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Research Report

Cultural difference in attitudes towards stuttering among British, Arab and Chinese students: Considering home and host cultures

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Abstract

Background: Geographical and cultural differences have been shown to affect public attitudes towards stuttering. However, increasingly for many individuals in the world one's birthplace culture (or home culture) and culture in their local geographical environment (or host culture) are not the same.
Aims: The effects of home culture and host culture in shaping the attitudes towards stuttering among students with British, Arab and Chinese home cultures attending one British university were explored. The effects of host culture were investigated by considering the time lived in the UK for Arab and Chinese students.
Methods & Procedures: The study used a descriptive survey design that included a standardized self-delivered questionnaire: *the Public Opinion Survey of Human Attributes—Stuttering (POSHA-S)*. Purposive sampling was carried out thorough volunteer mailing lists, student societies and personal contact. The final sample of 156 university students included 51 British, 52 Arab and 53 Chinese students.
Outcomes & Results: Overall stuttering score (OSS), which is indicative of attitudes towards stuttering, was highest for British participants (mean = 30) and lowest for Chinese participants (mean = 13), with Arab participants falling in the middle (mean = 21). The differences in attitudes between the three groups were statistically significant, suggesting that home culture is a contributor to attitudes towards stuttering. A post-hoc item analysis of the *POSHA-S* revealed numerous specific differences in attitudes towards stuttering between the three groups, including differences in the attribution of the aetiology of stuttering, their role in helping people who stutter (PWS) and sympathy toward PWS. Time lived in the UK—a proxy measure for the role of host culture—did not significantly influence the attitudes of Arab and Chinese respondents.
Conclusions & Implications: To varying degrees, all three groups had evidence of stereotypical stuttering attitudes. Nevertheless, given similar ages and student status in the same university, observed respondent differences confirm previous research documenting geographical influences on stuttering attitudes in Western versus East Asian and Middle Eastern samples. The study also provides evidence that home culture was influential in shaping attitudes towards stuttering, but host culture was not a significant contributor.

Keywords: attitudes, stuttering, culture, stigma, POSHA-S.

What this paper adds

What is already known on the subject

- Public stereotypical beliefs towards stuttering are found across the world and hinder the quality of life among PWS. Different cultures have unique stereotypical beliefs towards PWS.

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What this study adds to existing knowledge

- To the best of our knowledge, no other study has investigated specifically if individuals who live in the same geographical location but have different home cultures, have similar or differing attitudes towards PWS. Results provide preliminary evidence that the home culture of an individual was influential in shaping attitudes towards PWS, but host culture, measured as the length of time living in the current geographical location, did not have a significant relationship with attitudes towards stuttering.

What are the potential or actual clinical implications of this work

- This study highlights that culturally sensitive clinical practice should not be based on just the culture of the region but should take home culture into consideration as well, and clinicians should discuss cultural perceptions of stuttering with clients in clinical practice.

Introduction

Stuttering is a fluency disorder that affects approximately 1% of the world's population independent of the age, gender and social status (Guitar 2014). One reason why stuttering can have a significant negative impact on people's lives is because it is met with stigma across the lifespan (Boyle and Blood 2015). Stigma refers to a 'deeply discrediting' attribute that is seen as less valuable and desirable in the eyes of society and living with such an attribute can lead to negative social outcomes for individuals (Goffman 1963: 3). Because stuttering occurs within social contexts, people who stutter (PWS) may be particularly vulnerable to encountering stigma (Boyle and Blood 2015). Negative stereotypes are one way in which stigma associated with stuttering manifests. Compared with people who do not stutter, PWS are more likely to be perceived as possessing certain character traits. Specifically, PWS are more likely to be stereotyped as shy, anxious, nervous, quiet, tense, introverted, fearful, frustrated, withdrawn, avoidant and insecure (Betz *et al*. 2008, Boyle and Blood 2015).

Given that negative stereotypes and prejudicial attitudes associated with stuttering are widespread, PWS routinely encounter social devaluation in their day-to-day lives (MacKinnon *et al*. 2007). How others react towards stuttering and how PWS respond to these reactions has a considerable impact on the lives of PWS (Kasbi *et al*. 2015, Yaruss and Quesal 2004). Social penalties for stuttering can reduce quality of life (Craig 2010) because they can contribute to (1) an avoidance and fear of speaking; (2) feelings of not being taken seriously; (3) a difficulty with 'fitting in' and forming relationships during school years; (4) a feeling of being misunderstood, unsupported and isolated; and (5) limited career choices and opportunities (Nang *et al*. 2018). Thus, in order to improve quality of life among PWS, the stigma associated with stuttering, and how to counteract it, is an important topic that warrants further research.

