I-ROLE 2023
International Conference of Research on Language Education

PERSUASIVE STRATEGIES USED IN TWEETS TO ADDRESS COVID-19 VACCINE HESITANCY

Nalini Arumugam (a), Alice Shanthi (b)*, P. Purwarno (c), Mohd Nazri Latiff Azmi (d),
Kaarthiyainy Subramaniam (e)
*Corresponding author

(a) SEGi University, Petaling Jaya, Selangor, naliniarumugam@segi.edu.my
(b) Universiti Teknologi MARA, Cawangan Negeri Sembilan, Malaysia, aliceshanthi@uitm.edu.my
(c) Universitas Islam Sumatera Utara, Medan, Indonesia, purwarno@sastra.uisu.ac.id
(d) Universiti Sultan Zainal Abidin, Terengganu, Malaysia, mohdnazri@unisza.edu.my
(e) Universiti Teknologi MARA, Shah Alam, kaarthiyainy@uitm.edu.my

Abstract

The Covid-19 pandemic has caused an unprecedented public health crisis. As such, governments across the globe design various campaign strategies against the pandemic, especially medical officers through official sources such as Twitter. This study examined tweets' persuasive usage when discussing vaccine issues on Twitter. This study focused on persuasive strategies employed by Malaysian medical doctors on Twitter to combat COVID-19 vaccine hesitancy and the ideologies of positive-self representation and negative-other representation in vaccine tweets. This study used qualitative content analysis to gain in-depth and rich findings. The results showed the thirteen most common persuasion strategies for discussing vaccine issues on Twitter. Also, the study point to three significant findings: First is the need to improve persuasion by health professionals as an authority in health-related discourse. Secondly, the study also revealed the importance of using a standard language in Malay or English instead of code-switching or mixing, which is essential to avoid miscommunication and misinterpretation of what has been said. Finally, the importance of diversifying the ways of promoting vaccines through Twitter.

Keywords: Covid-19 vaccine, Persuasive strategies, social media communication, Twitter

1. Introduction

The World Health Organization (WHO) declared a pandemic COVID-19 on 12 March 2020 due to the global widespread of SARS-CoV-2 and thousands of deaths caused by coronavirus disease (COVID-19). The world has paid a high price for human lives lost, economic ramifications, and increased poverty due to this pandemic (Ibrahim et al., 2022; Ma'mor et al., 2022; Ng et al., 2020). One of the strategies to combat the COVID-19 pandemic is vaccination. Vaccination is a quick, safe, and efficient technique to protect oneself from deadly diseases before they infect one. It strengthens the human immune system by utilising the body's defence to build resistance against specific pathogens (WHO, 2021). Vaccine brands like Pfizer-BioNTech, Oxford-AstraZeneca, and Sinovac have been developed and approved. However, anti-vaccination sentiment has been rising in many nations. This has led to the increase of misinformation and unsubstantiated rumours, which then causes vaccine hesitancy.

Social media users have instant access to an unparalleled variety of content, which can reinforce rumours and misinformation. Social media has become an effective tool for browsing and obtaining health-related information (Arumugam et al., 2019); therefore, social media has emerged as a new source where medical doctors must be present to disseminate information about preventive measures such as COVID-19 vaccines. Also, try to block information to mitigate vaccine hesitancy. One of the social media commonly used as a platform for COVID-19 vaccination discourse is Twitter.

To curb the misinformation surrounding COVID-19 vaccination, many medical doctors work together on Twitter to persuade the public to accept COVID-19 vaccination by giving the correct information to gain their confidence and clear any misunderstanding surrounding COVID-19 vaccination. Persuasion attempts to convince others to change their minds, attitudes, or behaviour. Persuasion is linked to argumentation's power to persuade others to change following the persuasive message (Dutta et al., 2020). This study presents several strategies medical doctors use on Twitter to persuade and influence the readers' stand on COVID-19 vaccination. Even when the vaccines have been clinically proven as a practical approach to reducing COVID-19 infection, their effectiveness still depends on the population's vaccination acceptance. Thus, the success of these immunisation programs depends on the acceptance rate of the vaccine (Malik et al., 2020), which is influenced by public opinion and confidence in the vaccine uptake. Public opinion and confidence are crucial for maximum coverage.

The social media platform Twitter has been primarily used mainly during the quarantine period. Its role as a proponent or opponent of vaccination is emphasised. As the world struggles with the COVID-19 pandemic, Twitter has been swamped with misinformation about the virus. Ng et al. (2020) has stated that poor-quality information on COVID-19 was retweeted more frequently than high-quality content. In addition, Bonnevie et al. (2020) indicated that vaccine opposition content on Twitter has increased by 80% across periods. Subsequently, Swire-Thompson and Lazer (2020) said in their Twitter study that false information spreads rapidly and vastly compared to legitimate information.

