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The effects of using mother tongue in delivering health protocol messages on health attitudes and behaviors: Do gender, age, and education level make any difference?

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ABSTRACT
This study aimed to investigate the effects of using the mother tongue in delivering audiovisual health protocol messages on health attitudes and behavior during the Covid-19 pandemic. The measurement of the investigation into the variables of gender, age, and education level relied on the use of a 2X2X4 factorial design. Following the design, this study involved 240 volunteer participants randomly selected from 34 provincial clusters in the Indonesian territory. The data on the participants' health attitudes and behaviors were collected through an online questionnaire formulated on five (5) scales. The questionnaire was given to 240 participants as a sample group after receiving health protocol messages conveyed in their mother tongue in a video. The collected data were analyzed by using SPSS and an additional syntax design. The analysis shows that the use of the mother tongue in conveying health protocol messages simultaneously had a significant effect on changes in attitudes and behavior by attending to gender, age, and education levels as contributing factors to the study results. The significant impact on attitude was partially seen from gender and age level factors, while the considerable influence on behavior was seen from gender factors. The other important findings, such as the interaction between factors and the proposed concept of direct persuasive perlocutionary, were also discussed.

Keywords: Attitudinal change; behavioral change; health protocol; mother tongue

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INTRODUCTION

The Corona Virus Diseases (COVID-19) pandemic period that has occurred since the end of 2019, allegedly spread from the city of Wuhan, China is a blow to not only physical health but also mental health such as worry, fear, anxiety, and uncertainty contributing to psychological crisis (Ares et al., 2021; Megatsari et al., 2020; Michels et al., 2021; Zhong et al., 2020). This condition causes significant social changes to a social order system, such as changes in social care regulations (Vicary et al., 2020), unsatisfactory children's health needs or social services (Ray et al., 2020), disordered managerial business or business at large (Cortez & Johnston, 2020; Japutra & Situmorang, 2021). Almost all nations in the world have been trying in various ways to overcome the spread of COVID-19 so that public health is maintained even though, statistically, as of February 22-November 2021, the virus has claimed about 5,151,643 lives in the world with 256,966,237 cases (World Health Organization, 2021). In Indonesia itself, the issue of

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the increasing victims is statistically more evident, as seen in the latest report of the Task Force for Handling COVID-19 (2021) as of November 22, 2021, there were 4,253,598 cases with the number of deaths reaching 143,744 people.

This condition has necessitated the initiation of international health protocols by the World Health Organization (WHO), such as lockdowns, activities outside the home, home health conditions, and clinical protocols (González-Blanco et al., 2020; Mitra et al., 2020; Nair et al., 2021; Sallard et al., 2021; Zarrabi et al., 2020) and instructed the nations of the world to immediately research a way to find an effective vaccine for curative and preventive treatment (Costa et al., 2021; Gupta, 2020; Ita, 2020; Li, 2021; Towse et al., 2021). One effort that is medically being conducted is by delivering vaccines. However, the currently available vaccines' efficacy is considered not yet sufficient that it still needs further development. According to Bartsch et al. (2021), there are few situations in which the first available COVID-19 vaccine is worth abandoning in favor of a vaccine that will be available later in the outbreak assuming it will be much more effective.

Because the COVID-19 pandemic has not yet ended, dissemination of information to ensure the implementation of health protocols is necessary. This has mostly utilized social media because they are considered to be effective in disseminating health information such as infodemic with various styles of language (Hou, 2021; Tsao et al., 2021) and through announcements from the government (Ashcroft et al., 2021; Chen et al., 2020; Hou, 2021; Mendolia et al., 2021; Tang et al., 2021; Tsao et al., 2021). Everything is done to prevent and treat individuals and social groups from COVID-19 attacks and instill healthy attitudes and behaviors. However, some have identified the messages not only having a negative influence on the construction of public knowledge about COVID-19 but also overloaded (Liu et al., 2021; Radwan et al., 2020; Su, 2020) and paradoxical at the same time (Cato et al., 2021). In viewing the social impacts of the pandemic, this study observed the role of the ways COVID-19 information is delivered in shaping individual attitudes and behaviors in their lives.