Moreover, there is evidence that stereotypical beliefs and hostile social interactions towards PWS begin to form in early childhood (Guitar 2014; Weidner *et al*. 2017). For example, pre-schoolers who do not stutter have been observed to mock, ignore and interrupt their peers who stutter during moments of stuttering (Langevin *et al*. 2009). Similarly, in a study by Betz *et al*. (2008), university students applied negative stuttering stereotypes to children as young as 3 years old who were labelled as stuttering. In a comparison of attitudes towards stuttering in American and Turkish preschool children, Weidner *et al*. (2017) found Turkish and American preschool children demonstrated similar attitudes towards stuttering, even though Özdemir *et al*. (2011) reported large differences between Turkish adults and American adults from other studies (e.g., Weidner *et al*. 2017). This finding indicates that even if the stuttering stereotype is established at an early age, it is shaped by the culture in which the individual has been reared.

Although public stigma associated with stuttering is a global problem, there are differences in public attitudes associated with geographical location and culture that must be considered. For example, in today's increased globalization, it is common for individuals to identify with multiple cultural backgrounds, and one might be reared in a culture (or 'home culture') that is different from the culture of the broader society in which they are currently living (or 'host culture'; Lee 2010). The home culture is the culture in which the individuals are born and raised. It has a strong influence on individuals' beliefs, knowledge and information about the world which in turn has an effect on their behaviours (Cronk 2017). Moreover, cultural information spreads among individuals throughout interaction that takes place in their common environment (Sperber and Claidiére 2008). Hence, over time, with exposure, host culture might influence how individuals think and process information, and their view towards certain aspects of life might change (Berry 2015). Hence, it is worthwhile to investigate separately the potential roles of home and host cultures in attitudes towards stuttering, which was the purpose of the current study.

Attitudes towards stuttering across the world

Although the majority of studies investigating public attitudes towards stuttering have studied cultures from Western countries (e.g., St. Louis *et al*. 2014, 2016), there are also studies investigating attitudes towards stuttering in other parts of the world (e.g., Al-Shdifat *et al*. 2018, Ip *et al*. 2012, Özdemir *et al*. 2011). Cumulative findings from existing studies suggest that while there are some similarities in attitudes towards stuttering among people from different regions, there are also considerable differences (St. Louis 2015). For instance, public attitudes towards PWS tend to be more positive in Western countries compared with Middle East and Asian countries (El-Adawy *et al*. 2020, St. Louis 2015). These differences are thought to represent artefacts of the unique blends of culture, nationality, language, religion and ethnicity of each country (St. Louis 2005). Compared with people living in other parts of the world, people who live in Middle Eastern countries are more likely to attribute the aetiology of stuttering to religious or supernatural causes (e.g., an act of God, a virus, demons and spirits) and are more likely to think it is helpful to fill in words for PWS or tell them to slow down or relax (Al-Shdifat *et al*. 2018, El-Adawy *et al*. 2020, Özdemir *et al*. 2011). People living in East Asia, however, are more likely to attribute the aetiology of stuttering to learning or habit, complex reasons, or unknown causes (but not genetics) and think that PWS should hide their stuttering (Iimura *et al*. 2018, Ip *et al*. 2012, Ming *et al*. 2001).

Research aims

A number of studies investigate public attitudes towards stuttering in different geographical locations, and a comparison across these studies could be made to better understand differences in attitudes towards stuttering associated with geographical location. Yet, a limitation of the existing literature is that it attributes the broader culture of a geographical location to all the individuals living in that area and does not take individuals' home culture into consideration. The current study aims to fill this gap by investigating attitudes towards stuttering among individuals within the same geographical location who have different home cultures. Specifically, we account for the unique roles of both home culture and host culture in shaping attitudes towards stuttering. Through the use of a survey design, we investigated attitudes towards stuttering among university students in the UK in three different cultural groups: one group in which the home and host cultures were the same (British) and two groups in which the home and host cultures were different (Arab and Chinese). We have chosen British, Arab and Chinese students because (1) British, Chinese and Arab students were the most prominent cultural groups from the West, Asia and Middle East within the university; and (2) previous research has indicated that Middle Eastern and Asian attitudes were less aligned with the current state of the knowledge about stuttering, less empathetic or less informed than those from the West (St. Louis 2015). Also, as a first step in exploring the potential influence of host culture on attitudes towards stuttering, we investigated if time spent in the host culture (the UK) predicted attitudes towards stuttering among Arab and Chinese participants.

