National culture and trust in online health information

Mahmood Khosrowjerdi
Oslo Metropolitan University, Norway

Abstract
This article contributes to the ever-increasing body of research on online health information-seeking behaviour. Specifically, this study shows that national culture is a determinant of trust in online health information. A questionnaire-based survey collected the data from undergraduate students on the factors influencing their trust formation toward online health information. The cultural comparisons revealed differences between the trust formations of Americans, Chinese and South Koreans in the online health environment. The trust formation of the Chinese group was based on the three factors of information quality, information style and information verification. For the American group, the information quality, information style, ease of use and information verification were the four antecedents of trust. The South Korean group considered more clues during their trust formation process than the Chinese and American groups did. Furthermore, information verification was a stronger predictor of trust for the South Korean group. The findings were discussed in light of national culture theories, and the future research agenda was presented.

Keywords
Credibility, national culture, online health information, students, trust, usefulness

Introduction
The Internet is one of the main resources available for health information seekers (Andreassen et al., 2007; Fox and Duggan, 2013). The Internet is perceived as a reliable health source for adolescents (Beck et al., 2014). However, there are major concerns regarding the provided contents on health websites (Zhang et al., 2015) and the required health literacy of individuals to correctly evaluate, trust and use the provided information (Diviani et al., 2015; Hanik and Stellefson, 2011; Zhang, 2014). The overlooking of the noted concerns could result in unavoidable problems concerning the health of individuals (Fox, 2006: 8; Hart et al., 2004). These noted concerns have resulted in the concentration of many researchers being focused on the trust formation of consumers toward online health information (OHI).

Trust is the foundation for all transactions and collaborations in society (Castells, 2009: 16). From a psychological point of view, trust is an internal phenomenon which influences the individual’s decisions when it comes to adopting an object, action or system (Carter and Bélanger, 2005). Sociologists assume that trust is a mutual or interactive construct. That is, that trust is shaped based on the interactions of an individual with the surrounding environment, systems or society (Lewis and Weigert, 1985: 968). Thus, there is not an inclusive and universal definition of trust (Wang and Emurian, 2005).

Trust is very situational (Seckler et al., 2015), that is, A (trustor) relies upon B (trustee) to do an action (Hardin, 2002: 56). The trustee should have the credibility to be trusted by trustor. A qualitative analysis of focus group data (Metzger et al., 2010) revealed five cognitive heuristics people use to assess the credibility of online information, that is: (1) reputation (the reputation and benevolence of information provider); (2) validation of content (based on the source brand or in-group communications); (3) consistency (checking other sources to see if the information is solid); (4) expectancy violation (e.g. redirecting user to another source or asking for more personal information of user); and 5) persuasive intent (e.g. exposing users to advertisements).

Trust formation is an interactional and evolutionary process. A recent qualitative study (Lovatt et al., 2017) on trust formations of users in an online health forum ascertained three dimensions for trust. The structural dimension referred to the influence of characteristics of the information provider on users’ trust in information. The relational
dimension emphasized the relatedness of trust to the perceptions of other members of a person’s network. The *temporal* dimension showed the evolutionary nature of trust.

Hence, both internal (cognitive) and external (contextual) factors influence trust formation of individuals (Hilligoss and Rieh, 2008). As Ginman (2000: 184) states, our beliefs are not only based on our psychological characteristics but also they are constructed on our social interactions with other actors in society (family, groups, systems) and this social context alters our way of information reception or rejection.

OHI scholars operationalise and use the concept of trust differently. For instance, the perception of users toward OHI (Borzekowski et al., 2006; Kayhan, 2013), the intention to approve or reject the retrieved information (cf. Allam et al., 2014; Jones and Biddlecom, 2011), relying on the retrieved information or sources (Kim et al., 2011), access to unbiased information (cf. Burger et al., 2015), and the credibility and reliability of the information/source (Bansal et al., 2010; Oh and Kim, 2014) were among the many applied faces of trust in OHI literature.

In an effort to put an end to the ambiguities of trust conception, Johnson et al. (2015: 11) conceptualised the credibility judgment and usefulness perception of individuals toward OHI as the core criteria of trust. This operational definition of trust is used in this study. This notion of trust is in accordance with the applied concepts and faces of trust in the literature (Khosrowjerdi, 2016b) and with the used notions of trust available in online health environments such as credibility, trustworthiness and the usefulness perception of the users (Banaz, 2008; Jones et al., 2011; Payton et al., 2014; Smart et al., 2012).

Many factors influence trust in OHI. In particular, studies have confirmed the effect of gender (Allen Catellier and Yang, 2012; Borzekowski and Rickert, 2001; Nustad et al., 2008; Rowley et al., 2017), age (Allen Catellier and Yang, 2012; McKinley and Ruppel, 2014), education level (Johnson et al., 2016) and geographic location (middle-sized cities vs. big cities or countryside) (Montagni et al., 2014) on the trust formation of individuals toward OHI. However, two recent reviews on trust in the online health environment (Khosrowjerdi and Sundqvist, 2017; Sbaffi and Rowley, 2017) showed inconsistencies in the trust literature when it comes to understanding the trust formations of different groups of users in relation to OHI. These reviews called for more socio-cultural studies in this domain. In addition, both reviews suggested investigating trust in relation to OHI in ‘non-western’ societies.

This study aims to investigate the possible differences or similarities of the antecedents of trust in online health information (OHI) based on the cultural background of the individuals. This research will help the health practitioners and system developers to better understand the relationship between the cultural background of individuals and their trust formation in online health-related environments. This will help them to develop new systems, websites or applications based on the cultural preferences of the consumers. Furthermore, the findings could possibly be useful in responsive health information delivery. Thus, this study answers the following question:

- How could people’s cultural background characterise their trust formation toward OHI?

This research applied Hofstede’s national culture dimensions (Hofstede, 1991; 2001; Hofstede et al., 2010) and Hall’s (1989) categorisation of high vs. low context culture to explain the online trust formation of groups of individuals. These cultural dimensions and the rationale for their choice have been described as below.

**Theoretical framework**

**Hofstede’s national culture dimensions (abbreviated as HNCD)**

Hofstede (2001), a Dutch anthropologist, presented the six bipolar dimensions of national culture (Figure 1). Each dimension represents the score of a select society on a spectrum from low to high (0–100). If an example country scores low on the masculinity dimension (e.g. 36), then it is considered to be a feminine society, while a high score for a society in this dimension (e.g. 80) shows the masculinity of that particular society.
The first dimension of HNCD, individualism vs. collectivism, refers to the tightness or looseness of the ties or relations between individuals of a society (Hofstede, 2001: 225). In individualist societies, people are supposed to take care of themselves or their close family members, while in collectivist societies, people have in-group loyalties, and they must unconditionally be in service to other in-group members in order to show their loyalty (Hofstede, 2001: 225).

