contrast, Dr. Jansen (FR-CH, homeopathic medicine) framed favorable vaccination sentiment by explaining that the Swiss vaccination schedule was, in his experience, generally "well tolerated." Having worked in Swiss pediatric hospitals with cases of vaccine-preventable infections that were "often dramatic and very traumatizing," he voiced that it was "great" to be able to prevent children from getting VPDs.

Some participants' ambivalence was reinforced by encounters with patients consulting specifically for vaccination due to patients' suspected adverse vaccine events. Over the years, Ms. Beaulieu, a homeopath in FR-CH, treated many patients who had reported developing adverse reactions after being vaccinated, which has had an important impact on Ms. Beaulieu's views. She explained, "There is what I think and what I see. And now, with 10 years of practice (…), I see that non-vaccinated children are sick much less. That is evidence, all the same!" Similarly, Dr. Dupont (FR-CH, anthroposophic medicine) was concerned about the large number of serious vaccine-related symptoms reported by patients he had seen throughout his career but recognized that his experiences were not representative: "Since my patients often come for a second opinion [for difficult cases], I see a lot of people who have had problems with vaccines. I have a deformed vision because of this." He admits, "There might not be a scientific correlation," but emphasized the importance of listening to "people who say, 'Listen, since I've had this vaccine, I don't feel well.'" He expressed a desire for "science" to take into account "what [these people] experience, [and] what they feel." Such providers expressed uncertainty whether these experiences with patients' purported adverse effects counted as enough evidence to question the merits of vaccination, meaning they remained open to the possibility that their views on vaccination were skewed, perhaps negatively, due to the types of patients who consulted with them.

The second theme dealt with CAM practitioners' criticisms of biomedicine. Many argued during interviews that illness is no longer tolerated in modern society due to its

inconvenience. They added that biomedical providers were in a "panic" and "fearful" about diseases and infections. Participants generally expressed having a relaxed view about some vaccine-preventable childhood infections, with some arguing that we have "the right to be sick." Dr. Laurin (FR-CH, anthroposophic medicine) cited Rudolf Steiner, one of the founders of anthroposophic medicine, when arguing in favor of developmental advantages of childhood illnesses: "Children transform their bodies into what they need through their childhood illnesses." Dr. Dupont (FR-CH, anthroposophic medicine) echoed this sentiment, contending that since the 1990s, measles had become a socially unacceptable disease, stating, "We didn't use to make such a monster out of it." Dr. Kimmig (GE-CH, homeopathic medicine) advocated for parents having the possibility to introduce certain diseases to their children, "I always say that we should set up a rubella-hotline. If you have a 5- or 6-year-old daughter, you can call, 'Hey, is there someone with rubella around here?' Then you can go there for a visit, maybe she'll get infected." Such perspectives considered certain childhood illness as developmental milestones that vaccination might impede.

Participants' vaccination discourses were also shaped by contexts in which they practiced medicine. When discussing vaccination necessity in Switzerland during interviews, providers generally constructed Switzerland as a safe space. Several activated epidemiological evidence to argue that the risk of contracting certain VPDs, such as poliomyelitis, was virtually null in Europe and Switzerland. They also noted how they accepted treating non-vaccinating parents who stayed within their communities and limited possible exposure to VPDs. In contrast, some providers recommended vaccination to parents who planned to travel outside of Switzerland. Dr. Buchman (GE-CH, TCM and acupuncture) alluded to the potential infectious *Other* by explaining to a mother during a consultation observation that there were cases of polio in "Egypt, Nigeria, and similar countries, but if you don't have contact with people from those countries or travel there, the risk of contracting polio in Switzerland is

very small." Dr. Laurin (FR-CH, anthroposophic medicine) argued that the Swiss medical system was adequately prepared to handle tetanus infections but that its low prevalence might actually impede younger doctors from detecting it: "If the wound is suspicious, most doctors no longer know how to recognize possible tetanus infections."