Methods

Ethical approval for this survey study was granted by the first author's affiliated university (#024040).

Participants

Participants were recruited via purposive sampling through the use of mailing lists (volunteer and student societies) and in-person personal contacts at the university library. To be included in this study, participants had to self-identify as British, Arab or Chinese, and they had to be currently residing in the UK, attending the first author's affiliated university. To increase the likelihood that Arab and Chinese participants were proficient enough in English to understand and complete the questionnaire, students who were taking pre-sessional courses (or courses for students with emerging English language skills) were excluded.

In total, 167 participants (mean = 23 years old) responded to the questionnaire. Of the 167 participants, 11 were excluded because they either did not complete the questionnaire or they were international students from countries that were not the focus of this study. The final sample of 156 students consisted of 51 British students (mean = 22 years), 52 Arab students (mean = 25 years) and 53 Chinese students (mean = 23 years). Additional demographic details are displayed in table 1. Of note, not all Arab participants were born in Arab countries, and not all the Chinese participants were born in China; however, these participants reported that they were raised in homes where the culture was, respectively, Arab or Chinese, and they self-identified as belonging to the respective cultural group. Also, except for four Arab participants, all other Arab and Chinese participants were international students, born and raised in their home countries, who came to the UK for undergraduate or postgraduate studies.

Survey instrument and procedures

The Public Opinion Survey of Human Attributes—Stuttering (*POSHA-S*) (St. Louis 2011) was used for

Table 1. Demographic information of the sample ($n = 156$)

		British	Arab	Chinese
Gender[a]	Male	23	21	12
	Female	28	31	41
Current level of education	Undergraduate	40	24	8
	Master's	10	9	35
	Doctorate	1	19	10
Time lived in the UK	< 1 year		11	23
	1–5 years		30	27
	5–10 years		6	3
	≥ 10 years	51	4	
Place of birth	UK	50	4	
	Egypt		9	
	Palestine		1	
	Born in the UK, grew up in Libya		1	
	Iraq		1	
	Jordan		1	
	Saudi Arabia		20	
	Kuwait		6	
	Lebanon		1	
	United Arab Emirates (UAE)		6	
	China			48
	Taiwan			2
	Hong Kong			1
	Malaysia			1
	Singapore			1
	Unspecified Arab country		2	
	Germany	1		

Note: [a]Participants were not able to give non-binary genders as this is not an option on the original POSHA-S, but they were free not to indicate their gender by simply omitting the question.

data collection. The *POSHA-S* is a standard measure for investigating public opinions towards stuttering that has been used around the world and is valid, reliable and user friendly (Arnold and Li 2016, Li et al 2016, St. Louis 2012c). The *POSHA-S* has three sections. In the first section, participants are asked some demographic information and to self-rate their physical and mental health, their abilities to learn new things, and to speak, as well as their life priorities. In the second section, participants' attitudes towards stuttering and four other human attributes from which two are assumed to be negative (mental illness and obesity), one positive (intelligence) and one neutral (left-handedness) are compared. In the last section, participants' attitudes towards stuttering are explored in more detail by investigating participants' beliefs and reactions towards stuttering (St. Louis *et al*. 2016).

The items in the *POSHA-S* are grouped together to form 11 components (e.g., 'beliefs about causes of stuttering'). The means of various components are grouped to make up three sub-scores, two of which are related to stuttering attitudes ('Beliefs about PWS' and 'Reaction to PWS'), and one related to obesity and mental illness attitudes. The mean of the two sub-scores related to stuttering make up the overall stuttering score (OSS) (St. Louis 2011). Table 2 shows how items, components and sub-scores related to stuttering are grouped together. The *POSHA-S* was originally developed for pen and paper delivery, but similar results are obtained through online administration (St. Louis 2012b). In the current study, participants completed the *POSHA-S* online after being contacted via email. To make it more suitable for the context of the study, the word *stuttering* was replaced with its British version *stammering* in all parts of the questionnaire, and some changes were made to the demographic section to fit this study's population. For example, the question related to job or work situation was deleted as all the participants were university students. Otherwise, the questionnaire was unchanged.