A persuasive discourse situation is distinguished by a problem that prompts the speaker to generate an appropriate argument to persuade the audience effectively, often focused on the style, word choices, and tone required to meet the discourse ends (Berger & Stanchi, 2018). This study explores the strategies employed by medical doctors to persuade the public to accept COVID-19 vaccination through Twitter. Then, moving beyond that, the researcher also seeks to examine the ideologies of positive-self

representation and negative-other representation in the vaccine tweets as medical doctors on Twitter work together to cleanse the misinformation surrounding COVID-19 vaccination and thereby combat hesitancy.

Hence, the current study focused on communication strategies to reduce COVID-19 vaccine hesitancy on social media. Since the breakout of the COVID-19 pandemic, an increasing number of research on the discourse of the pandemic from myriad different linguistic perspectives and frameworks have been conducted (Haddad & Montero-Martinez, 2020; Katermina & Yachenko, 2020; Simatupang & Supri, 2020). However, these studies did not examine the perspective of COVID-19, specifically on vaccine hesitancy which leaves a gap. Therefore, this study investigates the strategies and language of persuasion in the vaccine hesitancy context. In this study, the researcher will examine the persuasive strategies and ideologies of positive-self representation and negative-other representation in vaccine tweets by the medical doctors of Malaysia on their Twitter pages to encourage public acceptance of COVID-19 vaccination to fight this ongoing pandemic.

This research is carried out to achieve the following objective:

▪ To identify the persuasive strategies Malaysian medical doctors employ on Twitter to combat COVID-19 vaccine hesitancy.

And to answer the following Research Question:

▪ What persuasive strategies are used by Malaysian medical doctors on Twitter to combat COVID-19 vaccine hesitancy?

By showing the link between persuasion and vaccine hesitancy, the researcher hopes to help fight against vaccine hesitancy. Firstly, the present study will benefit medical doctors in reaching out to the public through social media using the right strategies in the future. The research, however, is subject to several limitations. Firstly, the current study will be limited to Twitter only. Aside from that, the data for the current study will be collected from ten Twitter pages comprised of Malaysian Medical Doctors. Influential Malaysian Doctors own Twitter accounts on Twitter. The rationale for choosing these people is their active roles in promoting vaccination on Twitter. The size of the sample is limited; subsequently, the period when the study is conducted might be a substantial limitation; COVID-19 is an ongoing pandemic that we are currently still in battle with it every day, and new data and information emerge, and a new approach might be implemented, thus, might be affecting the relevancy of the current study.

1.1. Persuasive strategies past studies

Persuasion is a process that tries to alter, change, or enhance the attitudes, beliefs, or behaviours of the target audience through the transmission of a message that reflects the persuader's point of view in a typically implicit manner (Berger & Stanchi, 2018; Krishnan et al., 2021; Kaur et al., 2022). Essentially, persuaders employ tactics to present a set of attitudes or behaviours that addressees should adopt for their country, community, or safety (Lestari, 2018). Lestari (2018) investigated the Persuasive Function of Food and Beverage Services in a sociolinguistic context. She found that all language expressions were employed to pique customers' interest and ultimately persuade them to order the recommended meal. Aside from that, from the perspective of political speeches, Alemi et al. (2018) examined how persuasion was used by the former US president, Barack Obama, as a discursive strategy in his two speeches on ISIS delivered 7/Aug/2014 and 10/Sep/2014. The study found that assertiveness was the most frequently used

speech act in both speeches. Rethina Velu et al. (2022) analysed Mahathir's speech during the second annual general meeting of Parti Pribumi Bersatu Malaysia and his interview with the New Straits Times to show how he used language to mediate various stages of concern in a multi-ethnic country. The study revealed concern through patterns of his language choice reflect mono-ethnic concern towards the Malay economic and financial status apart from his inclusion and role as a political leader of a newfound Malay party.

In the context of magazines, Lulu and Alkaff (2019) examined the relationship advice in women's English magazines, and their study revealed various strategies employed, such as pronouns, modality, intimate expressions, informal language, and imperatives which are used to convince the readers to accept the pieces of advice. These strategies have also positioned the author as a friend rather than an expert. This minimises the social gap between the author and the readers and can grasp the readers' attention.

Mulholland (2005) has compiled and listed various common persuasive strategies and their descriptive and practical examples. The strategies listed are rhetorical questions, metaphor, repetition, proverbs, emphasis, exemplification, comparison, intonation, quotation, and euphemism.

1.2. Theory of persuasive strategies by Mulholland (2005)

The present study seeks to analyse persuasive strategies in the Covid-19 vaccination context. In this research, the researcher will examine the strategies used by Malaysian medical doctors in their Twitter accounts to persuade the public to adhere to policies to fight the Covid-19 pandemic, and this study will rely on Mulholland's (2005) collection of persuasive strategies. Based on scholarly and research studies on rhetoric, pragmatics, discourse analysis, and related fields, Mulholland (2005) compiles and lists many common persuasive strategies, accompanied by a descriptive account and practical examples. The collection includes various persuasive strategies as shown in Table 1.