Apparently, the delivery of health protocol messages during the COVID-19 pandemic does not seem to significantly influence public attitudes and behavior toward health, especially in several regions in Indonesia. We assume that several factors may contribute to this condition, such as language use, gender, age level, education level, literacy ability, and type of profession to name a few. Thus, it is assumed that the way information is delivered has not ensured public health attitudes and behaviors. We further suspect that linguistics is a factor to be considered in delivering the health protocol messages, i.e., whether the use of the mother tongue in conveying all forms of health protocol messages can ensure that individuals and social groups follow the stipulated protocols.

Mother tongue

Mother tongue's definition in this study follows Bühmann and Trudell's (2008) concept. In that, it is a language spoken in the individual's home. The use of the term "mother tongue" is more ideological than the use of the term "first language". It is by means of avoiding the use of more neutral language. The use of the mother tongue accounts for "the persistence of the monolingual paradigm and its homologous logic" (Yildiz, 2012, p. 13). Mother tongue in this study refers to the first language learned at home and is used to confirm that home language can still be considered to convey messages more effectively.

Based on the variable of mother tongue use, we then formulated a factorial design to synergize these variables to attest to our assumption. This unidirectional relationship (recursive) will be reviewed from three (3) factor variables such as gender, age, and education level. For the gender factor, we involved the categories of males and females. For the age factor, we applied the category of adult and elderly age levels. In contrast, we involved Elementary School, Junior High School, Senior High School, and Higher Education levels for the education level factor. Involving those factors is intended to see the degree of audiovisual influence using the mother tongue to convey health protocols on individual attitudes and behaviors.

METHODS

Design

This study applied a quantitative approach with a 2X2X4 type of factorial design to investigate how the determining factors such as gender, age, and education level affect the dependent variables: attitudes and behavior, either jointly or partially. Each element involved its respective levels consisting of male and female levels for the gender factor, adult and elderly categories for the age level factor, and Elementary School, Junior High School, Senior High School, and Higher Education levels for the Education level factor. The factorial design followed the formulated criteria (see Table 1).

In terms of the age factor, this factorial design only involved the adult level within the age range of 20-60 years and the elderly level with the age range of 61 years and over. Children's age was not considered for this analysis due to the infeasibility of virtual monitoring over the treatment process.

Table 1
Factorial Design

GENDER (A)	AGE (B)	EDUCATION (C)			
		Elementary	**Junior**	**Senior**	**Higher**
MALE	Adult (20-60 years)	$A_1B_3C_1$	$A_1B_3C_2$	$A_1B_3C_3$	$A_1B_3C_4$
	Further Age (up to 61 years)	$A_1B_4C_1$	$A_1B_4C_2$	$A_1B_4C_3$	$A_1B_4C_4$
FEMALE	Adult (20-60 years)	$A_2B_3C_1$	$A_2B_3C_2$	$A_2B_3C_3$	$A_2B_3C_4$
	Further Age (up to 61 years)	$A_2B_4C_1$	$A_2B_4C_2$	$A_2B_4C_3$	$A_2B_4C_4$

Population and Sample

The population in this study included all speakers of the mother tongue throughout the Indonesian territory, consisting of 34 provinces with diverse socio-cultural backgrounds, including in terms of their mother tongues. Eleven randomly selected provincial cluster samples covered fifteen mother tongue-speaking areas. The eleven provincial clusters consisted of the provinces of Aceh, Bengkulu, Central Java, East Java, West Kalimantan, Lampung, Palembang, Central Sulawesi, Southeast Sulawesi, South Sumatra, and North Sumatra. The sample for the treatment consisted of 240 participants who were randomly selected from the 15 regions in the 10 provincial clusters on the condition that one treatment group had to have three factor characteristics and their levels were equal to sixteen cells. Statistically, the number of respondents for filling out the two attitude and behavior instruments was a minimum of 10 respondents per research design cell or a minimum of 10 X 16 = 160 respondents. Taking into account the bias of the response, the analysis selected 160 of 240 available respondents.