Data analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS 25.0). The *POSHA-S* responses were scored according to the standard protocol, such that −100 was the lowest possible score indicating the most negative attitude, 0 was neutral, and 100 was the highest possible score indicating the most positive attitude. The scores reflect the mean scores or attitudes of the whole cultural group, not the individual. Items were reverse scored when it was appropriate to do so. The mean score of each item, component, sub-score and the OSS were calculated for each cultural group. Further

Table 2. . Mean scores for the beliefs, reactions and knowledge of stuttering and PWS of the three groups

	British	Arab	Chinese
Belief about PWS sub-score	48	34	26
Traits/personality component	37	15	5
Have themselves to blame[a]	90	67	31
Are nervous or excitable[a]	22	−15	0
Are shy or fearful[a]	0	−6	−17
Source of help component	30	24	10
SLTs	88	92	89
Other PWS	47	6	21
Doctors[a]	−48	−27	−79
Cause component	43	23	21
Genetic inheritance	33	21	64
Learning or habit[a]	−20	12	−11
A very frightening event[a]	12	−4	−42
An act of God[a]	86	−6	71
A virus or disease[a]	53	40	−13
Ghosts, demons or spirits[a]	92	73	58
Potential component	82	75	69
Can make friends	100	92	94
Can lead normal lives	96	88	81
Can do any job	65	65	26
Can have a job requiring judgement	68	53	75
Reaction to PWS sub-score	11	9	0
Accommodating/help component	56	54	31
Act normal	90	87	64
I should help	−29	−30	17
Fill in the words[a]	47	43	2
Tell to slow down or relax[a]	51	40	−42
Make a joke[a]	94	92	81
Should hide their stutter[a]	84	87	60
Distance/sympathy component	40	30	7
Feel comfortable or relaxed	59	63	15
Feel pity[a]	20	35	30
Feel impatient[a]	76	85	63
Concerned if doctor stuttered[a]	78	42	23
Concerned if neighbour stuttered[a]	98	88	50
Concerned if sibling stuttered[a]	69	25	0
Concerned if I stuttered[a]	−4	−10	−49
Impression of PWS	13	8	−6
Wanting to stutter	−52	−70	−68
Knowledge/experience component	−34	−32	−49
The amount known about PWS	−33	−37	−62
People known who stutter	−82	−84	−93
Knowledge from personal experience	14	23	6
Knowledge source component	−17	−18	13
Knowledge from TV/radio	43	15	55
Knowledge from print	−47	−57	4
Knowledge from the internet	16	26	56
Knowledge from school	−31	−20	10
Knowledge from specialists	−65	−60	−60
Overall stuttering score (OSS)	30	21	13

Notes: [a]Reverse scored items.
Scores could range between −100 and 100, with higher scores indicating positive attitudes.

comparison of the mean scores was conducted using multivariate analysis of variance (MANOVA), separate univariate analyses of variance (ANOVA) and post hoc *t*-tests. In the ANOVA analyses, corrections for multiple comparisons were applied using Bonferroni when equity of variance could be assumed and Games–Howell when equity of variance could not be assumed based on Levene's test results.

Results

First, attitudes towards stuttering were compared across the three cultural groups. That is, the mean *POSHA-S* scores for the OSS, sub-scores, components and individual items were calculated separately for British, Arab and Chinese participants (table 2) and they were compared using MANOVA, with cultural group as the fixed factor. Results indicated that there was a statistically significant effect of home culture on attitudes towards stuttering, Pillai's Trace = 1.41, $F(100, 124) = 2.7$, $p < 0.001$, $\eta_p^2 = 0.705$. To explore the ways in which attitudes might differ between cultural groups more specifically, post-hoc item analyses were conducted using ANOVA and *t*-tests.

Post-hoc results indicated that scores for 10 items significantly differed between British and Arab participants, 25 items between British and Chinese participants, and 19 items between Arab and Chinese participants (table 3). For the significantly different items among the three groups, Cohen's *d* effect sizes ranged from 0.47 to 1.42. Overall, British participants had the most positive OSS scores, followed by Arab participants and then Chinese participants.

Among all 10 items that were significantly different between British and Arab participants, British participants had more positive attitudes in all items with effect sizes ranging from $d = 0.47$ to 1.42. Among the 25 items that were significantly different between British and Chinese participants, British participants had more positive attitudes for 22 items and Chinese participants had more positive attitudes for 3 items with effect sizes ranging from $d = 0.51$ to 1.19. Lastly, among the 19 items that significantly differed between Arab and Chinese participants, 14 were more positive for Arab participants and 5 were more positive for Chinese participants with effect sizes ranging from $d = 0.49$ to 1.06. All these effect sizes can be interpreted as 'moderate' to 'very large'.