Table 1. Persuasive strategies

Persuasive Strategies	Description
Repetition	This might be a precise repetition or a slight modification of a word, phrase, sentence, or idea; it can be remarks, inquiries, directives, or any other communicative act. In communication, repetition can serve a variety of purposes.
Metaphor	One approach to placing an imposition on someone without losing face on either side is to use a metaphor to suggest it. This may lead the other person to realise that the deed was indirect and had a different meaning than it appears on the surface.
Proverbs	Proverbs are expressions that have become authoritative due to their widespread use and acceptance by a community and are thus regarded as facts to be obeyed.
Quotations	There are several varieties of quotations, each with a different persuasion value: (a) a sourced quotation from a credible source; (b) an unsourced, socially accepted epigram; (c) through the use of a colleague's statements; (d) a skilful version of a well-known phrase. The citation should be relevant to the situation in all cases and accurate in the cases of (a), (b), and (c), or the user will lose face.
Comparison	Comparison is the act of putting two or more objects together by implying that they share characteristics.
Emphasis	To draw attention to something. To express powerful emotions.

	To introduce a prohibited matter.
Euphemism	A euphemism is a soft word that replaces a harsh phrase.
Exemplification	To include some examples of a subject being discussed in the text, clarify or expand on it as it would be more reasonable.
Deny	Denying anything is a positive affirmation that something negative is false.

Source: Mulholland (2005)

1.3. Social media and vaccine hesitancy

Despite the efforts in many ways, the extent of vaccine hesitancy must be assessed and addressed. The mere fact that vaccination is available does not guarantee its uptake. This has also been observed in the past, where vaccine acceptability has been influenced by factors such as knowledge (He & He, 2018), vaccine safety and importance (Yeung et al., 2016), and mistrust in sources relaying vaccine information (Jarrett et al., 2015). Subsequently, a survey was carried out by Alwi et al. (2021) to investigate factors that led to the hesitancy towards the acceptance of the COVID-19 vaccine in Malaysia. These include concerns regarding adverse effects, which took the highest percentage (95.8%), which shows that hesitancy towards vaccination is mainly due to it and followed by safety (84.7%), lack of information (80.9%), effectiveness (63.6%), and religious (20.8%) and cultural factors related to the COVID-19 vaccine (6.8%).

It is known that anti-vaccine content is frequently shared across social media. Evidence shows that prolonged exposure to such content may directly cause vaccine hesitancy. According to Betsch et al. (2010), exposure to vaccine-critical websites and blogs has negatively impacted vaccination attention. Then, it was found that even brief exposure to vaccine-critical websites has increased the overall perception of vaccine risk compared to the control websites (Betsch et al., 2010). Likewise, Ahmed et al. (2018) exhibited a significant inverse association between Twitter and Facebook as health information sources and influenza knowledge with the influenza vaccine uptake.

Netizens could represent a skewed population sample with baseline misperceptions about vaccination's advantages and adverse events. However, at the same time, they did not get educated about the benefits of vaccine-preventable diseases (Buller et al., 2019). In addition, the risks seem to be overestimated compared to the potential benefits the vaccination could offer (Betsch et al., 2012).

2. Research Methods

This study examines the persuasive strategies used by medical doctors in Malaysia to combat COVID-19 vaccine hesitancy through social media communication, specifically Twitter. The researcher will collect 90 tweets from ten Twitter pages owned by medical doctors. The present study adopted critical discourse analysis (CDA) to answer the research questions. CDA examines textual features such as sentence structure, verb tense, syntax, lexical choice, internal coherence, and discourse cohesion and is primarily based on a solid linguistic foundation (Van Dijk, 2001). The first part of the analysis involves the descriptive qualitative method. According to Krathwohl (1993), descriptive research methodology has three main goals: describing, explaining, and validating findings. It means that the description emerges from creative exploration and serves to organise the discovery. Next comes the qualitative approach focuses on the description and interpretation of data rather than counting features. This method

emphasises investigating specific speakers' strategies in specific contexts with specific people. Due to the data analysis being presented through interpretation and the description of detailed information about the persuasive strategies and the linguistic construction within those strategies, which ten Medical Doctors in Malaysia employ on their respective Twitter pages, the researcher employed both descriptive and qualitative methods.

The researcher used purposive sampling to collect the data to answer the research questions as shown in Table 2. The data to determine which strategies were used to persuade the public to accept the COVID-19 vaccination due to public fear of adverse effects and linguistics. The tweets were limited to a sample of nine tweets posted by ten medical doctors from 24 February 2021, when Malaysia received the first vaccine, until 11 October, 2021, when a rate of 90% of the adult population got fully vaccinated was achieved.

Table 2. Data collection procedure

No	Research Question	Data Collection
1	What persuasive strategies are used by Malaysian medical doctors on Twitter to combat COVID-19 vaccine hesitancy?	Tweets were posted on ten Twitter pages owned by Malaysian Medical Doctors from 24 February 2021, to 11 October 2021.