Techniques of Data Collection

The data on participants' attitudes and behaviors were collected online using Google Forms as the instrument. Each instrument contained 17 statements with 5 scales for each instrument. Before the data were collected through the questionnaire, the participants were first given treatment by giving videos containing health protocol messages containing instructions delivered in their mother tongue. In this phase, we assigned 15 group managers to assist in conducting and monitoring the treatment process for 240 participants spread over 15 different mother tongue-speaking areas. The group managers formed their respective groups, according to their native language speakers, using the WhatsApp platform to involve all participants who met the characteristics of the factors and their respective levels. The treatment was carried out for one month with a minimum frequency of four times. The videos were then shared on WhatsApp groups for all participants to watch.

Techniques of Data Analysis

All data on the Attitudes and Behavior questionnaire were analyzed by using SPSS version 20. This factorial design was included in a very complex category because it has more than ten contrasting relationships between the levels, so a separate syntax design was needed to assist the data analysis process. This was because the availability and capabilities of SPSS features are not sufficient for the data analysis process, where SPSS can only analyze a maximum of 10 contrasts between the levels for a factor variable. At this stage, all data were analyzed descriptively and quantitatively to yield the findings. Furthermore, the statistical prerequisite test was carried out before testing the hypothesis to see the value of the influence between factors, while to see the interaction between factors, a further difference test was carried out.

FINDINGS

Descriptive Statistics

Descriptively as shown in Table 2, the results show that the average attitude changes experienced by respondents after receiving treatment are 50.83. This value is not much different from the median value, which is 50.00. This shows that the variation in respondents' attitude changes does not occur in a large variation, as indicated by the standard deviation value of 4.87.

On the other hand, it was found that the average behavior change, as shown in Table 3, experienced by respondents after receiving treatment was 64.94. This value is not much different from the median value of 65.00. This also shows that the variation in the behavior of respondents did not indicate a considerable variation, as indicated by the standard deviation value of 7.89.

Statistical Prerequisite Test

Normality Test

Based on the normality test results, as shown in Table 4, the attitude and behavior data are typically distributed. This is indicated by the value of Kolmogorov-Smirnov Z, which is 1.093 and 1.295, and the value of Sig. Attitude variable data, which is 0.183. While Behavior variable data shows Sig. of 0.070. Both values of Sig. are more significant than the value of = 0.05.

Homogeneity test

Based on the homogeneity of variance test results, the response data show homogeneity of variance. Table 5 shows the data at this point.

The normality and homogeneity test results show that the requirements for the dependent variable hypothesis test were met.

Table 2

Descriptive statistics for attitude variable

N	Valid	160
	Missing	0
Mean		50.8313
Median		50.0000
Mode		50.00
Std. Deviation		4.86965
Variance		23.713
Skewness		.540
Std. Error of Skewness		.192
Kurtosis		.316
Std. Error of Kurtosis		.381
Minimum		40.00
Maximum		66.00
Sum		8133.00
Percentiles	25	47.0000
	50	50.0000
	75	54.0000

Table 3

Descriptive statistics for attitude behavior

N	Valid	160
	Missing	0
Mean		64.9438
Median		65.0000
Mode		65.00
Std. Deviation		7.88857
Variance		62.230
Skewness		-.519
Std. Error of Skewness		.192
Kurtosis		-.343
Std. Error of Kurtosis		.381
Minimum		46.00
Maximum		79.00
Sum		10391.00
Percentiles	25	60.0000
	50	65.0000
	75	71.0000

Table 4

Normality test

One-Sample Kolmogorov-Smirnov Test			
N		Attitude	Behavior
		160	160
Normal Parameters [a,b]	Mean	50.8313	64.9438
	Std. Deviation	4.86965	7.88857
Most Extreme Differences	Absolute	.086	.102
	Positive	.086	.056
	Negative	-.047	-.102
Kolmogorov-Smirnov Z		1.093	1.295
Asymp. Sig. (2-tailed)		.183	.070

a. Test distribution is Normal.
b. Calculated from data.