Looking at magnitude of differences in another way, St. Louis (2012c, 2015) reported that if 30% or more of the 60 items of *POSHA-S* are significantly different from each other, then the differences between the groups could be interpreted as a 'large', and if 10−30% significant differences would indicate 'moderate' differences. Of course, these percentages are influenced by sample size. Of the 60 total items on the *POSHA-S*, 12 items (or 20% of total items) significantly differed between British and Arab participants, 29 items (48%) between British and Chinese participants, and 23 items (38%) between Arab and Chinese participants. Hence,

Table 3. Significant *t*-scores based on post-hoc results and a comparison of the groups

	British–Arab	British–Chinese	Arab–Chinese
Belief about PWS sub-score	$t(101) = 3.45, p = 0.002$	$t(102) = 4.76, p < 0.001$	
Traits/personality component		$t(102) = 2.92, p = 0.012$	
Have themselves to blame	$t(101) = 2.40, p = 0.049$	$t(101) = 4.62, p < 0.001$	$t(102) = 2.55, p = 0.033$
Are nervous or excitable	$t(101) = 2.79, p = 0.017$		
Source of help component[a]		$t(102) = 3.02, p = 0.009$	
Other PWS [a]	$t(100) = 2.83, p = 0.016$		
Doctors		$t(101) = 2.65, p = 0.026$	$t(102) = 3.94, p = 0.001$
Cause component[a]	$t(101) = 3.02, p = 0.009$	$t(102) = 3.36, p = 0.003$	
Genetic inheritance[a]			$t(103) = -3.30, p = 0.004$
A very frightening event[a]		$t(102) = 3.58, p = 0.002$	$t(103) = 2.49, p = 0.042$
an act of God	$t(101) = 7.21, p < 0.001$		$t(102) = -5.42, p < 0.001$
A virus or disease		$t(102) = 4.31, p < 0.001$	$t(103) = 3.79, p = 0.001$
Ghosts, demons or spirits	$t(101) = 2.62, p = 0.028$	$t(101) = 3.11, p = 0.008$	
Can do any job		$t(102) = 2.60, p = 0.029$	$t(103) = 2.76, p = 0.019$
Reaction to PWS sub-score[a]		$t(102) = 2.65, p = 0.027$	
Accommodating/help component[a]		$t(102) = 4.69, p < 0.001$	$t(103) = 4.22, p < 0.001$
I should help[a]		$t(102) = -2.96, p = 0.011$	$t(101) = -2.98, p = 0.010$
Fill in the words[a]		$t(102) = 2.76, p = 0.02$	$t(102) = 2.52, p = 0.039$
Tell to slow down or relax[a]		$t(102) = 6.08, p < 0.001$	$t(103) = 5.41, p < 0.001$
Should hide their stutter			$t(103) = 2.75, p = 0.02$
Distance/sympathy component[a]		$t(102) = 4.67, p < 0.001$	$t(103) = 3.34, p = 0.003$
Feel comfortable or relaxed		$t(102) = 2.89, p = 0.013$	$t(103) = 3.47, p = 0.002$
Concerned if doctor stuttered	$t(101) = 2.49, p = 0.039$	$t(101) = 3.86, p = 0.001$	
Concerned if neighbour stuttered		$t(101) = 4.52, p < 0.001$	$t(102) = 3.38, p = 0.003$
Concerned if sibling stuttered	$t(101) = 2.69, p = 0.023$	$t(101) = 4.22, p < 0.001$	
Concerned if I stuttered		$t(102) = 2.60, p = 0.029$	
The amount known about PWS		$t(99) = 2.96, p = 0.011$	$t(98) = 2.75, p = 0.019$
Knowledge source component[a]		$t(102) = -2.81, p = 0.017$	$t(103) = -2.89, p = 0.013$
Knowledge from print		$t(102) = -2.82, p = 0.016$	$t(102) = -3.45, p = 0.002$
Overall stuttering score[a]	$t(101) = 2.79, p = 0.018$	$t(102) = 5.47, p < 0.001$	$t(103) = 2.68, p = 0.025$

Notes: These items were significantly different between two groups at $\alpha < 0.05$.
[a] Items where Levene's test was not significant, and the analysis was conducted using Bonferroni; for the other items, Games–Howell was used.
Positive *t*-values show that the first group had more positive attitudes on that item, vice versa for the negative *t*-values.

the differences between (1) British and Chinese participants and (2) Arab and Chinese participants were statistically significant and mostly large differences.

To investigate the potential role of host culture on attitudes towards stuttering, time spent in the UK was used as a proxy variable for Arab and Chinese participants. A MANOVA with time lived in the UK as a fixed factor was conducted, Pillai's Trace = 2.30, $F(165, 45) = 0.9$, $p = 0.648$, $\eta_p^2 = 0.77$. The results indicated that time lived in the UK did not significantly affect attitudes towards stuttering.