The second dimension, power distance, is the perception of the weaker members of society (e.g. children vs. parents, staff vs. managers, and citizens vs. authorities) of the agreeableness of the inequality of power (Hofstede, 2001: 98). The degree of agreeableness of power inequality is manifested in the relationships of an example individual with their family members, institutions and authorities (Hofstede, 1991: 32–36). For instance, in societies with a large power distance, children are supposed to be the followers of their parents (Hofstede et al., 2010: 67); the education process is injective, that is, that the teacher shows the academic road and the students follow it (Hofstede et al., 2010: 69); and finally, in the health system, doctors are considered to be superiors by their patients (Hofstede et al., 2010: 72). In societies with a small power distance, the parents respect the fact that children are equal to adults; the education process is interactive, that is, the teachers just accelerate the learning process; and finally, information sharing about health issues is vital in the context of doctor-patient relationships (Hofstede et al., 2010: 72).

According to HNCD, uncertainty avoidance is the degree of avoidance caused by being frightened in uncertain situations by individuals of a society (Hofstede, 2001: 161). In societies with high uncertainty avoidance, the stress is widespread in their family life; the children learn to differentiate and tag certain groups of people as being dangerous or dirty (Hofstede, 2001: 162). In addition, all education processes are planned and scheduled in advance (with strict rules), and it is assumed that there is one correct answer and that the learners can find it (Hofstede, 2001: 162). From an occupational point of view, changing one’s job is one of the most uncertain situations that someone can experience (Hofstede et al., 2010: 198). Societies with low uncertainty avoidance are characterised by their tolerance of ambiguous situations. In these societies, the children learn to respect diversity (Hofstede, 2001: 162); the learning process has no predetermined limit or boundary, in which the learning assignments are wide-ranging and mostly without schedule and the originality of the learner’s approach to solving an academic issue is respected (Hofstede, 2001: 162). Finally, changing one’s job is not a challenge in the lifespan of individuals in a low uncertainty-avoidant society (Hofstede et al., 2010: 198).

The fourth dimension, masculinity vs. femininity, portrays the separated or overlapped gender roles present in society (Hofstede, 2001: 297). Thus, masculinity implies the priority of society for expressing existence, championship, success and material rewards for a breakthrough. On the contrary, in feminine societies, humility, cooperation, quality of life and the care of the weak are of great importance (Hofstede, 2001: 297).

In HNCD, time orientation is the degree of the importance of history, or the futuristic tendencies of its citizens (Hofstede, 2001: 359). In other words, long-term orientation describes the community’s desire for a virtuous quest. Short-term orientation belongs to societies that are strongly inclined toward the establishment of an absolute truth (Hofstede, 2001: 359).

The sixth dimension, indulgence vs. restraint bipolar, revolves around the pace of community control over its impulses and demands (Hofstede et al., 2010: 281). According to Hofstede (Hofstede et al., 2010: 291), in indulgent societies, there is a higher proportion of happy individuals in the society. Most of the people are optimists, and the friendships and use of free time for enjoyment are important for its citizens. The society is generally more relaxed in its expectations, and more forgiving of people who deviate. On the other hand, in restraint societies, happiness is not widespread in society, leisure and friendships have a lower importance for people, scepticism is more prevalent, and the society is formal and disciplined, has clearly stated social norms, and rebukes individuals who stray from the norm.

**Hall’s categorisation of high versus low context cultures (abbreviated as HORIZON)**

Hall (1989) differentiated between high context (HC) cultures (e.g. Korea, Japan and China) and low context (LC) cultures (e.g. Switzerland, Germany and the USA), based on the different communication styles (p. 39). According to Hall, in HC cultures, information sharing is widespread in society and the messages are often simple but with deep meaning (p. 39). In LC cultures, the transmitted message must be complete (p. 101). In other words, in HC cultures, the transmitted message between sender and receiver is indirect, and the receiver requires the related contextual knowledge to recover it. In LC cultures, the message is direct and explicit (Merkin, 2009). It is worth mentioning that aligning HNCD with HORIZON revealed that HC cultures were mostly collectivist, and LC cultures were generally individualist societies (Hofstede et al., 2010: 110).

**The rationale for theory choice**

Both HNCD and HORIZON have been criticised by researchers. The major of concern towards HNCD is reported by researchers as quantifying the national culture into a limited number of dimensions, the problem of the replicability of country mean scores for each dimension,
the lack of representative samples in Hofstede’s early work (Baskerville, 2003) and finally, the low importance of national culture due to disappearing national borders as a result of globalisation (Hermeking, 2005: 201). However, Hofstede (2003) convincingly accounted for most of the criticisms. In addition, a review of HNCD in the literature (Søndergaard, 1994) showed the analytical power, successful replications, and the stability and validity of HNCD over time. In addition, Taras et al. (2012) stated that their meta-analysis of the studies allocated to HNCD led to national indices that had a reasonable correlation with all of HNCD. Finally, HNCD has been applied in the health domain too. For instance, researchers (Deschepper et al., 2008) showed that European nations with high uncertainty avoidance were more likely to use antibiotics and self-medication.

In spite of the numerous criticisms directed toward HNCD, HORIZON has not empirically been examined or criticised (Cardon, 2008; Hermeking, 2005). The researchers linked the scant criticism of HORIZON with the limited number of countries that have appeared in Hall’s early presentation of HC and LC, and Hall’s macro level of analysis. That is, focused on groups rather than quantifying national cultures (Hermeking, 2005: 201). A systematic review of HORIZON showed the importance of contexting in inter-cultural studies and concluded ‘... the fact that contexting has not been empirically validated should not necessarily be construed as a failure of the theory’ (Cardon, 2008: 423). Finally, HORIZON is popular in cross-cultural studies (cf. Merkin, 2009). HORIZON is a useful framework for explaining the information- and communication-related behaviour of different societies in the digital environment. Finally, both HNCD and HORIZON have been suggested by information scholars as being useful analytic tools for studying the information behaviour of groups of individuals (Khosrowjerdi, 2016a; Komlodi, 2005; Komlodi and Carlin, 2004; Wilson, 1997).