.

Table 5

Homogeneity test

Levene's Test of Equality of Error Variances Dependent Variable: Behavior			
F	df1	df2	Sig.
1.718	15	144	.053

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + A + B + C + A * B + A * C + B * C + A * B * C

Levene's Test of Equality of Error Variances Dependent Variable: Attitude			
F	df1	df2	Sig.
1.718	15	144	.053

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + A + B + C + A * B + A * C + B * C + A * B * C

Hypothesis test

Dependent variable – attitude

If viewed simultaneously, a significant effect on the Attitude variable is only seen in the Gender (A) and Age (B) factors. This is shown statistically at the significance value of Corrected Model 0.002 < =0.05. However, when viewed partially, the analysis results show that there is a significant difference in the effect of the research factor variables, as shown in Table 6.

It can be seen that the Gender (A) variable has a significant difference in influence between male and female levels, as indicated by the value of Sig. Gender factor (A) is 0.017 < =0.05. Furthermore, in terms of the Age factor variable (B), there is a significant difference in influence between the adult and elderly age levels, as indicated by the value of Sig. Age factor (B) is 0.014 < =0.05. The results of the data analysis on the Education Level (C) factor do not show a significant difference in influence between several levels of Education Level, and changes in respondents' attitudes tend to be the same even though there is an average difference between education levels. Because the results of simultaneous hypothesis testing, namely Gender (A) + Age (B) show a significant influence on the Attitude variable, it is necessary to carry out further difference tests for the two-factor variables to see the influence between the levels on each of these factor variables.

Table 6

Dependent Variable Statistical Test – Attitude

Tests of Between-Subjects Effects
Dependent Variable: Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	793.344[a]	15	52.890	2.558	.002
Intercept	413410.556	1	413410.556	19996.345	.000
A	120.756	1	120.756	5.841	.017
B	127.806	1	127.806	6.182	.014
C	126.769	3	42.256	2.044	.110
A * B	10.506	1	10.506	.508	.477
A * C	192.669	3	64.223	3.106	.028
B * C	119.619	3	39.873	1.929	.128
A * B * C	95.219	3	31.740	1.535	.208
Error	2977.100	144	20.674		
Total	417181.000	160			
Corrected Total	3770.444	159			

a. R Squared = .210 (Adjusted R Squared = .128)

Inter-Level Difference Test on Gender Factors (a)

Based on the further difference test, the Attitude response data on the Gender factor, namely between male and female levels, statistically show the value of Sig. = 0.043 < = 0.05 which means significant. This shows a difference in which the Attitude change of males is better or more obvious than that of females. The results of the further difference test between levels on the Gender (A) factor can be seen in Table 7.

Table 7

Result of Further Difference Test on Gender Factor (A)

Group Statistics

	A	N	Mean	Std. Deviation	Std. Error Mean
Attitudes	1.00	80	51.7000	5.34008	.59704
	2.00	80	49.9625	4.20501	.47013

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Attitudes	Equal variances assumed	4.182	.043	2.286	158	.024	1.73750	.75992	.23658	3.23842
	Equal variances not assumed			2.286	149.763	.024	1.73750	.75992	.23595	3.23905

Inter-level difference test on age factor (B)

Based on the further difference test, the response data on the Attitude variable, namely between adults and the elderly, statistically show the value of Sig. = 0.020 < = 0.05 which means significant. This shows that there is a difference in which changes in Attitudes of adults are more obvious than those of the elderly. The results of the further difference test between levels of the Age factor (B) can be seen in Table 8.