The corpus under study comprises 90 tweets. The corpus must be validated to ensure that the data represents the issue at hand and that its findings can be generalised (World Health Organization, 2021). The tweets were collected from different Twitter accounts of different medical doctors to avoid individual language idiosyncrasies. Each string of tweets will be separately treated and read several times, searching for the occurrence of the relevant strategies and the linguistic construction behind those strategies.

Research question 1 was analysed by identifying and compiling the strategies according to the theoretical framework explained in the literature review section. Every strategy was supported with descriptive examples. While the study generally operates within the area of pragmatics and discourse analysis due to it addressing the persuasive language in discourse and context, it draws for analysis on related studies on persuasion reviewed for the study (Table 3). The study relies heavily on Mulholland's (2005) medical doctors' Twitter pages.

Table 3. Data analysis

No	Research Question	Data Analysis
1	What persuasive strategies are used by Malaysian medical doctors on Twitter to combat COVID-19 vaccine hesitancy?	The question will be answered by identifying the persuasive strategies employed in posting tweets by Malaysian Health Authorities adhering to **the Theory of Persuasive Strategies by Mulholland (2005)**

3. Findings

The findings and discussions for Research Question 1 were explained based on Mulholland's collection of persuasive strategies (2005). Meanwhile, the findings and discussion for Research Question 2 were presented by referring to the ideological square framework provided by Van Dijk (2011).

3.1. RQ 1: Persuasion usage when discussing COVID-19 vaccination issue on Twitter

Table 4. The frequency of persuasive strategy usage

Persuasive Strategy	Frequency of Usage
Informing	17
Praise	12
Comparison	11
Advise	9
Appeal	7
Sarcasm	6
Criticise	6
Deny	5
Metaphor	4
Quotation	4
Warning	4
Repetition	3
Humour	2

Based on Table 4, there are 13 persuasive strategies used based on the collection of persuasive strategies by Mulholland (2005) used on Twitter in discussing COVID-19 vaccination, particularly to address vaccine hesitancy. The table 4 shows that informing has the highest usage frequency, 17 times. Next, praise is used 12 times, and comparison has a frequency of usage of 11 times. Then, advice has a frequency of 9, while appeal and sarcasm have a frequency of 7 and 6, respectively, followed by criticising and denying with 6- and 5-times usage, respectively. After that, metaphor, quotation, and warning have four times the frequency of usage each. The persuasive strategy ranked second lowest and the lowest in terms of the frequency of repetition and humour, which are used thrice and twice, respectively.

3.2. RQ 1: Persuasive usage when discussing vaccination issues on Twitter

This section presents the findings of this study by referring to the compilation of persuasive strategies by Mulholland (2005). The researcher would analyse and interpret the usage of persuasive expressions according to their respective themes: informing, praise, advise, comparison, sarcasm, appeal, denying, criticising, metaphor, quotation, warning, repetition, and humour.

3.2.1. Persuasive strategy: Informing

Table 5. The persuasion usage under the theme of informing

No.	Persuasive Expression	Theme
1	When daily cases have started to reduce by 30-45% from Total Daily Cases considering Total deaths + (Brought-in Dead), we are confident to claim a holistic recovery. The vaccination programme & strict SOPs shall continue. All Drs are still mobilised everywhere for Covid Pool.	Informing
2	COVID Vaccine complications dwarfed by virus risks Oxford grp (BMJ): Post-AZ: risk of serious venous thrombosis 200X than post-infection. Post-Pfizer: risk of	Informing

184

strokes 12X than post-infection. Vaccines: benefits far outweigh risks. Vax up, Vax fast!

These tweets are intended to inform and educate the public by providing facts, data, explanations, and details, as can be referred to in Table 5 above. The use of informing in vaccine persuasion is supported by a study conducted by Takamatsu et al. (2021) which found that sharing of information was critical in increasing vaccination rates.

3.2.2. Persuasive strategy: Praise

Table 6.   The persuasion usage under the theme of praising

No.	Persuasive Expression	Theme
1	For those who received Astra-Zeneca since Day 1 of commencement in our country & those who completed vaccination, be proud. You've done your part in this Pandemic Prevention & Public Protection. Be proud to be part of the National Programme. Be proud to stop #Covid19 outbreak.	Praise
2	Congratulations @KKMPutrajaya & people of Malaysia. We ended polio. Why? A good vaccine and improved public health. Vaccines work. Please get your #COVID19 vaccines ASAP	Praise

Praising is a common form of favorable appraisal that can be used as a persuasive strategy (Mulholland, 2005). Praise and recognition are essential for human self-esteem. In persuasion, it is important to realise that people will behave in a certain pattern to validate compliments. Praise influences persuade because people have psychological needs to be accepted and respected. Based on Table 6, it can be observed the expressions listed there have an element of praise. Praise influences persuade because people have psychological needs to be accepted and respected. From the analysis, some tweets aimed to praise Malaysian citizens who have taken the vaccine for their contribution to interstate travel. Then, the use of praise as persuasion can be seen in the analysis when the tweets intended to indirectly compliment the Muslims who took vaccination by emphasising their huge contribution to religion.