### Literature review and hypotheses development

This study investigates the role of the cultural background of users in their trust formation towards online health information. This concentration is in accordance with Menou’s assertion of ‘information acculturation’, that is, ‘information is culture-specific and, consequently, is largely incommunicable unless it has been acculturated’ (Menou, 1983: 121). The study contributes to the previous gap in the literature (Khosrowjerdi and Sundqvist, 2017; Shaffi and Rowley, 2017) as follows. First, it investigates if the antecedents of trust in OHI are stable, or whether they differ based on the cultural background of the users. Second, it includes three different nationalities, that is, Chinese, South Korean and American, in order to have a more concrete cross-cultural comparison. This inclusion is in accordance with the recommendations of previous researchers (Khosrowjerdi and Sundqvist, 2017: 17; Shaffi and Rowley, 2017), which was to include non-western countries in online health information studies. Third, it included two eastern countries in the study in order to understand the similarities or differences of trust formation between non-western and western individuals.

Rowley and colleagues (2015) identified six factors as being the antecedents of trust in OHI: information quality, information style, the brand of the source, personal recommendations, information verification and ease of use. The noted factors are in accordance with the factors which influence the general web credibility judgment of the users (Kakol et al., 2017). Information quality is the currency, comprehensiveness, reliability and accuracy of the retrieved information (Escoffery et al., 2005; Rowley et al., 2015). Information design or style is ‘the way in which the information is presented and written’ (Rowley et al., 2015: 320). The brand of the source is manifested in the inclusion of a respected or famous logo on the retrieved information, medium or website (Rowley et al., 2015). Personal recommendations refer the suggested materials or sources to the user by other people (friends, family members, etc.). Information verification refers to the validity check or repeated checking of the retrieved health information against other sources (Johnson et al., 2015; Rowley et al., 2015). Ease of use is the accessibility of the information source, access to free information and the speed of access to the information (Rowley et al. 2015: 322).

In addition to the noted factors, the disclosure of the source and website design have been reported as predictors of the users’ trust in OHI. The disclosure of expertise and the qualifications of the authors or providers of online information (i.e. websites) are vital for credibility judgments in the online environment (Metzger, 2007). Researchers have showed that consumers consider this during the credibility judgment and trust formation stages (Metzger, 2007; Walraven et al., 2009). However, the degree of focus on authorship as a clue toward credibility judgment could be different among different users. In addition, authorship checking during health information seeking was a frequent activity among both teens and students (Hargittai et al., 2010; Rieh and Hilligoss, 2008). Furthermore, the features of the information medium, such as website design and functionality, including a clear organisation statement, easy navigation or the interactivity of website and accessibility, played a significant role in the behavioural intentions of the individuals and their trust in OHI (Hong, 2006; Kim et al., 2011; Oh and Kim, 2014; Rains and Karmikel, 2009; Song and Zahedi, 2007). Lastly, the system design features showed an association with the information quality judgment of users in an online environment (Nicolaou and McKnight, 2006). Thus, it is posited that:
**H1:** The disclosure of author information is an antecedent of the individual’s trust in OHI.

**H2:** The website design features are an antecedent of the individual’s trust in OHI.

Furthermore, cultural characteristics could influence the trust formation process of different groups. Culture has different conceptions. In this research study, culture is regarded as ‘the collective programming of the mind which distinguishes the members of one group or category of people from another’ (Hofstede, 1991: 5). The programming of the mind refers to people’s patterns of thinking, feeling and behaving which are rooted in the society in which one grew up (Hofstede, 1991: 4). In other words, the cultural values and influences change all aspects of everyday life of a particular group of people (Hall, 1989: 16). As Hall (pp.16–17) explains, these aspects include:

... personality, how people express themselves (including shows of emotion), the way they think, how they move, how problems are solved, how their cities are planned and laid out, how transportations systems function and are organized, as well as how economic and government systems are put together and function.

According to Hofstede (1991), culture has several layers. It could resemble an onion with four layers; values, rituals (e.g. way of greeting or respecting others), heroes (the role models) and symbols (such as dressing and hairstyles) (Hofstede, 1991: 7–8). The innermost layer (values) is learned from childhood and it influences the other layers of culture (practices). These values are human preferences, and they can be understood based on people’s behaviour in different situations (p. 8). In addition, culture has several levels including national, regional and professional (p. 10). In other words, the behaviour of a group of individuals could be observed through different units of analysis, e.g. national, regional, institutional, etc. In this study, the cultural differences of individuals were investigated through their reported nationality because ‘it is often the only feasible criterion for classification’ (p. 12).

According to the dimensional model used by Hofstede, the cultural dimensional scores of the included countries in this study have been presented in Figure 2.

Hofstede uses the terms ‘uncertainty-avoiding’ for societies with high uncertainty avoidance, and ‘uncertainty-accepting’ for nationalities with low scores in the uncertainty avoidance dimension (Hofstede et al., 2010: 197). Among the investigated nationalities in this study, South Korea is an uncertainty-avoiding society, China is considered to be an uncertainty-accepting society and the USA scores below average in this dimension. In uncertainty-avoiding societies, ‘safety or security is likely to prevail over other needs’ (Hofstede et al., 2010: 201). In return, in uncertainty-accepting societies, the people are ‘comfortable in ambiguous situations and with unfamiliar risks’ (Hofstede et al., 2010: 203). These differences may be reflected in the digital environment, and it is probable that these differences influence the trust formation of people in the online world too. Studies showed that the avoidance of uncertainty was related to the risk perception of individuals in unknown circumstances (Vance et al., 2008: 81). Keil et al. (2000) found that risk perception is stronger in people from uncertainty-avoiding cultures. In addition, the avoidance of uncertainty has influenced information technology adoption and use. For example, Thatcher et al. (2003) showed that users from uncertainty-avoiding societies were less eager to work with new information technology. Vance et al. (2008) found that uncertainty avoidance had a negative relationship with trust, and American consumers, who had lower scores in uncertainty avoidance (i.e. 46), had more of a tendency to trust technological objects than French consumers, who had higher scores in the uncertainty avoidance dimension (i.e. 86). Thus, it is posited that:
H₃: Health consumers of uncertainty-accepting societies (i.e. China) will perceive online health information as more credible than consumers from uncertainty-avoiding societies (i.e. South Korea).

H₄: In comparison with the American and Chinese group, the South Korean group will use additional informational cues during their trust establishment concerning online health information.

H₅: In order to reduce uncertainty, the South Korean group will give more weight to the information verification and disclosure of the source during trust establishment in OHI.