Table 8

Results of Further Difference Test on Age Factor (B)

Group Statistics

	B	N	Mean	Std. Deviation	Std. Error Mean
Attitudes	1.00	80	51.7250	5.12372	.57285
	2.00	80	49.9375	4.45610	.49821

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Attitudes	Equal variances assumed	2.774	.098	2.354	158	.020	1.78750	.75919	.28803	3.28697
	Equal variances not assumed			2.354	155.017	.020	1.78750	.75919	.28781	3.28719

Further difference test on factor interaction

When viewed in terms of interaction, it can be seen that there is an interaction between the variables of Gender (A) and Education Level (C) so it is necessary to carry out a further difference test for the interaction between these variables as shown in Table 9. First, the male gender with a junior high school education level background shows more changes in attitude than the female gender with the same education level.

Table 9

Result of Further Difference Test on Factors Interaction (A) X (C)

Contrast Tests

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
Attitudes	Assume equal variances	1	1.1000	1.48019	.743	152	.459
		2	.9000	1.48019	.608	152	.544
		3	.5500	1.48019	.372	152	.711
		4	-.2000	1.48019	-.135	152	.893
		5	-.5500	1.48019	-.372	152	.711
		6	-.3500	1.48019	-.236	152	.813
	Does not assume equal variances	1	1.1000	1.58596	.694	34.463	.493
		2	.9000	1.16416	.773	35.570	.445
		3	.5500	1.21585	.452	37.093	.654
		4	-.2000	1.47005	-.136	29.500	.893
		5	-.5500	1.51132	-.364	31.506	.718
		6	-.3500	1.06023	-.330	37.550	.743

Second, males with a junior high school education level background show changes in attitude more than those with an elementary education level background. Third, males with higher education level background show more changes in attitudes than those with junior high education level background. Fourth, males with a junior high school education level background show more attitude changes than those with a high school education level background.

Dependent Variable – Behavior

If viewed simultaneously, the significant effect on the Behavior variable can only be seen in the Age factor (B) as shown in Table 10. This is shown statistically at the significance value of the Corrected Model 0.000<α=0.05. When viewed partially, the results of the analysis show that there is no significant difference in the effect of the research factor variables when viewed from the Gender (A) and Education Level (C) factors.

However, when viewed from the Age factor variable (B), there is a significant difference in behavior changes as indicated by the value of Sig. Gender factor (B) is 0.000 <α = 0.05.

However, it is interesting that, among these variables, there is a significant interaction effect. The interaction between Gender (A) and Age (B) with the value of Sig. of 0.000 < = 0.05 indicates that there is a difference in the influence of the interactions of the two variables. The interaction between Gender (A) and Education Level (C) with the value of Sig. of 0.000 < = 0.05 also shows that there is a difference in influences between the interactions of the two variables. Likewise, the interaction of Age (B) and Education Level (C) with the value of Sig. of 0.006 < = 0.05 indicates that there is a difference in influences between the interactions of the two variables.

Table 10
Dependent Variable Statistical Test – Behavior

Tests of Between-Subjects Effects
Dependent Variable: Behavior

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5301.194[a]	15	353.413	11.079	.000
Intercept	674830.506	1	674830.506	21155.943	.000
A	58.806	1	58.806	1.844	.177
B	1995.156	1	1995.156	62.548	.000
C	34.869	3	11.623	.364	.779
A * B	907.256	1	907.256	28.442	.000
A * C	814.169	3	271.390	8.508	.000
B * C	412.819	3	137.606	4.314	.006
A * B * C	1078.119	3	359.373	11.266	.000
Error	4593.300	144	31.898		
Total	684725.000	160			
Corrected Total	9894.494	159			

a. R Squared = .536 (Adjusted R Squared = .487)

Further difference test for age factor (B)
Based on the further difference test, the effect of behavior variable response data on the Age factor, which is between adults and the elderly, statistically shows the value of Sig. That is 0.000 < = 0.05, which means significant. This shows that there is a difference in which adults show more behavioral changes. The results of the advanced difference test for the Age factor (B) can be seen in Table 11.