Given the attention participants attributed to possible negative consequences when following official vaccination recommendations, providers expressed interest during interviews in having the Swiss FOPH clearly state potential health risks of vaccines to the public. Dr. Ferrand (FR-CH, homeopathic medicine) explained this being an important knowledge gap, citing "bias" in the presentation of information:

> (…) the FOPH's information is really good. But, when it comes to some of the grey areas, we find ourselves in a type of magma of information that is very, very difficult to sift through. We kind of have the impression that the FOPH and the Vaccination Commission only shows studies that are [unfinished sentence]. There are studies showing there are maybe complications. Scientific honesty would have it so that those studies are also shared so that we could have that specific element. As a result, we must look further than what the FOPH tells us.

Along these lines, other providers reported a lack of clear scientific consensus in Switzerland before the implementation of new vaccination recommendations. Dr. Abegglen (GE-CH, homeopathic medicine) expressed disappointment in the implementation of the MMR vaccination recommendation, "there were doctors who had clearly spoken against the MMR vaccine, across all fields, not only from complementary medicine. I found it a pity that they just decided to do it that way and pushed it through."

Similarly, a recurring point of contention concerned mandatory vaccinations, which was *à propos* due to Switzerland's geographical proximity to, and cross-cultural influence with, France, Italy, and Germany, where vaccine mandates have been intensely debated and, in some cases, implemented, in recent years. Dr. Schmidt (FR-CH, anthroposophic medicine) commented:

> It's clear that for many vaccines, it's to have herd protection, or herd immunity. The decision is much larger than the child alone. That said, I think that it should be a free choice for the parents to decide. It's only if the diseases really pose a consequential public health risk that we can start thinking about mandatory vaccinations. That's why I think the political decisions in Italy and in France are not at all justified.

Dr. Ferrand (FR-CH, homeopathic medicine) argued in favor of a "personalized" approach "rather than mass vaccination programs that have not been properly thought through." Dr. Laurin (FR-CH, anthroposophic medicine) cogently encapsulates these sentiments through his direct criticisms of mass vaccination programs and mandates: "We now know that there are not two individuals who are exactly the same. However, for me, vaccination comes from the practice of veterinary medicine. They're now referring to us as herds! (…) That's not human medicine for me, especially when it's practiced in a mandatory way."

In other words, CAM providers' discourses depict them as *treating humans, not herds*, a sentiment which succinctly summarizes their discourses and practices. Providers were acutely aware of political implications of openly questioning vaccinations. Dr. Laurin (FR-CH, anthroposophic medicine) explained, "Being against vaccination in a university setting is a career killer!" Despite perceived taboos within established biomedical settings, participants were comfortable positioning themselves as reflecting critically about vaccination for

503 individual patients. The core of providers' reflections was that uniform vaccination programs
504 might not be justified because they fail to meaningfully take into account CAM perspectives,
505 evidence from clinical experiences, and individual patients' contexts and wishes.
506
507 **3.3 *Emphasizing individualized choices***
508
509 CAM providers' approaches to vaccination focused on individual patients, families, and
510 their specific social contexts and did not involve actively pursuing public health objectives
511 related to herd protection. They employed individualized approaches by incorporating: (1)
512 parents' pre-existing knowledge and perceptions on vaccinations and vaccine-preventable
513 diseases, (2) parents' wishes and concerns, and (3) patients' histories, physical constitution,
514 medical history, and social and family contexts. During interviews, CAM providers explained
515 their roles in vaccination consultations as consisting of "informing parents," "encouraging the
516 families to take responsibility for vaccination choices," "accompanying parents in their
517 choice," "listening to parents," and "not being judgmental or prescriptive."
518 The following paragraphs result from the combined analysis of interview data and
519 observations of medical consultations, allowing us to compare what CAM practitioners said
520 to what they did. Both in their descriptions and in practice, providers emphasized the
521 importance of establishing parents' perceptions and knowledge-base on vaccination and
522 VPDs as a starting point. Dr. Ferrand (FR-CH, homeopathic medicine) explained:
523
524 We first speak about vaccines generally. Then, I go over them one by one. And for each
525 one, I ask [the patients] what types of information they had sought out. What information
526 do they already have? What are their concerns about vaccinations? (…). I tell them the
527 FOPH recommendations. Then, I tell them my information.

An extract from field notes from an observation with Dr. Schmidt (FR-CH, anthroposophic medicine) reflects the approach described by Dr. Ferrand.