3.2.3. Persuasive strategy: Comparison

Comparison is joining two or more factors by implying that they share characteristics (Mulholland, 2005). Persuasion could be affected by choosing a particular trait to compare.

Table 7.   The persuasion usage under the theme of comparison

No.	Persuasive Expression	Theme
1	J&J's vaccine gives 100% protection from severe COVID-19 after 2nd dose — comparable to Pfizer/Moderna shots, J&J is testing a booster shot for their single-shot vaccine. 2nd dose given ~ 2mths after 1st (from J&J's press release, still unpublished).	Comparison
2	If people are dying of thirst & someone offers them water, will you ask, 'Is it Evian or Acqua Panna'? & refuse if they do not have your preferred choice? Take the damn vaccine.	Comparison

Table 7 shows that medical doctors attempted to downplay the number of death post-vaccination and divert public attention to the severity of another pandemic in the past. There was an attempt to correlate the reason behind the numbers with the advanced technology that allows COVID-19 vaccines to be produced more quickly than the other vaccines. This indirectly answers the vaccine hesitant who hesitate to take vaccines due to the shorter process that goes into producing them, which takes only months before they are approved. To conclude, the medical doctors used the comparison technique in an attempt to downplay the number of deaths caused by COVID-19 and divert the public attention to the severity of other pandemics by highlighting the number of deaths caused by the other pandemics and correlating the reason behind it happened with the advancement of technology in producing vaccines in a shorter time. This was intended to mitigate the hesitancy caused by the short period of producing COVID-19 vaccines. Aside from that, the comparison is used to correlate COVID-19 vaccines with cigarettes and COVID-19 in terms of their effect in causing a blood clot and the risk of blood clots when infected with COVID-19 against when vaccinated with AstraZeneca.

3.2.4. Persuasive strategy: Advice

Advising is a dominant act because of the adviser's significant power over the receiver (Mulholland, 2005). However, advising someone does not mean someone is entitled to commit to it as it is upon the addressee's desire to follow it or not, as opposed to a warning that entails the addressee to do all it takes to prevent bad repercussions (Alhabuobi, 2021).

Table 8. The persuasion usage under the theme of advising

1	Please note that the best vaccine is the one that is most accessible to you. Do not compare. All are good. We have to anticipate the risk of infectivity in the community soon. Stay strong for those waiting for their AZ slots today. I know how you feel. Moga cepat dapat	Advise
2	If you have allergies, inform the doctor before vaccination. You'll be paid special attention to after the vaccination as there's a slightly higher risk of developing AEFI (adverse event following immunisation). During the observation period, inform doctors if you feel unwell.	Advise

Some forms of advising are explaining, replying, and instructing. Advising will only work when you give reasons for people to trust you (World Health Organization, 2021). In the present study, the messages are taken from medical doctors and health experts and have the credibility to talk about health-related issues, thus having better chances to educate people about it as shown in Table 8. To conclude, medical doctors used their influence and credibility to talk about COVID-19 vaccines and advised the public to influence them better to take the COVID-19 vaccines. Due to their background education and skill to heal others, these doctors assume the moral position of a group of people whom generally people have to trust because of their capability to save lives, an ability ordinary people do not have.

3.2.5. Persuasive strategy: Appeal

According to Tumasang (2022), the effectiveness of remarks depends on their power to appeal to their addressee. A statement must appeal to the author's ethos (credibility), logos (logic), or pathos (emotions).

Table 9. The persuasion usage under the theme of appeal

No.	Persuasive Expression	Theme
1	Joined @Khairykj in briefing government and backbencher MPs on vaccination program. Comprehensive presentation & good interactions & suggestions. Transparency & clear information is crucial for a bipartisan approach. #LindungDiriLindungSemua We can do this Malaysia!	Appeal
2	Join @ProfAdeeba , Karen Tan and me again this Sunday for further discussions on vaccine side effects. Ask us questions so we can help allay some of your concerns & anxieties as best as we can together with two guest speakers! @SenseWScience	Appeal

The next expressed persuasive strategy of the vaccine tweets is the appeal (Table 9). The appeal aims to persuade others by appealing to their emotions, values, character, and reason. Appealing to someone is frequently done in public, in front of witnesses, or in writing that others can see (Mulholland, 2005). In the examples, the appeal is made to those refusing vaccines.

3.2.6. Other lesser-used persuasive strategies

3.2.6.1. Sarcasm

The following strategy extracted from the vaccine tweets is sarcasm. Sarcasm is a sentiment in which people reveal implicit information, usually the opposite of the original message, to emotionally hurt someone or mock something (Eke et al., 2020). Sidhu et al. (2021) say sarcasm is usually bitter, acidic, and frequently insulting. Sarcasm was one of the expressed forms of persuasion in the vaccine tweets. These tweets were intended to be amusing to the COVID-19 vaccination situation, sarcastically. It is also used to influence opinion while at the same time indirectly attacking the opponent by shaping disagreement space.