Discussion

The purpose of this study was to investigate the effects of home culture and host culture in shaping attitudes towards stuttering. This study adds to the current literature by showing that the home culture of an individual is influential in shaping attitudes towards PWS. On the other hand, the host culture, as measured by the time spent living in the current geographical location, did not have a significant relationship with attitudes towards PWS. We begin this section with a discussion of the stuttering stereotypes that were shared between the three groups. Group differences and the role of home culture are then discussed. Finally, we explore potential reasons why time spent living in the host culture did not have an effect on Arab and Chinese participants' attitudes.

Similarities among cultural groups

Although the primary purpose of this study was to investigate cultural differences in attitudes towards stuttering, it is worthwhile discussing some similarities among the groups, or shared stereotypes. For example, all three groups shared the following stuttering stereotypes: (1) believing that PWS are shy or fearful; (2) indicating that that they would not want to stutter themselves; (3) indicating that they did not know anyone who stuttered; and (4) indicating that their knowledge about stuttering came mostly from television, radio and the internet where both sound and unsound information can be accessed (as opposed

to sources where information would be mainly reliable such as from school or specialist). These findings are important because they show that these specific stereotypical beliefs and reactions may be the most pervasive across different cultures.

Differences between cultural groups

Although there were numerous differences in attitudes towards stuttering, here we focus on four specific differences between the three cultural groups. These specific differences have been chosen because they were among the most significant differences as well as because we view them as having the greatest potential for preliminary clinical implications. These differences relate to (1) the attribution of the aetiology of stuttering, (2) the role of 'helping' PWS, (3) social distancing[1] and sympathy, and (4) the specific stereotype that PWS are nervous and excitable.

To varying degrees, all three groups correctly attributed the aetiology of stuttering (or the cause component) to genetics; however, each group also had various incorrect attributions of the aetiology of stuttering. For instance, Chinese participants were significantly more likely to attribute the aetiology of stuttering to emotional trauma and a virus or disease than the other cultural groups. This finding is consistent with research conducted by Ip *et al*. (2012). However, Ip *et al*. (2012) also found that Chinese participants were more likely to reject emotional trauma as the cause of stuttering, and this finding contradicts results from the current study. This difference in the findings might be due to (1) sampling method or (2) living in a different culture.

In the current study purposive sampling was used whereas Ip *et al*. (2012) used convenience sampling, both non-probability sampling methods. The way that the samples were obtained might have led to a difference in the results. However, the difference for rejecting emotional trauma is quite different between the studies. Chinese participants scored a low positive in Ip *et al*. (2012) but scored a medium negative in the current study. We submit that sampling alone cannot account for this difference, which suggests that there are differences in attitudes between Chinese individuals living in their home cultures and those living in host cultures. Moreover, British participants scored positive on rejecting emotional trauma as a cause for stuttering and the difference between the British and Chinese groups was a significant one. While we cannot claim that living in the host culture has likened Chinese participants' attitudes to the host culture, this shows that there might have been some influence of the host culture on Chinese participants' attitudes. More research is needed to better understand the reasons behind this difference. It is also noteworthy to mention that previous studies (Ip *et al*. 2012; Ming *et al*. 2001) found that Chinese participants were less likely to reject learning as a cause for stuttering and the evidence from the current study is in line with their findings. However, we also found that the other two groups were also less likely to reject learning as a cause for stuttering (no significant difference between the groups) showing that Chinese participants' attitude was similar to British and Arab participants on this item.

Another significant difference in the attribution of the aetiology of stuttering between cultural groups was that Arab participants were more likely to attribute stuttering to an act of God, which is consistent with the findings of previous studies (Abdalla and St. Louis 2012, Al-Shdifat *et al*. 2018). The authors of these studies explain this higher attribution to God in Arab samples as the effect of the religion, the dominant religion among Arabs being Islam. The attribution of the aetiology of stuttering to God could be explained by the concepts of *qadar*, which could be explained as divine foreordainment or predestination, and it means that there is a plan set for each individual by God (Ali and Leaman 2007). In a Muslim society when one says that stuttering is caused by God, this typically is not interpreted as a punishment from God, but as a part of God's divine plan, and it has neither a positive nor a negative connotation. This means that the individual was created as a person who stutters by God, and this is his *qadar*. Similarly, in a study conducted in Cape Town, South Africa, the attribution of the aetiology of stuttering to God was found to be higher than the other samples in the *POSHA-S* database (Abrahams *et al*. 2016). They explained this by highlighting that in African cultures, disability and illness are perceived from a spiritual perspective. When this finding is taken into consideration, it can be hypothesized that the higher attribution to God as the cause of stuttering is usually higher in cultures where disabilities are seen as coming from divine or spiritual sources. Accordingly, Arab participants' attribution of the aetiology of stuttering to God is likely a result of their home culture, where divine or spiritual sources have an influence on beliefs.