Hall (1989) explained the context as being the surrounding meaning around the transmitted information and specified that, ‘without context, the (transmitted) code is incomplete since it encompasses only part of the message’ (p. 86). Hall ascertained that ‘the level of context determines everything about the nature of communication and is the foundation on which all subsequent behaviour rests (including symbolic behaviour)’ (p. 92). Based on this assertion, Hall (1981) categorised the world’s cultural groups into a spectrum of high versus low context cultures with different communication styles. According to Hall (pp. 101–102), people of high context cultures (e.g. China and South Korea) prefer indirect and implicit messages in the communicative process, while people of low context cultures (e.g. the United States) favour direct and explicit information.

Furthermore, low context (LC) cultures are generally individualistic while high context (HC) cultures are mostly collectivistic (Hofstede et al., 2010: 110). In individualistic societies, the ties between individuals of a society are loose and people are supposed to take care of themselves or their close family members first. In collectivist societies, people have in-group loyalties, and they must unconditionally be in service of other in-group members to show their loyalty (Hofstede, 2001: 225). In collectivist cultures, which are mostly HC cultures, the context around the information (e.g. information style, information design, aesthetics features) is very important, and they ‘prefer image-based or symbolic appeals’ during communication (Tai and Chan, 2001: 550). Therefore, it is hypothesised that:

H₆: In comparison to collectivist societies (i.e. South Korea and China), health consumers of individualist societies (e.g. USA) will put more emphasis on information quality when trusting online health information.

H₇: In HC cultures (i.e. South Korea and China), health information seekers will give more weight to personal recommendations during the creation of trust in online health information than consumers of LC cultures (i.e. USA).

The conceptual model of this study has been illustrated in Figure 3. The model represents the predictors of trust in OHI bounded by cultural context.

**Method**

**Instrument**

After a comprehensive review of the methodology applied when investigating the OHI behaviour of people, Anker et al. (2011) concluded that upcoming researchers must ‘uncover the social and relational functions of health information seeking’ through innovative measures and methods (p. 346). In this study, the Trust in Online Health Information (TOHI) scale was applied with some modifications as described below.

The TOHI scale, developed by Rowley et al. (2015), encompassed 44 items (statements) and included six factors as the antecedents of trust in OHI: information quality, information style, the brand of the source, personal recommendations, information verification and ease of use. Since response rates are lower for longer questionnaires (Rolstad et al., 2011), the scale was shortened. Similar concepts under each dimension were merged. In addition, in order to have a more inclusive scale for trust measurement, two additional dimensions were added to the TOHI scale; ‘disclosure of source’ and ‘website design’. The addition of disclosure of the source and website design to the TOHI scale was in accordance with both theory and practice. From the theoretical point of view, it has been ascertained that different groups of people perceive information differently, and that disregarding the context could result in ‘incomplete’ (Hall, 1989: 86) or ‘incommunicable’ (Menou, 1983: 121) information. From the practical side, Hargittai et al. (2010), Kakol et al. (2017), Metzger (2007), Rieh and Hilligoss (2008), Robins and Holmes (2008), Sillence et al. (2007), and Walraven et al. (2009) showed the importance of the disclosure of the source and/or website design in relation to online credibility judgments and the trust behaviour of individuals.

In the original TOHI scale, under the information verification dimension, there was one question referring to source disclosure, which was, ‘The author/organisation responsible for the information can be easily identified’. This statement was separated from the information verification dimension because of its inconsistency with other statements under this dimension, and this shaped the new dimension of ‘disclosure of source’. A couple of other statements were added to this dimension to represent it.

Finally, the modified TOHI scale (see Appendix 1) included 37 statements representing the eight antecedents of trust in OHI: brand of source (3 statements), disclosure of source (3 statements), website design (5 statements), information quality (4 statements), ease of use (3 statements), personal recommendations (3 statements), information style (3 statements) and information verification (4 statements). Trust was measured through two core criteria; credibility (3 statements) and usefulness (6 statements).

**Data collection**

An online survey of undergraduates at a large public university in California (USA) was conducted. The sample
The selection was in accordance with the previous literature, which confirmed the prevalence and increase in health-related issues such as stress, depression and anxiety among college-age students (Haidar et al., 2018). Furthermore, studies have shown that students were among the main actors of OHI seeking, maybe because of the practicality of the Internet referring to getting health-related information as a younger person (Hesse et al., 2005). In addition, the Internet provides opportunities for students to find answers to ‘embarrassing health issues’ (Ackard and Neumark-Sztainer, 2001; Gray et al., 2002). Similarly, the anonymity and confidentiality of the Internet makes it untraceable and this increases the likelihood of OHI seeking among adolescents (Horgan and Sweeney, 2010; Montagni et al., 2014).

The student population of this study was composed of 28,371 undergraduates studying at the targeted university (1725 Chinese, 500 South Korean and 26,146 American). The data were gathered through an online questionnaire (Appendix 2). After getting the required permission, the researcher requested the IT department of the targeted university to send out a recruitment message to 1500 undergraduates (500 American, 500 Chinese and 500 South Korean) studying at the university, with two reminders after two weeks. The Likert-style questionnaire was composed of a consent form, a number of demographic questions (gender, age, education year, nationality) and the indication of previous searching for OHI. The last part of questionnaire requested the students to indicate the importance of the provided statements in relation to trustworthiness judgments of OHI. In accordance with previous scholars (Johnson et al., 2015; Rowley et al., 2017), the convenience sampling method was applied to prompt a higher response rate. The responses were collected in May–June 2017. The overall response rate was 13%. Of the 195 responses collected, 171 complete responses (88%) were analysed.

**Ethical considerations**

In order to administer the survey in the targeted university in the USA, the researcher got permission from a national review board of his country of residence, and from the institutional review board (IRB) of the targeted university in the USA. The corresponding author passed an online course module to get final approval from the IRB, as part of conducting the online survey. The participants of the study were informed that their participation was voluntary and they had the right to withdraw from the online questionnaire at any time without any consequences. However, all groups of participants had the chance to win a lottery for $100 dollars. The participants’ privacy was protected through removing all of the information that could be used to identify the participant (e.g. email address).
The designers of the TOHI scale (Rowley et al., 2015) confirmed the validity of the TOHI scale through factor analysis and its reliability through Cronbach’s alpha, which ranged from 0.720 to 0.834. As there were minor modifications of some of the statements of TOHI and two new dimensions were added to the scale, the reliability of the modified TOHI was still checked. The internal consistency of the scale was measured using Cronbach’s alpha. Cronbach’s alpha coefficients for all dimensions of the modified TOHI were higher than the minimum cut-off of 0.60 (Loewenthal, 2001: 12) and ranged from 0.693 to 0.889 (Table 1). This is approximately in accordance with the acceptable cut-off in the context of health science (0.70 to 0.95) (Tavakol and Dennick, 2011).