Example: Thought experiment: If someone takes a vaccine and gets hit by a meteor 5 mins later, did the vaccine cause his death? Correlation is not always causation.

Sarcasm helps the user from openly looking threatening or insulting the intended audience, which sometimes works better than criticism as it may be destructive or too harsh for the public. Sarcasm was used in specific humour related to microchip vaccine conspiracy theories, mocking the anti-vaccines' failure to deduce the cause-and-effect relationship between two occurrences and pointing out their hypocrisy.

3.2.6.2. Criticise

Criticism is a form of speech act frequently employed to communicate the speaker's unhappiness or disapproval of the addressee's conduct or encourage the addressee to change their future actions to

meet the speaker's criteria or expectations (El-Dakhs et al., 2019). Criticism can be a positive approach to boost motivation and urge people to change their behaviours to achieve tremendous success (Fong et al., 2018).

Example: Public confidence is important to understand how the vaccine works, body response, Immune reactivity & protection. Suppose you have nothing to say. Don't spread the wrong information to the public. You're not doing justice with your weak explanation.

The tweet was posted to criticise the anti-vaccine groups harshly. The use of criticism has been emphasised in their roles to provide input to improve moral character and encourage certain behaviours.

3.2.6.3. Denial

With the increased usage of social media, rumours have the potential to go haywire as they can be easily shared with one click. This is especially bad when false rumours can cause dread and anxiety (Li et al., 2022). Denials are a feasible technique for debunking rumours (Ozturk et al., 2015).

Example: Pfizer vaccine still in the trial? They completed the phase 3 trial long ago, in 2020. Link: https://nejm.org/doi/full/10.1056/nejmoa2034577… Vaccines approved by NPRA have already completed phase 3 trials. So which facts do you refer to2014?

A persuasive strategy of denial was employed to shut down many unsubstantiated rumours that spread on social media, for instance, regarding the adverse event following immunisation (AEFI). The analysis of several tweets by medical doctors showed that they attempted to defend their stand on vaccination against the anti-vaccine group and gain confidence from the vaccine-hesitant group.

4.   Conclusions

This research contained one research question that focused on using persuasion. Based on the analysis, there were 13 persuasive strategies employed in vaccine tweets from 10 different Twitter accounts owned by medical doctors (refer to Table 5). Persuasive strategies, "informing, praising, comparing and advising", were used more than other persuasive strategies. These strategies were used to reduce uncertainty by offering information. Next, praising fulfils the psychological need to be accepted and respected. The medical doctors used the comparison technique to downplay the number of deaths caused by COVID-19, divert the public attention to the severity of other pandemics, and correlate the reason behind it with the advancement of technology in producing vaccines in a shorter time. The next persuasive strategy is advice; advising will only work when the person giving the advice has some authority or influence that can earn trust. Other lesser-used strategies were an appeal, sarcasm, criticism, denial, use of metaphors and quotations, warning, and repetitions.

The findings lead the researcher to conclude the following points. First is the need to improve persuasion by health professionals as an authority in health-related discourse. Despite the best intentions of medical doctors, as shown in their effort in spending their time to educate the public about vaccines and reassure them, the lack of coordination and overall crisis communication skills might undermine the results. This may also cause more inquiries to arise. Hence, it is the responsibility of health authorities to review existing practices and re-examines their communication in handling crises. Second is the

importance of using a standard language in Malay or English instead of code-switching or mixing. This is essential to avoid miscommunication and misinterpretation of what has been said. For example, suppose a word or statement is misunderstood. In that case, the message may be offensive to some people, resulting in a deterioration of the professional relationship between the health authority and the public, which could diminish people's trust in the health authority. The third is the importance of diversifying ways to promote vaccines through Twitter. For example, instead of mere posting, health authorities may increase the usage of other Twitter features to reach the audience, such as Twitter space, having a live audio conversation, and addressing public concerns.

To summarise, this study highlighted persuasion on Twitter that discussed the COVID-19 vaccination issue, especially in Malaysia. While examining the use of each persuasion strategy, every strategy should be appropriately considered by linking them to the context of the message. This is because some persuasion may improve a message when used in the right way. Nevertheless, it also may impede the readers' understanding when the author does not set a proper strategy when they would like to use a particular persuasion strategy, thus making it almost impossible for the audience to comprehend the message provided to them genuinely. This study emphasised the use of persuasion by referring to the context of the message of the tweets. This is important to ensure that the intention of persuasion in each context can be understood thoroughly. It also should be noted that every strategy listed in the analysis was taken from Mulholland's (2005) compilation of persuasive strategies, except for sarcasm.