> Dr. Schmidt paused and asked the parents if they had considered vaccination for their son. The mother, a law student, laughed nervously and whispered that they were "anti-vaccine." The father, a medical doctor who also practices Ayurveda, explained how his thinking about vaccines originally aligned with biomedicine and that he used to think that vaccination was the best option. He recounted how he and his wife had read "an excellent book," *Qui aime bien, vaccine peu* [rough translation: *Those who love [their children] vaccinate little*], which had led them to change their minds to thinking they could "go without vaccination." Dr. Schmidt nodded, showing that he knew the book and said that the book was "a bit harsh" toward vaccines.

Participants thematically referred to parents' "wishes," "choices," "options," and "preferences" when discussing vaccinations during interviews and observations. Such "choice talk" is supported by the political option to not vaccinate in Switzerland in accordance with non-mandatory FOPH recommendations. Dr. Schmidt (FR-CH, anthroposophic medicine) emphasized the importance of choice, stating his goal was to "recommend normal vaccinations, according to the Swiss schedule," but that it was "the parents' choice," that they sometimes have "different preferences," and "wish to vaccinate less or later." He found it "important" to "find something that is adapted to the parents."

Observations with Dr. Buchman (GE-CH, TCM and acupuncture) provided insight into how providers individualized the discussion. Observation notes report the following with a

hesitant mother of a 2-year-old daughter. The consultation lasted 55 minutes, 50 minutes of which were attributed to vaccination:

> The mother nodded and took out two sheets of paper covered in handwritten notes (…) The mother said that she was unsure if she should vaccinate her daughter and that her husband knew some people who said they had been harmed by vaccinations. They were not sure if this was true, but it made her have doubts. She said she was generally a fearful and careful person, so hearing things like that from her husband's friends scared her. (…)
>
> Dr. Buchman said she was not against vaccinations but preferred alternative schedules. She also stated that she did not vaccinate during the full moon, or two days before or after, and that she always tested vaccines "kinesiologically" before administering them.

Dr. Buchman then personalized the discussion by considering "kinesiology reactions." With the daughter in the mother's lap, the doctor applied pressure to the mother's arms, held at a 90º angle, while her daughter held the vaccine-containing syringes. If the mothers' arms dropped, it meant that the daughter would not tolerate the vaccine. Her arm dropped slightly for the Infanrix® vaccine (diphtheria-tetanus-pertussis-poliomyelitis-haemophilus influenzae type B) but not Boostrix®-Polio (diphtheria-tetanus-pertussis-poliomyelitis). Dr. Buchman concluded that the mother should elect for Boostrix-Polio if she chose to vaccinate.

CAM providers adapted vaccination discussion to families' specific social milieu for context-specific recommendations. They sought to gauge relative risks of exposure to VPD and parents' abilities to take care of their child in cases of illness. For example, in this excerpt from observation notes, Dr. Schmidt (FR-CH, anthroposophic medicine) discussed vaccines for the 2-month-old son of a 26-year old mother, a primary school assistant:

The mother spontaneously brought up vaccinations. Seemingly apprehensive and hesitant, she explained, “For vaccines, we will do only the most basic ones. I prefer waiting, and I only want the most important ones.” She was unsure which ones were most important and asked for recommendations.

Dr. Schmidt asked if the son went to a nursery. She said that she did not intend to send him. The doctor began explaining the Swiss recommendations, stopping to ask the mother if she had female friends with children. She said that there were no children in her social entourage and that she always asked friends to disinfect their hands before holding her son. The mother glanced at the schedule and asked about minimum recommendations. He explained that it was difficult to determine and that it was her choice: “It’s up to you to decide.”

CAM providers considered patients individually without actively pursuing public health goals of herd immunity and disease eradication with the common thread tying their approaches together being how they put the parents’ contexts, concerns, and wishes at the center of the discussion. Dr. Welty (GE-CH, anthroposophic medicine) explained during an interview, “The most important thing for me in the end is not what you vaccinate, or if you vaccinate, but the decision-making path.” Most providers reported following up with non-vaccinated children at later consultations to see if parents had changed their minds or reflected further. During interviews, participants reported pointing out the potential for social exclusion and disapproval toward parents brought about by non-vaccination, explaining that such a choice might not be socially acceptable in certain daycare centers, hospitals, or schools. We also witnessed similar explanations about potential social exclusion during consultation observations. Several providers argued that having healthcare professionals who

accept non-vaccination or hesitancy might do families a favor. They explained that through their acceptance of these parents, they could build better rapport and perhaps lead to later vaccination. Dr. Schmidt (FR-CH, anthroposophic medicine) explained, "I have the impression that if we take the time and explain it well, the majority will end up vaccinating. Maybe they vaccinate less, but we can still get them vaccinated."