Table 11
Results of Further Difference 354es Ton Age Factor (B)

Group Statistics

	B	N	Mean	Std. Deviation	Std. Error Mean
Behavior	1.00	80	68.4750	6.20530	.69377
	2.00	80	61.4125	7.84130	.87668

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Behavior	Equal variances assumed	5.052	.026	6.317	158	.000	7.06250	1.11799	4.85437	9.27063
	Equal variances not assumed			6.317	150.073	.000	7.06250	1.11799	4.85347	9.27153

Further Difference Test on Interaction
When viewed from the aspect of interaction, it can be seen that there are interactions between variables; Gender (A) X Age (B), Gender (A) X Education Level (C), and Age (B) X Education Level (C). Thus, it is necessary to conduct further interaction tests to measure these variables as shown in Tables 12, 13, and 14.

However, it is interesting that, among these variables, there is a significant interaction effect. The interaction between Gender (A) and Age (B) with the value of Sig. of 0.000 < = 0.05 indicates that there is a difference in the influence of the interactions of the two variables. The interaction between Gender (A) and Education Level (C) with the value of Sig. of 0.000 < = 0.05 also shows that

there is a difference in influences between the interactions of the two variables. Likewise, the interaction of Age (B) and Education Level (C) with the value of Sig. of 0.006 < = 0.05 indicates that there is a difference in influences between the interactions of the two variables.

Table 12
Results of Further Difference Test on Interaction (A) X (B)

Contrast Tests							
		Contrast	**Value of Contrast**	**Std. Error**	**t**	**df**	**Sig. (2-tailed)**
Behavior	Assuming equal variances	1	-3.5500	1.49071	-2.381	156	.018
		2	5.9750	1.49071	4.008	156	.000
		3	2.3000	1.49071	1.543	156	.125
		4	11.8250	1.49071	7.932	156	.000
	Not assuming equal variances	1	-3.5500	1.33731	-2.655	77.728	.010
		2	5.9750	1.62973	3.666	76.181	.000
		3	2.3000	1.40146	1.641	76.430	.105
		4	11.8250	1.57490	7.508	73.875	.000

Table 13
Results of Further Difference Test on Interaction (A) X (C)

Contrast Tests [a]							
		Contrast	**Value of Contrast**	**Std. Error**	**t**	**Df**	**Sig. (2-tailed)**
Behavior	Assuming equal variances	1	-2.8500	2.43152	-1.172	152	.243
		2	8.0500	2.43152	3.311	152	.001
		3	2.5000	2.43152	1.028	152	.306
		4	-2.8500	2.43152	-1.172	152	.243
		5	-5.5000	2.43152	-2.262	152	.025
		6	-1.6500	2.43152	-.679	152	.498
		7	.7500	2.43152	.308	152	.758
		8	3.8500	2.43152	1.583	152	.115
		9	6.2500	2.43152	2.570	152	.011
		10	2.4000	2.43152	.987	152	.325
	Not assuming equal variances	1	-2.8500	1.88355	-1.513	36.278	.139
		2	8.0500	2.51404	3.202	23.870	.004
		3	2.5000	2.89400	.864	27.698	.395
		4	-2.8500	2.32501	-1.226	37.937	.228
		5	-5.5000	1.69977	-3.236	30.510	.003
		6	-1.6500	1.94784	-.847	37.282	.402
		7	.7500	2.18014	.344	37.688	.733
		8	3.8500	1.53704	2.505	33.139	.017
		9	6.2500	1.82248	3.429	28.900	.002
		10	2.4000	2.05580	1.167	36.139	.251

a. Contrast 11, 12 cannot be evaluated because the number of contrast coefficients is not equal.