Furthermore, to check the validity of the modified scale, exploratory factor analysis (EFA) was performed in AMOS (Figure 4).

The model fit index (Table 2) showed an acceptable fitting scale. Three items had low factor loading, that is, W4 (i.e. the design and interactivity of website are favourable),

| Dimensions                      | Cronbach’s alpha |
|--------------------------------|------------------|
| information quality             | .889             |
| information style               | .876             |
| ease of use                     | .869             |
| brand of source                 | .824             |
| personal recommendations        | .693             |
| information verification        | .875             |
| disclosure of source            | .865             |
| website design                  | .809             |
| credibility                     | .881             |
| usefulness                      | .884             |
W5 (i.e. the website is not commercial), and B3 (i.e. the source is on the website of a specialist health charity), and thus, they were removed from the scale.

Results
Table 3 shows the demographics of respondents in this study. Out of the 189 respondents, 18 individuals stated that they had not searched for OHI in the last year. The respondents were removed, and 171 responses were included in the final analyses. The final sample (N = 171) was mostly female (64%), healthy (58%), junior/senior undergraduates (65%), and aged 18–24 years (91%).

In order to test the relationships of the eight predictor values and the two dependent variables of credibility and usefulness, structural equation modelling was performed in AMOS™. Before interpreting the results, the assumptions of multivariate analysis were investigated. For this purpose, we expected heteroscedasticity because we were moderating our model with multi-group moderators. Second, we conducted curve estimation for the relationships in the model and determined that all relationships were sufficiently linear enough to be tested using covariance-based structural equation modelling. Third, tests to see if the data met the assumption of collinearity indicated that multi-collinearity was not a concern, i.e. the variance inflation factor (VIF) was lower than the threshold of three.

In order to check if the antecedents of trust in OHI and their importance changed with the nationality of the participants, group analyses in AMOS was performed. The analyses revealed the differences of the antecedents of trust in OHI for the American, Chinese and South Korean groups, as follows.

For the Chinese group (Figure 5), the three variables of information quality, information style and information verification were significant antecedents of trust in OHI. As depicted in Table 4, the information quality was the only predictor of the credibility judgment of OHI for the Chinese group, and information style and information verification were the two significant predictors of the usefulness of OHI for this group. The other factors did not have a significant effect on trust.

For the American group (Figure 6), information quality and ease of use were the two significant predictors of credibility judgment, and information quality, information style and information verification were the three significant antecedents of the usefulness of OHI. The details of the regression weights for the American group have been depicted in Table 5.

The multivariate analysis showed that the credibility judgments of OHI for South Koreans (Figure 7) were grounded in the three factors of information quality, ease of use and personal recommendation. South Koreans based their usefulness judgment on four factors: information verification, information style, information quality and the disclosure of the source, in the order given. The details of the analysis are presented in Table 6.

The mean scores of the trust dimensions by nationality have been depicted in Table 7. As shown, the credibility of OHI was, on average, more important for the Chinese group. The American group, on average, rated the usefulness of OHI higher than the Chinese and South Korean groups.

Discussion
The structural equation modelling showed that information quality was the strongest predictor of the credibility perception of OHI for all participants, which is in accordance with the findings of Johnson et al. (2015), which found information quality was the strongest antecedent of credibility judgment. However, the findings revealed different trust formation patterns for the three investigated groups as follows.

For the Chinese group, information quality was the only factor influencing the credibility judgment of OHI, and information style and information verification were the two antecedents of the usefulness of OHI, in the order given.

For the American group, two factors influenced the credibility judgments of OHI: information quality and ease of use. The usefulness perception of this group is based on three factors of information style, information quality and information verification, in the order given.

For the American group, two factors influenced the credibility judgments of OHI: information quality and ease of use. The usefulness perception of this group is based on three factors of information style, information quality and information verification, in the order given.

The South Korean group used the most information cues during trust formation as described below. Information quality, ease of use and personal recommendations were the three predictors of credibility judgments of OHI for this group, while information verification, information style, information quality and the disclosure of author information were the four antecedents of the usefulness of OHI. For this group, information verification was the strongest predictor of the usefulness of OHI.

In addition, ease of use was only an antecedent of credibility judgment for OHI for the South Korean and
Table 3. Characteristics of respondents (N = 171).

| Nationality of respondents | Chinese (N = 42) | American (N = 81) | South Korean (N = 48) |
|----------------------------|-----------------|-----------------|----------------------|
| Gender                     |                 |                 |                      |
| Female                     | Count 28        | Count 47        | Count 35             |
| % within Gender            | 25.5            | 42.7            | 31.8                 |
| Male                       | Count 14        | Count 31        | Count 13             |
| % within Gender            | 24.1            | 53.4            | 22.4                 |
| Other                      | Count 0         | Count 3         | Count 0              |
| % within Gender            | 0.0             | 100.0           | 0.0                  |
| Age                        |                 |                 |                      |
| under 20                   | Count 13        | Count 31        | Count 9              |
| % within Age               | 24.5            | 58.5            | 17.0                 |
| 20–24                      | Count 25        | Count 44        | Count 32             |
| % within Age               | 24.8%           | 43.6%           | 31.7%                |
| 25–29                      | Count 3         | Count 4         | Count 6              |
| % within Age               | 23.1            | 30.8            | 46.2                 |
| 30–39                      | Count 1         | Count 2         | Count 1              |
| % within Age               | 25.0            | 50.0            | 25.0                 |
| Degree                     |                 |                 |                      |
| Freshman                   | Count 9         | Count 14        | Count 7              |
| % within Degree            | 30.0            | 46.7            | 23.3                 |
| Sophomore                  | Count 5         | Count 17        | Count 8              |
| % within Degree            | 16.7            | 56.7            | 26.7                 |
| Junior                     | Count 10        | Count 17        | Count 15             |
| % within Degree            | 23.8            | 40.5            | 35.7                 |
| Senior                     | Count 18        | Count 33        | Count 18             |
| % within Degree            | 26.1            | 47.8            | 26.1                 |
| Health status              |                 |                 |                      |
| Healthy                    | Count 20        | Count 48        | Count 21             |
| % within Health status     | 22.5            | 53.9            | 23.6                 |
| With minor or major        | Count 22        | Count 33        | Count 27             |
| health problems            | % within Health status | 26.8 | 40.2 | 32.9 |

Figure 5. The Chinese model of trust.
American groups. Finally, out of the investigated groups, the Chinese group reported, on average, the highest credibility perception of OHI before the Americans and South Koreans respectively. The results of the hypotheses testing have been depicted in Table 8. These findings are mostly in accordance with the findings of Johnson et al. (2015), who found that the four factors of information quality, information style, ease of use and brand of the source were the statistically significant predictors of an individuals’ trust in OHI.