4. Discussion

CAM providers' willingness to not systematically adhere to Swiss vaccine recommendations might partially frame them as opponents in the vaccine narrative described by Heller (2008). The majority of the evidence we gathered, however, calls anti-vaccination CAM provider stereotypes into question. Participants were overall ambivalent or favorable towards vaccination and had nuanced, context- and vaccine-specific views, despite being markedly aware of the social consequences of questioning vaccination, with the example of Dr. Laurin (FR-CH, anthroposophic medicine) recognizing that questioning vaccination can be a "career killer." However, providers' doubts about vaccinations for all patients stemmed from their expressed desires to consider each patient individually. Practitioners also took their previous clinical experiences and patients' suspected adverse vaccine events into account as evidence to be weighed in vaccination reflections. The inclusion of experiential evidence into CAM providers' considerations for clinical practice and recommendations raises larger epistemological questions about the role of evidence, and the legitimacy of different types of evidence, in patient-provider interactions.

Through their qualitative work on CAM users, Attwell and colleagues (2018) defined CAM users' and providers' relationships with each other and to vaccine hesitancy as *symbiotic*. Our findings support their argument that parents and CAM providers "provide

each other with 'resources' that enable them to thrive together" (p. 111). Our results, particularly from ethnographic observations of vaccination consultations, highlight the importance of patients' ability to exercise agency in vaccination decisions, with providers seeking to enhance this agency by inviting parents to actively partake in decision-making. Providers' roles were not prescriptive; rather, they acted as medical advisors who informed and encouraged parents to take responsibility for their choices. This echoes what Dubé et al. (2013) found when comparing medical doctor and midwife roles in vaccine discussions in Quebec; doctors adopted "education-information" stances to "convince" parents, whereas midwives adopted a "neutral stance" by informing patients of the advantages and disadvantages while leaving the decision to the parents (p. 242). Research in other settings has likewise found that midwives emphasize parental choice and neutrality during vaccination consultations (Pearce et al., 2008; Attwell et al., 2018b).

The literature on provider communication about vaccination is not uniform. While some researchers have documented that adopting a presumptive communication style with parents is associated with increased vaccination uptake (Opel et al., 2013), others have documented that trying to convince patients often-times backfires, as such communication can be perceived as condescending, belittling, or patronizing (Ball et al., 1998; Kahan, 2013; Nyhan et al., 2014; Masaryk & Hatoková, 2016).

With the message that CAM providers *treat humans and not herds* emanating from our data, it is tempting to castigate them as adversaries to public health goals of preventing spread of disease. Brunson and Sobo (2017) urge us, however, to "get past" polarized visions on vaccination to further understand the multidimensional aspects of vaccination decision-making. Although the CAM practitioners in our study may not have proactively pursued official vaccination recommendations, many argued that continued investment of time and effort with parents eventually led to vaccination. Through their engagement in dialogue with

parents over time, providers undertake work that assuages some of the more complex determinants of VH related to augmenting patient agency, such as parents' adherence to 'healthism' (Greenhalgh & Wessely, 2004), healthcare consumerism (Tomes, 2001; O'Hara, 2013), and parent autonomy in decision-making (Armstrong, 2014). The caveat is that, depending on one's epistemological stance on what counts as evidence and informed decision-making, CAM providers' willingness to stray from recommendations through individualization could potentially bring parents to make decisions leading to illness through non-vaccination.

Our results call us to further consider the role of individualized healthcare in vaccination discussions, which aligns with other current medical and public health efforts. Such measures are currently in vogue and seek to bring individualized, personalized, and patient-centered approaches to the forefront of healthcare (Tutton, 2012; Rose, 2013; Holt et al., 2016; Evangelatos et al., 2018). Gofen and Needham (2015) analyzed healthcare professionals' discourses around personalized approaches to vaccination noncompliance in Israel and noted how "personalization appears to be a 'quick fix' to increase compliance," but cautioned that public health practitioners "may be further undermining the broader argument that vaccination can be safely administered as a standardized intervention, and discrediting the notion of a public duty to uphold herd immunity" (p. 278). Furthermore, a systematic review on vaccine hesitancy and communication showed that individualized, participatory formats might be preferable in clinical practice but concluded that more work was needed (Connors et al., 2017).