Contrast Tests							
		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
Behavior	Assume equal variances	1	5.4000	2.43152	2.221	152	.028
		2	3.7000	2.43152	1.522	152	.130
		3	.7500	2.43152	.308	152	.758
		4	-1.7000	2.43152	-.699	152	.486
		5	-4.6500	2.43152	-1.912	152	.058
		6	-2.9500	2.43152	-1.213	152	.227
	Does not assume equal variances	1	5.4000	2.64177	2.044	27.882	.050
		2	3.7000	2.85113	1.298	26.502	.206
		3	.7500	2.04949	.366	34.075	.717
		4	-1.7000	3.51186	-.484	37.672	.631
		5	-4.6500	2.89907	-1.604	34.256	.118
		6	-2.9500	3.09105	-.954	32.505	.347

Table 14
Results of further difference test on interaction (B) X (C)

Contrast Tests							
		Contrast	**Value of Contrast**	**Std. Error**	**t**	**df**	**Sig. (2-tailed)**
Behavior	Assuming equal variances	1	7.3500	2.21414	3.320	152	.001
		2	8.5500	2.21414	3.862	152	.000
		3	10.5000	2.21414	4.742	152	.000
		4	1.8500	2.21414	.836	152	.405
		5	-.6500	2.21414	-.294	152	.769
		6	-.5500	2.21414	-.248	152	.804
		7	3.5000	2.21414	1.581	152	.116
		8	.1000	2.21414	.045	152	.964
		9	4.1500	2.21414	1.874	152	.063
		10	4.0500	2.21414	1.829	152	.069
	Not assuming equal variances	1	7.3500	1.52966	4.805	30.831	.000
		2	8.5500	2.47022	3.461	22.789	.002
		3	10.5000	2.37454	4.422	34.135	.000
		4	1.8500	2.35146	.787	36.958	.436
		5	-.6500	1.51410	-.429	30.087	.671
		6	-.5500	1.89858	-.290	37.946	.774
		7	3.5000	2.22776	1.571	34.840	.125
		8	.1000	1.55851	.064	29.416	.949
		9	4.1500	1.94608	2.132	25.381	.043
		10	4.0500	2.25817	1.793	35.482	.081

Contrast Tests							
		Contrast	**Value of Contrast**	**Std. Error**	**t**	**Df**	**Sig. (2-tailed)**
Behavior	Assuming equal variances	1	.5500	2.21414	.248	152	.804
		2	2.6000	2.21414	1.174	152	.242
		3	-2.0000	2.21414	-.903	152	.368
		4	2.0500	2.21414	.926	152	.356
		5	-2.5500	2.21414	-1.152	152	.251
		6	-4.6000	2.21414	-2.078	152	.039
	Not assuming equal variances	1	.5500	2.47979	.222	23.104	.826
		2	2.6000	2.09134	1.243	24.956	.225
		3	-2.0000	1.70479	-1.173	28.358	.250
		4	2.0500	3.05147	.672	36.667	.506
		5	-2.5500	2.80073	-.910	32.453	.369
		6	-4.6000	2.46342	-1.867	35.901	.070

Based on the results of the further difference test analysis of the interaction of two variables, namely Gender (A) and Education Level (C), it can be obtained, first, that males with Junior High School Education Level background shows more behavioral changes than females with the same Education Level background. Second, males with a junior high education level shows more behavioral changes than males with an elementary education level background. Third, males with a higher education level background shows more behavioral changes than males with a junior high education level background. Fourth, females with elementary education level background shows more behavioral changes than females with junior high school education level background. Fifth, females with a higher education level background show more behavioral changes than females with a junior-high level background.

Based on the results of the analysis of further difference tests from the interaction of two variables, namely B and C, it can be obtained, first, that adults with elementary education level background shows more behavioral changes than the elderly with elementary education level background. Second, adults with junior high school education level background show more behavioral changes than the elderly with the same education level background. Third, adults with high school education level background show more behavioral changes than seniors with the same education level background. Fourth, the elderly with higher education level background show more behavioral changes than seniors with high school education level background.