According to HNCD, out of the investigated countries in this study, China had the lowest uncertainty avoidance score (i.e. 30), the United States scored below average (i.e. 46), and South Korea had the highest score (i.e. 85). Societies with high uncertainty avoidance are reluctant to use new technological advancements while societies with low uncertainty avoidance welcome new technologies such as the Internet and email (Hofstede et al., 2010: 208). In China, people adapt to ambiguities in different situations.
As obvious evidence, ‘the Chinese language is full of ambiguous meanings that can be difficult for Western people to follow’ (Hofstede Insights™, n.d.).

On the other hand, the people of South Korea, as members of an uncertainty-avoiding society, tend to avoid ambiguity and unknown situations. They are more likely to believe that ‘what is different is dangerous’ (Hofstede, 2001: 161). Furthermore, a cross-country study on the relationships of Hofstede’s national culture dimensions and the personality traits of the studied countries showed a positive correlation between uncertainty avoidance and the neuroticism dimension of personality. That is, that the people of high uncertainty avoidance cultures were generally more likely to experience negative emotions such as anger, anxiety and impulsiveness (Hofstede and McCrea, 2004: 69). The noted negative emotions may be transferred to the digital environment. Thus, in order to cope with these negative emotions during their judgment of online information, South Koreans use more information clues and gave more weight to information verification during their trust formation process.

Finally, yet most importantly, studies (Al Kailani and Kumar, 2011) have confirmed that people of uncertainty-accepting

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**Table 6.** Non-standardised, standardised and significant levels for model in Figure 7 (Standard errors in parentheses, N = 48).

| Parameter estimate                  | Credibility | Non-standardised | Standardised | P   |
|-------------------------------------|-------------|-----------------|--------------|-----|
| Information quality                | ---- >     | .829 (.106)     | .727         | .000 |
| Ease of use                         | ---- >     | .207 (.094)     | .202         | .028 |
| Personal recommendations            | ---- >     | .155 (.064)     | −.196        | .015 |
| Information verification            | ---- >     | .434 (.115)     | .464         | .000 |
| Information style                   | ---- >     | .299 (.119)     | .299         | .012 |
| Information quality                 | ---- >     | .289 (.116)     | .264         | .013 |
| Disclosure of author information    | ---- >     | .144 (.069)     | −.209        | .037 |

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**Table 7.** The mean scores of the trust dimensions by nationality.

|               | South Korea |               | China        |               | USA         |               |
|---------------|-------------|---------------|--------------|---------------|-------------|---------------|
| Credibility   | 4.2014      | .69357        | 4.2778       | .68636        | 4.0617      | .88680        |
| Usefulness    | 3.8056      | .66608        | 3.7579       | .69863        | 3.8416      | .80747        |
| N             | 48          | 42            | 81           |               |             |               |
Table 8. Hypotheses testing.

| Hypothesis                                                                 | Supported | Not supported | Partially supported |
|---------------------------------------------------------------------------|-----------|---------------|---------------------|
| H1: The disclosure of the author’s information is an antecedent of individuals’ trust in OHI. |           |               | *                   |
| H2: Website design is an antecedent of the individuals’ trust in OHI.     |           |               | *                   |
| H3: Health consumers of uncertainty-accepting societies (i.e. China) will perceive online health information as more credible than consumers from uncertainty-avoiding societies (i.e. South Korea) do. |           |               | *                   |
| H4: In comparison to the American and Chinese groups, the South Korean group will use additional informational cues during the establishment of trust in online health information. |           |               | *                   |
| H5: The South Korean group will give more weight to information verification during OHI trust. |           |               | *                   |
| H6: In comparison with collectivist societies (i.e. South Korea and China), health consumers of individualist societies (e.g. USA) will put more emphasis on information quality when trusting online health information. |           |               | *                   |
| H7: In HC cultures (i.e. South Korea and China), health information seekers will give more weight to personal recommendations during the establishment of trust in online health information than the consumers of LC cultures (i.e. USA). |           |               |                     |

societies are more likely to buy online products and they have a lower level of ‘perceived risk’ during online transactions. Thus, it is likely that the South Korean and American groups, as members of societies with higher uncertainty avoidance, perceived OHI as being less credible than the Chinese group did.

The three strongest antecedents of trust for the American group in the current study were information quality, information style and ease of use, which is similar to the previous findings of Johnson et al. (2015: 425) in the UK. If it is assumed that the participants in Johnson et al.’s study were British or mostly British, then these findings could be explained through HNCD. Both the UK and USA have similar scores in relation to Hofstede’s (2001) national culture dimensions, except for long-term orientation. They are regarded as individualist, low-power-distant and masculine societies with similar scores in the uncertainty avoidance dimension. On the other hand, previous studies (Deschepper et al., 2008) have showed that national cultural values influence health-related behaviour. Thus, it might be conceivable if two nations with approximately similar scores for their national culture dimensions show similar trust patterns in the online health context.

Furthermore, the importance of information quality for the American group in this study, which is in accordance with the previous findings for the similar culture of the UK (Johnson et al., 2015) could be explained by HORIZON. According to HORIZON (Hall, 1989: 101), ‘any transaction can be characterised by a high-, low-, or middle-context’. Both the UK and USA are regarded as low context (LC) cultures with similar communicative styles, that is, the people of the societies communicate directly and explicitly and ‘most of the information must be in the transmitted message’ (Hall, 1989: 101). This happens through ‘the constant and sometimes never-ending use of words’ in regular communications (Nishimura et al., 2008: 785). Since the informational part of the message or content is of importance for LC cultures, it is reasonable that they give special attention to information quality clues during their judgment of the trustworthiness of online content.

However, information verification was an additional (and the weakest) antecedent of American’s trust in OHI in our study, while Johnson et al. (2015) reported that the brand of the source was the fourth and weakest predictor of the British students’ trust. This finding could be related to the interaction of national cultural differences with brand perception (Foscht et al., 2008; Jansson, 2013). However, more investigation is required to construct a convincing argument for this finding.

Finally, this study partially confirmed personal recommendations and the disclosure of the author’s information as being the predictors of trust in OHI for the South Korean group. The communication style of high context (HC) cultures (Hall, 1989) supports these findings. The people of HC cultures (i.e. China) prefer *indirect* and *implicit* messages (Merkin, 2009), and the transmitted information between sender and receiver is *pre-programmed, fast and contextual*, ‘with only minimal information in the transmitted message’ (Hall, 1989: 101), which may be a reason for the South Koreans’ preference for personal recommendations.