Acknowledgments

References

Ahmed, N., Quinn, S. C., Hancock, G. R., Freimuth, V. S., & Jamison, A. (2018). Social media use and influenza vaccine uptake among white and African American adults. *Vaccines 2018, 36*(49), 7556–61. https://doi.org/10.1016/j.vaccine.2018.10.049

Alemi, M., Latifi, A., & Nematzadeh, A. (2018). Persuasion in political discourse: Barak Obama's presidential speeches against ISIS. *Russian Journal of Linguistics, 22*(2), 278-291.

Alhabuobi, T. A. (2021). Levels of warning in the text messages sent by the Saudi Ministry of Health during the Covid-19 pandemic. *Arab World English Journal (AWEJ), 12*(4), 366-386. http://doi.org/10.2139/ssrn.3998655

Alwi, S. S., Rafidah, E., Zurraini, A., Juslina, O., Brohi, I. B., & Lukas, S. (2021). A survey on COVID-19 vaccine acceptance and concern among Malaysians. *BMC public health, 21*(1), 1-12.

Arumugam, N., Farahin, N., Selvanayagam, S., & Sathiyasenan, S. D. (2019). Social media in enhancing english language competence among undergraduates. *Journal of Institutional Research South East Asia, 17*(2), 86-102 *September/October 2019*. https://doi.org/10.1002/j.1556-6676.1996.tb02311.x

Berger, L. L., & Stanchi, K. M. (2018). *Legal persuasion: A rhetorical approach to the science*. Routledge.

Betsch, C., Brewer, N. T., Brocard, P., Davies, P., Gaissmaier, W., Haase, N., Leask, J., Renkewitz, F., Renner, B., Reyna, V. F., Rossmann, C., Sachse, K., Schachinger, A., Siegrist, M., & Stryk, M. (2012). Opportunities and challenges of Web 2.0 for vaccination decisions. *Vaccine, 30*(25), 3727-3733. https://doi.org/10.1016/j.vaccine.2012.02.025

Betsch, C., Renkewitz, F., Betsch, T., & Ulshöfer, C. (2010). The influence of vaccine-critical websites on perceiving vaccination risks. *Journal of Health Psychology, 15*(3), 446–55. https://doi.org/10.1177/1359105309353647

Bonnevie, E., Gallegos-Jeffrey, A., Goldbarg, J., Byrd, B., & Smyser, J. (2020). Quantifying the rise of vaccine opposition on Twitter during the COVID-19 pandemic. *Journal of Communications in Healthcare, 14*(4), 1–8.

Buller, D. B., Walkosz, B. J., Berteletti, J., Pagoto, S. L., Bibeau, J., Baker, K., Hillhouse, J., & Henry, K. L. (2019). Insights on HPV vaccination in the United States from mothers' comments on facebook posts in a randomized trial. *Human Vaccines & Immunotherapeutics,15*(7–8), 1479–87. https://doi.org/10.1080/21645515.2019.1581555

Dutta, S., Das, D., & Chakraborty, T. (2020). Changing views: Persuasion modeling and argument extraction from online discussions. *Information Processing and Management, 57*(2), 1–14. https://doi.org/10.1016/j.ipm.2019.102085

Eke, C. I., Norman, A. A., Shuib, L., & Nweke, H. F. (2020). Sarcasm identification in textual data: Systematic review, research challenges and open directions. *Artificial Intelligence Review, 53*(6), 4215-4258.

El-Dakhs, D. A. S., Ambreen, F., Zaheer, M., & Gusarova, Y. (2019). A pragmatic analysis of the speech act of criticizing in university teacher-student talk: The case of English as a lingua franca. *Pragmatics, 29*(4), 493-520.

Fong, C. J., Schallert, D. L., Williams, K. M., Williamson, Z. H., Warner, J. R., Lin, S., & Kim, Y. W. (2018). When feedback signals failure but offers hope for improvement: A process model of constructive criticism. *Thinking Skills and Creativity*, *30*, 42–53. https://doi.org/10.1016/j.tsc.2018.02.014

Haddad, H., & Montero-Martinez, S. (2020). COVID-19: A metaphor-based neologism and its translation into Arabic. *Journal of Science Communication.* *19*(5). https://jcom.sissa.it/archive/19/05/JCOM_1905_2020_A01

He, J., & He, L. (2018). Knowledge of HPV and acceptability of HPV vaccine among women in western China: A cross-sectional survey. *BMC Women's Health 2018*, *18*, 130.

Ibrahim, M. N. A., Arumugam, N., Mello, G. D., & Mamor, M. S. H. (2022). Behavioural Changes in Response to Covid-19 Pandemic. *International Journal of Academic Research in Business and Social Sciences, 12*(7). https://doi.org/10.6007/ijarbss/v12-i7/14388

Jarrett, C., Wilson, R., O'Leary, M., Eckersberger, E., & Larson, H. J. (2015). Strategies for addressing vaccine hesitancy - A systematic review. *Vaccine, 33*(34), 4180-4190. https://doi.org/10.1016/j.vaccine.2015.04.040

Katermina, V., & Yachenko, E. (2020). Axiology of COVID-19 as a linguistic phenomenon in English mass media discourse. *Advances in Journalism and Communication, 8*(2), 59-67. https://doi.org/10.4236/ajc.2020.82005

Kaur, K. M. S., Suppiah, P. C., Arumugam, N., & Razak, M. I. (2022). Politeness and negotiation strategies in handling customers: Conflict-resolution. *International Journal of Academic Research in Business and Social Sciences, 12*(8), 1002-1017

Krathwohl, D. R. (1993). *Methods of educational and social science research: An integrated approach*. Longman/Addison Wesley Longman.