DISCUSSION

Based on the results of simultaneous analysis on the dependent variable Attitude and Behavior, the use of the mother tongue in conveying health protocol messages does significantly influence changes in

health attitudes and behaviors. However, partially, the magnitude of the influence of the independent variable on the dependent variable is only dominated by gender and age factors, while the age factor only dominates the dependent variable behavior. The education level factor does not significantly affect changes in attitudes and behaviors. Meanwhile, other studies (i.e. Delaney et al., 2021; De Melo Ghisi et al., 2020; Feng et al., 2021; Pothisiri et al., 2021) reported that it is recommended that education factors including individual education levels be taken into consideration to change their health behaviors. In the context of this research, in contrast, the individuals' education level factor can only be considered if it refers to the interaction relationships with other factors such as gender (men or women), age (adulthood or old age), education levels (basic education, junior secondary education, senior secondary education, and higher education). In other words, individuals' gender, age, and education level factors cannot be considered the absolute factors that make changes in attitudes and behaviors when delivering health protocol messages by using their mother tongue audiovisually. This is confirmed by the results of descriptive statistical analysis in this study showing that the respondents attitudes and behaviors do not vary regarding the variation of gender, age, and education levels.

Further, lack of variation demands for further test analysis to see interactions of the gender, age, and education level variables. The results of the further difference test analysis show that there is a significant difference between males and females in attitude changes. The attitude changes of males are more obvious than those of females. As for the age factor, the attitude changes of adults are more obvious than those of the elderly. On the other hand, concerning behavioral changes, adults show more behavioral changes than older people. Thus, it can be understood that the age factor, especially the adult age (20-60 years) can be the main factor that makes changes in health attitudes and behaviors when delivering health protocol messages by using the mother tongue audiovisually because the results of the further difference test of the interaction between Gender and Age factors show that adult males and the elderly people indicate significant behavioral changes compared with adult females. Meanwhile, the results of the analysis on the dependent Attitude variable indicate that the interaction can only be seen in the Gender and Education level factor. This strengthens the results of research conducted by Li et al. (2018), indicating that educational interventions do not much influence changes in health behavior compared to changes in knowledge (Attitudes).

Attitudes and behavior cannot be separated in individual social processes, but both can work independently. It means that individuals' behavior is strongly influenced by their attitude, namely, their level of knowledge, perceptions, and beliefs, and yet sometimes individuals' behaviors are observed substantively through the form of knowledge constructed in their cognition. On the other hand, behavior is an observable real action that strengthens a person's attitude. That is, the stronger the basis of individuals' attitude, the stronger the influence on behavior. The theory of planned behavior shows three (3) main components, namely, attitudes, subjective norms, and perceived behavioral control (Ajzen, 2005; Arnold et al., 2005). These three components together form an intention or initiation of behaviors. This theory serves as a bridge between the individual's beliefs and actions. The predisposition to a belief can produces behaviors toward what is believed. These findings do not really support McPhee and Cushman's (1980) argument indicating that predisposition to action and affective evaluation are the same. However, effective predisposition and evaluation appear to be different in the forms of behavior shown. That is, certain behavior can be a tendency of a person's attitude and can also be a function of affective evaluation. In this case, the tendency to behave is not an affective evaluation of a person because an affective evaluation refers more to the preference between two or more attitude choices while the tendency does not refer to the intended preference. However, behavioral variables are highly expected in social life because behavior is a variable that can be observed and has a larger impact than attitudes.

CONCLUSION

Gender factors, age, and education levels cannot be considered determining variables for the changes in individuals' attitudes and behaviors toward health in delivering health protocol messages by using the mother tongue audiovisually. Next, the education level factor can only be considered if it refers to the interaction relationships between levels of variables such as male, female, adult age, old age, basic education, junior secondary education, senior secondary education, and higher education. On the other hand, the age factor, especially the adults aged between 20-60 years, can be the main foctors, which realize changes in individuals' attitudes and behaviors toward health when delivering health protocol messages by using the mother tongue audiovisually. The study suggests that other models of persuasion should be considered to accelerate the realization of changes in individuals' attitudes and behaviors when accepting messages.

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