It worth mentioning that, contrary to the expectations of the researchers, no statistically significant correlation between personal recommendation and trust in OHI was found for the Chinese group. It is guessed that this finding could be for two reasons. First, although the ‘cultures, especially national cultures, are extremely stable over time’, external forces such as ‘forces of nature or forces of human beings [such as] trade, conquest, economic or political dominance, and technological breakthroughs’ could
result in cultural change (Hofstede, 2001: 34). It is true that the ‘Confucian and collectivistic values dominate [Chinese] society’ (Zhang and Shavitt, 2003: 24); however, individualism and modernity are more prevalent among younger Chinese (aged 18 to 35) than in the older generation (Zhang and Shavitt, 2003: 31). The second possible reason may perhaps be rooted in the link of geographic movements and cultural change. That is, ‘when people are moved as individuals, they will adapt to the culture of their new environment’ (Hofstede et al., 2010: 375).

Since this study surveyed international studies in the USA, it is possible that they removed ‘the undesirable aspects of their old culture’ (Hofstede et al., 2010: 375) and adapted to the cultural values of the new society.

**Conclusion**

Regarding the increasing rate of OHI, and the effort of health professionals and communicators to make trustworthy information accessible for all citizens, this study has provided interesting and useful information regarding the antecedents of trust in OHI according to the cultural background of individuals. This study aimed to answer the following question:

- How could people’s cultural background characterise their trust formation toward OHI?

The antecedents of trust in relation to online health information were different for the Chinese, South Korean and American groups in this study. The different perceptions of the antecedents of trust in OHI among the investigated participants, and the higher credibility of OHI for the Chinese sample, can be explained through HORIZON (Hall, 1989) and the HNCD (Hofstede, 2001).

Furthermore, our findings confirmed the applicability of the (modified) TOHI scale in cross-cultural studies of trust in the context of online health information. However, as the developers of this scale expected (Rowley et al., 2015: 325), the replication of the (modified) TOHI scale in a diverse sample of users (Chinese, American and South Korean) resulted in different antecedents of trust in OHI for the investigated groups.

From a practical standpoint, the current researchers believe that predicting the antecedents of trust based on the cultural background of the individual could result in the responsive provision of health information tailored to the preferences of the user. In other words, if online health providers consider the culturally tailored provision of health information to individuals, it could positively influence trust formation. People’s trust in OHI is important because it influences their actual use (Mou and Cohen, 2014a, 2014b, 2014c), and this may trigger healthy behaviour in individuals.

Both this study and further research in this field have the potential to inform stakeholders, practitioners, developers and professionals focused on the production and dissemination of health information to multicultural groups of users. In order for there to be inclusive health information provisions, health practitioners could consider information quality, information style, information verification, ease of use and the disclosure of the author’s information in the development process of health messages for all groups of individuals.

The health information providers and websites that want to deliver health information to different groups of users could have two main approaches. First, they could provide health information in a manner that is perceived as trustworthy by all groups of users. This could be achieved by paying attention to the information quality and information style indications. In other words, objective, comprehensive, accurate and current information could have the highest influence on the perception of trustworthiness of the provided health information. In addition, the proof-reading of health messages, the structured and professional presentation of a health message, and the understandability of the message could result in the higher trustworthiness perception of the health message. Secondly, the providers of the health information could give weight to the factors that play a role in the trust formation of special groups of users. For instance, the inclusion of links to other related sources, which confirm or contradict the factual information on the health websites, the currency of the provided information and the disclosure of the author’s information which may decrease the uncertainty avoidance of users coming from uncertainty-avoiding societies.

Finally, the presence of national cultural dimensions in information behaviour modelling and research could result in a more inclusive assessment and explanation of the behaviour of different groups of individuals and, consequently, the formation of a more comprehensive information provision policy for all users.

**Limitations and future research**

The response rate of our study was in accordance with the previous low response rate in online surveys (Sheehan and McMillan, 1999), and of online surveys administered in the health information field (Rowley et al., 2017). However, the number of responses per country was approximately in accordance with the ‘ideal sample size for a homogenous sample’, that is, 50 complete responses per nationality (Hofstede and Minkov, 2013). Nevertheless, it is suggested that future researchers target the participants through traditional methods such as paper-and-pencil surveys, which have had a higher response rate in previous studies (Nulty, 2008: 302).

Following the previous researchers (e.g. Johnson et al., 2015; Rowley et al., 2017), the convenience sampling method was used in this study. This lets us have similar grounds for comparison. However, convenience sampling has limitations, because it is possible that the respondents are systematically different from non-respondents (Nulty, 2008: 310). Thus, it is fruitful that upcoming researchers use stratified or systematic sampling techniques (Davies and Mosdell, 2006: 62) instead
of convenience sampling in order to have a better generalisation of the population and an improved transfer of the findings to the investigated population.

In this study, an English version of the TOHI scale was used, and it was supposed that Bachelor’s students in the USA had enough English language proficiency to understand the survey questions because they must demonstrate a high level of language competency for university admission. However, studies warn against language bias when using monolingual questionnaires in intercultural studies (Harkness and Schoua-Glusberg, 1998). It is suggested that upcoming researchers use multi-lingual versions of the (modified) TOHI scale based on the mother tongue of the participants, albeit after validity and reliability assessments, in order to reduce the possible language bias.

Finally, this study did not control for the possible effect or intermediation of acculturation on students’ trust in OHI. The upcoming researchers aiming for international students could solve this limitation, for instance, by gathering data on the length of stay in the new country.

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ORCID iD
Mahmood Khosrowjerdi https://orcid.org/0000-0003-1854-1270

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**Author biography**

Mahmood Khosrowjerdi has a PhD in Library and Information Science from Oslo Metropolitan University (OsloMet), Norway. In his PhD project, he investigated the role of national culture in trust formations of users towards online health information. Mahmood has published in several international forums such as *Library and Information Science Research, Serials Review, Library High Tech*, among others. Currently, Mahmood is a university librarian at Inland Norway University of Applied Sciences, Hamar, Norway. He can be contacted at mahmood.khosrowjerdi@inn.no