Krishnan, I. A., De Mello, G., Arumugam, N., Suppiah, P. C., Paramasivam, S., & Ibrahim, M. N. A. b. (2021). A Comparative Study of Speech Acts Between Malaysia and Singapore on the First MCO Announcements of Covid-19. *International Journal of Academic Research in Business and Social Sciences, 11*(8), 992-1008. https://doi.org/10.6007/ijarbss/v11-i8/10792

Lestari, D. (2018). *Persuasive function in food and beverage service: A sociolinguistics approach*.

Li, P., Sun, X., Yu, H., Tian, Y., Yao, F., & Xu, G. (2022). Entity-Oriented Multi-Modal Alignment and Fusion Network for Fake News Detection. *IEEE Transactions on Multimedia, 24*, 3455-3468. https://doi.org/10.1109/tmm.2021.3098988

Lulu, R. A., & Alkaff, S. (2019). Analyzing legitimation strategies in relationship advice articles of women's magazines. *Malaysian Journal of Media Studies, 23*(1), 1–14. https://doi.org/10.17576/gema-2019-1902-02

Ma'mor, M. S. H., Arumugam, N., Mello, G. D., Ibrahim, M. N. A., & Sathiyasenan, S. D. (2022). Challenges faced by Higher Education Students with Special Needs in Online Distance Learning (ODL). *International Journal of Academic Research in Business and Social Sciences, 12*(9). https://doi.org/10.6007/ijarbss/v12-i9/14928

Malik, A. A., McFadden, S. M., Elharake, J., & Omer, S. B. (2020). Determinants of COVID-19 vaccine acceptance in the US. *EClinicalMedicine*, *26*, 1-8. https://doi.org/10.1016/j.eclinm.2020.100495

Mulholland, J. (2005). *Handbook of persuasive tactics*. Routledge.

Ng, Q. X., Chee, K. T., De Deyn, M. L. Z. Q., & Chua, Z. (2020). Staying connected during the COVID-19 pandemic. *International Journal of Social Psychiatry, 66*(5), 519-520.

Ozturk, P., Li, H., & Sakamoto, Y. (2015). Combating rumor spread on social media: the effectiveness of refutation and warning. In: 2015 *48th Hawaii International Conference on System Sciences (HICSS)*, pp. 2406–2414. Hawaii, USA.

Rethina Velu, U. R., Suppiah, P. C., & Arumugam, N. (2022). Speech acts of concern: Choice of utterances by Mahathir Mohamad. *International Journal of Social Science Research, 10*(2), 1- 24.

Sidhu, D. M., Westbury, C., Hollis, G., & Pexman, P. M. (2021). Sound symbolism shapes the English language: The maluma/takete effect in English nouns. *Psychonomic Bulletin & Review*. https://doi.org/10.3758/s13423-021-01883-3

Simatupang, E. C., & Supri, I. Z. (2020). Compound words that occur during the global pandemic Covid-19: A morphosemantic study. *English Review: Journal of English Education, 8*(2), 127-134. https://doi.org/10.25134/erjee.v8i2.2824

Swire-Thompson, B., & Lazer, D. (2020). Public health and online misinformation: Challenges and recommendations. *Annual Review of Public Health, 41*(1), 433–451.

Takamatsu, A., Honda, H., Kojima, T., Murata, K., & Babcock, H. M. (2021). Promoting coronavirus disease 2019 (COVID-19) vaccination among healthcare personnel: A multifaceted intervention at a tertiary-care center in Japan. *Infection Control & Hospital Epidemiology*, 1-6.

Tumasang, S. S. (2022). Motivational quotes on social media: A rhetorical appraisal. *International Journal of Linguistics Studies, 2*(1), 8-18.

Van Dijk, T. A. (2001). Multidisciplinary CDA: A plea for diversity. In R. Wodak, & M. Meyer, (Eds.), *Methods of critical discourse analysis* (pp. 95–120). SAGE. https://doi.org/10.4135/9780857028020.n5

Van Dijk, T. A. (2011). Discourse studies and hermeneutics. *Discourse Studies, 13*(5), 609-621. https://doi.org/10.1177/1461445611412762

World Health Organization. (2021). WHO Coronavirus (COVID-19) dashboard. https://covid19.who.int/table

Yeung, M. P., Lam, F. L., & Coker, R. (2016). Factors associated with the uptake of seasonal influenza vaccination in adults: A systematic review. J. *Public Health 2016, 38*, 746–753.