Since vaccination programs rely upon high compliance for success in terms of herd protection, individualizing the approach might seem counterproductive. However, framing public health efforts to address VH (and not solely on rejection or compliance) for the minority of parents who are vaccine hesitant recognizes how VH determinants are linked to

677 larger questions of patients' trust of healthcare professionals, expert opinion, advice and
678 authority, and perceptions of the influence of financial interests in science. As such,
679 discussions can be conducted in ways that are individually meaningful to vaccine hesitant
680 patients.

681 From a public health perspective, this argument might not be an easy pill to swallow
682 because it moves away from the prevalent *one-size-fits-all* approach, which is how
683 vaccination has historically been framed. Addressing *vaccine hesitancy* and addressing
684 *diminishing immunization rates* might not always be the same thing and may require different
685 tools. Efforts could therefore be tailored towards vaccine hesitant individuals in clinical
686 practice in order to address specific concerns. Rather than focusing on the epistemic divide
687 between CAM and biomedicine, which has been documented here and elsewhere, we propose
688 that efforts to address VH and improve patient care, for that matter, can revolve around areas
689 where CAM and biomedicine can agree. Both will likely find common ground concerning
690 improved patient communication and relationships.

691 Larson et al. (2014) argue that multidisciplinary approaches, which are "broad in scope
692 but context-specific," (p. 2156) are necessary to understand the underlying factors of VH.
693 Our qualitative results provide insights specific to Switzerland but with potential implications
694 for other high-income countries, where research and patient interest in CAM is high (Italia et
695 al., 2014; Hart, 2017). We should nonetheless be cautious in generalizing our findings. Our
696 sample size of 17 CAM-oriented providers was composed of voluntary participants. Their
697 participation and generally favorable or ambivalent vaccination views might result from a
698 vested interest in vaccination and more thought-out perspectives than those of presumably
699 more vaccine-hesitant or vaccine-opposed providers who declined to participate. While our
700 approach to observe vaccination consultations was innovative and revelatory, this method can
701 pose specific challenges, such as seeking approval from both parents and providers before the

observations begin, which can disrupt the natural flow of patient-provider interactions. Additionally, the presence of a researcher in a consultation room might be perceived as intrusive and potentially influence the ways participants interact. Finally, our sample was heavily represented by CAM providers trained as medical doctors, which seems to be a particularity of CAM in Switzerland (Hart, 2017). Future work should involve wider ranges of CAM perspectives and would benefit by focusing on patient-provider relationships and interactions.

5. Conclusions

Our study provides important novel insights into vaccination consultations with CAM providers in Switzerland. To our knowledge, such firsthand data on CAM practitioner discourses and practices regarding vaccinations, particularly combining qualitative interviews with ethnographic observations of consultations, have not been documented in the literature. This triangulation of qualitative methods allowed us to discuss CAM providers' discourses about their experiences and perspectives (i.e. what they said) in relation to their practices *in situ* (i.e. what they did), which both demonstrated their individualized approaches to vaccination in consultations.

Additional research could benefit from considering patient use of CAM, biomedicine, and VH on a larger scale. In addition to gathering socio-demographic information and other drivers of VH and under-immunization, further studies could include variables demonstrated as being consequential to parents, such as exercising agency in healthcare decisions, trust in medical authority, and satisfaction in patient-provider interactions. Future research could also explore emulating how CAM providers engaged with parents in this study; they established parent knowledge and views on vaccination, included parent wishes and concerns, and

incorporated patients' health and social contexts into vaccination discussions. Undertaking such efforts might not be easy. Establishing trusting relationships between patients and healthcare providers in clinical settings takes time, resources, and communication training and may benefit from policy maker support in encouraging incentives for providers to engage in lengthier consultations. We argue that engaging vaccine hesitant patients in such a way can improve both vaccine communication and patients' experiences in healthcare encounters by activating patient agency in vaccination decisions.

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