The role of helping PWS (or the accommodating/helping component) was another difference among the three groups. Chinese participants were significantly more likely to believe that they can help PWS, should fill in the words of PWS, and should tell them to slow down and relax than the Arab and British participants who in turn did not significantly differ between themselves. The higher probability of Chinese participants' tendency in filling in the words of PWS and telling them to slow down and relax was also found in a previous study by Ip *et al*. (2012). There is not a straightforward relation among these three items. However, it could be speculated that Chinese participants may be

more likely to extrapolate from their own experiences of typical disfluency, where they may have been feeling tense or nervous (MacKinnon *et al*. 2007). Accordingly, it could be that they are trying to help PWS by filling in PWS's words or telling them to slow down and relax. It is acknowledged that this is one potential interpretation, but more research is needed to better explain these results.

In terms of social distance and sympathy, Chinese participants were more likely to report stereotypical beliefs. For instance, all three groups reported that they would be concerned if they themselves were to stutter, and notably, Chinese participants were significantly more likely to be concerned if they stuttered than the British participants. In contrast, all three groups indicated that they would have little or no concern for stuttering in their doctors, neighbours and siblings, all scoring positively or zero on these items. However, there was still a statistically significant difference between the groups. Specifically, even if they stated that they would have little or no concern when their doctor, neighbour or sibling stuttered, Chinese participants were more likely than the other groups to feel some degree of concern if their neighbour stuttered, and Chinese and Arab participants were more likely than British participants to feel some degree of concern when their sibling or doctor stuttered. This difference among the groups might be due to the more individualistic nature of the British culture and more collectivistic cultures of Arab and Chinese participants' (El-Adawy *et al*. 2020, Ourfali 2015, Papadopoulos *et al*. 2013). This could be because in collectivist cultures group harmony is essential, and not conforming to group norms can lead to distress (Hook *et al*. 2009). This might explain the positive but lower score of Arab and Chinese participants on being concerned if their sibling or doctor stuttered and Chinese participants' concern for a stuttering neighbour.

Moreover, the score for concern when sibling stuttered was '0' for the Chinese participants, which is the equivalent of the *not sure* answer in the questionnaire. This is purely hypothetical, and the number of the siblings was neither asked to Chinese participants raised in China nor to those raised in Singapore, Malaysia, Hong Kong and Taiwan, limiting the validity of this hypothesis. There is a higher possibility for Chinese participants to be the only child of the family or be raised in a single child environment due to China's one child policy (Hesketh *et al*. 2005). This single child environment might have had an effect on Chinese participants' concern related to siblings, rendering it less relevant. However, future research related to the hypothesis between sibling numbers (both within the family and the broader community) and its effect on concern ratings is needed.

Finally, there were significant group differences related to the widely cited stereotypical belief that PWS are nervous and easily excitable, with British participants scoring positively, Chinese participants scoring neutral, and Arab participants scoring negatively where Arab participants were significantly more likely to hold this stereotypical perception towards PWS than British and Chinese participants. It also should be noted that British participants' score was not a high positive one, which shows that the nervous and easily excitable stereotype was also present among British participants, but to a lesser degree than the other cultural groups. One reason behind this difference might be that, since the 1950s, the UK has experienced an accelerated social and cultural change with the immigration of people with various nationalities, languages, and identities which could have produced a British culture that is more open to cultural diversity and different identities (Christopher 2015). Being raised in a culturally open environment might have had an impact in stereotype formation of the British participants in general, resulting in them having less stereotypical beliefs about PWS.

Importantly, we acknowledge that it is not always possible to explain the underlying reasons why people belonging to certain cultures believe and act in certain ways. It is also possible that differences between groups could be explained by factors other than culture (e.g., demographic variables, being familiar with someone who stutters; Arnold and Li 2016). However, our results provide strong evidence that home culture plays a significant role in shaping attitudes towards stuttering.