### Appendix 1. Trust in online health information (TOHI) SCALE-MODIFIED.

| Dimension                  | Statement                                                      |
|----------------------------|----------------------------------------------------------------|
| Brand of source            | B1 The website features the logo of a respected or well-known brand |
|                            | B2 The source brand has a good reputation                      |
| Disclosure of source       | D1 Disclosure of the name of the author(s) of the content       |
|                            | D2 Disclosure of affiliation of the author(s) of the content   |
|                            | D3 Disclosure of the education level, expertise, or credentials of the author(s) of the content |
| Website design             | W1 The website has a ‘privacy policy’ section                   |
|                            | W2 The website is recently updated                             |
|                            | W3 The website is traceable in the real world, e.g. it had ‘about us’ or ‘contact us’ sections or physical address information |
| Information quality        | Q1 The retrieved information is comprehensive and current      |
|                            | Q2 The retrieved information is accurate                        |
|                            | Q3 The information/content includes the recent developments and facts about the health issue rather than opinions |
|                            | Q4 The information appears to be objective                      |
| Ease of use                | E1 The information source is easy to access or easy to find     |
|                            | E2 The information/content is free of charge                    |
|                            | E3 The speed with which I find the information is important for me to use it |
| Personal recommendations    | R1 The recommendations by family or friends to use the source or their previous use of the source |
|                            | R2 The recommendation of a health professional to use the source |
|                            | R3 The recommendations of other members of a website or other members of your social networks |
| Information style          | S1 The information is easy to understand or easy to read        |
|                            | S2 The information is clearly structured or professionally presented |
|                            | S3 The information has no evidence of proofreading oversights (such as spelling mistakes etc.) |
| Information verification    | V1 The content has references to other related sources          |
|                            | V2 The website or the content has hyperlinks to other web pages and documents |
|                            | V3 The information is consistent with what I found in other sources |
|                            | V4 The extent of consistency of retrieved information with my previous knowledge |
| Credibility                | C1 The reliability (believability) of content                   |
|                            | C2 The objectivity (impartiality) of the information             |
|                            | C3 The general quality of the information                       |
| Usefulness                 | U1 The information could tell me most of what I need to know    |
|                            | U2 The information could help me to understand the health issue better |
|                            | U3 The information is interesting to me                         |
|                            | U4 The fact that I could use the information                     |
|                            | U5 The extent to which the information could add my previous knowledge or tailored to me personally |
|                            | U6 The extent to which I feel that the website or the provided information tried to help me (or it was in my best interest) |

*The statements/dimensions were added to the TOHI scale during the current study.*
Appendix 2. The questionnaire

Part 1: Demographic

Your gender?
Male
Female
Other
Your age (in years)?
Under 20
20–24
25–29
30–34
35–39
40–49
50–59
60 or over

You are a … (SH: semester hours)
Freshman (Less than 32 SH)
Sophomore (At least 32 SH but less than 64 SH)
Junior (At least 64 SH but less than 96 SH)
Senior (At least 96 SH)
Your nationality? …………. .
Any other nationalities background (if different) …………. .

Part 2: Search-related questions

Here we ask questions about your last search for online health-related information.

During the past 6 months, have you explored any health-related information on the Internet?
Yes
No

What was the purpose of your last search for health-related information?
General inquiries
Specific health concerns
Both general inquiries and specific health concerns
I do not remember

What kind of health-related information you were looking for?
Alcohol and other drugs
Bodyweight
Cancer
Fitness/exercise
HIV/AIDS
Medicines and pharmaceuticals
Mental health
Nutrition and diet
Sexual/reproductive health
Sexually transmitted diseases
Tobacco and smoking
Others please specify …
I do not remember

What kind of health-related information were you looking for?

Part 3: Trust-related question

Generally, during your search for online health information, what factors do you regard as important for your trustworthiness judgments towards retrieved information? (1 = of very little or no importance, 2 = of little importance, 3 = of moderate importance, 4 = Very important, 5 = of utmost importance)

| #   | Statements                                                                 | 1 | 2   | 3   | 4   | 5   |
|-----|---------------------------------------------------------------------------|---|-----|-----|-----|-----|
| 1   | The website features the logo of a respected or well-known brand         |    |     |     |     |     |
| 2   | The source brand has a good reputation                                    |    |     |     |     |     |
| 3   | The source is on the website of a specialist health charity               |    |     |     |     |     |
| 4   | Disclosure of the name of the author(s) of the content                    |    |     |     |     |     |
| 5   | Disclosure of affiliation of the author(s) of the content                 |    |     |     |     |     |
| 6   | Disclosure of the education level, expertise, or credentials of the author(s) of the content |    |     |     |     |     |
| 7   | The website has a ‘privacy policy’ section                               |    |     |     |     |     |
| 8   | The website is recently updated                                          |    |     |     |     |     |
| 9   | The website is traceable in the real world, e.g. it had ‘about us’ or ‘contact us’ sections or physical address |    |     |     |     |     |
| 10  | The design and interactivity of website are favourable                    |    |     |     |     |     |
| 11  | The website is not commercial                                            |    |     |     |     |     |
| 12  | The retrieved information is comprehensive and current                   |    |     |     |     |     |
| 13  | The retrieved information is accurate                                    |    |     |     |     |     |
| 14  | The information/content includes the recent developments and facts about the health issue rather than opinions |    |     |     |     |     |
| 15  | The reliability (believability) of content                               |    |     |     |     |     |
| 16  | The objectivity (impartiality) of the information                         |    |     |     |     |     |
| 17  | The general quality of the information                                    |    |     |     |     |     |

(Continued)
| #  | Statements                                                                 |
|----|---------------------------------------------------------------------------|
| 18 | The information source is easy to access or easy to find                  |
| 19 | The information/content is free of charge                                 |
| 20 | The speed with which I find the information is important for me to use it |
| 21 | The recommendations by family or friends to use the source or their previous use of the source |
| 22 | The recommendation of a health professional to use the source             |
| 23 | The recommendations of other members of a website or other members of your social networks |
| 24 | The information is easy to understand or easy to read                     |
| 25 | The information is clearly structured or professionally presented         |
| 26 | The information has no evidence of proofreading oversights (such as spelling mistakes etc.) |
| 27 | The information could tell me most of what I need to know                 |
| 28 | The information could help me to understand the health issue better       |
| 29 | The information is interesting to me                                     |
| 30 | The fact that I could use the information                                |
| 31 | The extent to which the information could add my previous knowledge or tailored to me personally |
| 32 | The extent to which I feel that the website or the provided information tried to help me (or it was in my best interest) |
| 33 | The content has references to other related sources                       |
| 34 | The website or the content has hyperlinks to other web pages and documents |
| 35 | The information is consistent with what I found in other sources          |
| 36 | The information appears to be objective                                  |
| 37 | The extent of the consistency of the retrieved information with my previous knowledge |

Thanks for your response(s). Please include your academic email address in the box provided below if you want to be registered for the 100-dollar lottery.