Time lived in the UK

Another aim of this study was to investigate whether the culture of the host country had an impact on the Arab and Chinese participants' attitudes towards stuttering. Results indicated that the time lived in the UK did not have an effect on attitudes towards stuttering, and participants held similar beliefs regardless of whether or not they resided in the UK for less than 1 year or more than 5 years. There is evidence showing that compared with adults, children hold similar beliefs about PWS across cultures (Weidner *et al*. 2017). This suggests that beliefs and attitudes towards stuttering are shaped by the culture and the environment in which individuals are raised. With the exception of four Arab participants who were born in the UK but raised in homes with a dominant Arab culture, all other Arab and Chinese participants were born and raised in their home countries and came to the UK for undergraduate or postgraduate studies. Because their beliefs and attitudes towards stuttering were already shaped and established by their home cultures, this limited the effect of the UK's culture

on their beliefs and attitudes towards stuttering. We can posit, therefore, that once the individual's beliefs or reactions towards stuttering are shaped and established, those attitudes are resistant to change from the experience living in other cultures.

Limitations and future directions

Although this study has several strengths, there were also some notable limitations. First, purposive sampling, a non-probability sampling method, was used, but a probability sampling method would increase generalizability in future studies. Although gender distribution of the participants does not affect the overall results of the *POSHA-S* (St. Louis 2012a), it does affect the scores of some of the components (e.g., women scoring higher accommodating/helping component while men scoring higher on sympathy/social distance component; Arnold and Li 2016); hence, the female-dominant distribution of gender in the current study is another factor that might limit the generalizability of the results.

A second limitation of the current study is that it is possible that the host culture did have an effect on attitudes towards stuttering, but the proxy measure used in the current study did not capture that effect. For instance, the time lived in the UK was coded categorically. In further studies it could be coded continuously. Moreover, further studies should include participants who lived in the host culture for longer time as it is possible that for the host culture to have an effect on attitudes towards stuttering, but it might require more time and exposure to the host culture. Using different, more thorough measures of host culture where (1) the time spent in the host culture and (2) the cultural experiences that individual encountered are accounted for, could be considered in future studies as well.

In terms of future directions, the *POSHA-S* is designed to show that selected stuttering attitudes (beliefs and self-reactions) exist within targeted cultural groups but does not allow for investigation of why these attitudes exist; thus, researchers can only draw inferences and hypothesize about the underlying reasons. Hence, in future studies, the findings could be later followed up by structured or semi-structured interviews to enable better and more in-depth understanding of the underlying reasons behind culture-specific attitudes towards PWS.

Moreover, culture-specific public awareness programs that not only take into account the host culture but also the home culture can be developed and implemented to lessen the negative stereotypes and attitudes towards PWS. For instance, Abdalla and St. Louis (2014) aimed to improve the attitudes of Arab teachers using a specially designed educational documentary, and they found that while the video was successful in changing the attitudes of pre-service teachers (all female), it was not successful in changing the attitudes of in-service teachers (all male). They have attributed this to the difference in teaching practices and beliefs among Arab teachers, Arab female teachers being more inclusive and cooperative than Arab male teachers. This shows that while developing culture-specific public awareness programmes not only the broader culture of the group (e.g., Arab culture) but also the more specific beliefs (e.g., beliefs of Arab male teacher) should be taken into consideration.

Finally, in terms of clinical practice, speech–language therapists (SLTs) should not assume that they understand their clients' conceptualization of stuttering, as it could be shaped and affected by a unique blend of how others within their home and host culture react towards stuttering. Hence, gathering information regarding clients' conceptualization of stuttering through conversation will be a positive step towards culturally sensitive clinical practice. Doing so will allow SLTs to not only base their practice on the culture of the extant geographical location but also to consider clients' home culture and the interaction between the two.

Conclusions

The current study provides preliminary evidence that the home culture of an individual is influential in shaping attitudes towards PWS. On the other hand, the host culture, or the current geographical location, did not have a significant relationship with attitudes towards stuttering for individuals in which home and host cultures were different. One cannot assume that every individual who lives in the same geographical area will belong to the same broader culture of a country. Hence, for culturally sensitive and inclusive practice, not just the broader host culture but also the home culture of the individuals must be considered. Since specific home cultural beliefs can lead to culture-specific unsubstantiated beliefs about PWS, not accounting for the home culture might lessen the effectiveness of public awareness programs and clinical practices. Understanding the beliefs that are unique to a culture and their probable underlying reasons will help in developing sensitive tools to modify the negative attitudes predominant in a culture.

Note

1. This now commonly used term does not mean 'physical distance' as a recommended to mitigate the spread of Covid-19 in the current global pandemic. Instead, it refers to people's level of acceptance of others outside of their social group according to its psycho/social meaning.

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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