

## Community Consumption of Traditional Medicine and Health Supplements During the Coronavirus Disease-2019 Pandemic

Hilyatul Fadliyah<sup>1\*)</sup>, Atik Nurwahyuni<sup>2</sup>, Faradiba<sup>3</sup>

<sup>1,2</sup>Department of Health Policy and Administration, Faculty of Public Health  
Universitas Indonesia, Depok 16424, Indonesia

<sup>3</sup>Graduate Student of Pharmacy Management, Faculty of Pharmacy, Universitas Gadjah  
Mada, Yogyakarta 16426, Indonesia

\*Corresponding author: hilyatul.fadliyah81@ui.ac.id

### Abstract

Coronavirus disease-2019 (COVID-19) encourages the community to prioritize basic and personal health needs. This study aimed to explore the consumer behaviour of traditional medicine and health supplements during the COVID-19 pandemic in Indonesia using the Consumer Decision Model approach. A quick online cross-sectional survey involving 215 respondents was carried out from December 23, 2020, until January 2, 2021. This study revealed that the majority of respondents consume the products as forced by the pandemic situation, and their use has increased than before the pandemic. The primary reason for consuming the product is to increase their immunity during a pandemic, and they felt more healthy after consuming it. Social media and television are the primary sources of product information. Furthermore, we found that the majority of respondents were branded product consumers. Respondents were more likely to have good behaviour based on knowledge of the products' legality, dosage, indication, instructions for use, and expiration date. This study sets appropriate consumer behaviour and performs the statistical tests only for branded product consumers. It is concluded that consumer behaviour in this study is related to product advertisement exposure and acceptance, environmental influence, and individual difference.

Keywords: consumer behaviour, consumer decision model, coronavirus disease-2019, health supplements, traditional medicine

### Abstrak

*Coronavirus disease-2019 (COVID-19)* mendorong masyarakat untuk memprioritaskan kebutuhan kesehatan dasar dan pribadi. Penelitian ini bertujuan untuk mengetahui perilaku konsumen obat tradisional dan suplemen kesehatan pada saat pandemi COVID-19 di Indonesia dengan menggunakan pendekatan *Consumer Decision Model*. Dari tanggal 23 Desember 2020 hingga 2 Januari 2021, dilakukan survei cross-sectional online cepat yang melibatkan 215 responden. Sebagian besar responden menegaskan bahwa mereka mengonsumsi produk karena terdorong oleh situasi pandemi dan penggunaannya meningkat dibandingkan sebelum pandemi. Alasan utama mengonsumsi produk ini adalah untuk meningkatkan kekebalan mereka saat terjadi pandemi dan mereka merasa lebih sehat setelah mengkonsumsinya. Media sosial dan televisi adalah sumber utama informasi produk. Lebih lanjut, studi ini menemukan bahwa mayoritas responden adalah konsumen produk bermerek, dan responden memiliki perilaku yang baik berdasarkan pengetahuan tentang legalitas produk, dosis, indikasi, petunjuk penggunaan, dan tanggal kedaluwarsa. Penelitian ini menetapkan kategori perilaku konsumen yang sesuai dan melakukan uji statistik hanya untuk konsumen produk bermerek. Disimpulkan bahwa perilaku konsumen dalam penelitian ini berkaitan dengan aspek keterpaparan dan penerimaan iklan produk, pengaruh lingkungan, dan perbedaan individu.

Kata kunci: *coronavirus disease-2019*, model keputusan konsumen, obat tradisional, perilaku konsumen, suplemen kesehatan

## Introduction

After Coronavirus disease 2019 (COVID-19) was declared a Public Health Emergency of International Concern (PHEIC) in January 2021, over 90 million people worldwide had confirmed positive and two million deaths reported (WHO, 2021). Due to the high prevalence and mortality rate, implementing personal and community health behaviour is still crucial to prevent virus transmission. Therefore, WHO has recommended a variety of behavioural measures to reduce the spread of COVID-19, such as hand hygiene, social distancing, using masks, and self-quarantine (WHO, 2020), and many governments emphasized its application to society (Margraf, Brailovskaia & Schneider, 2020).

Further, the prolonged COVID-19 outbreak has forcefully changed people's behaviour and lifestyles. People are more likely to spend time on social media as a result of isolation and social distancing, watching the news on television more frequently, and spending quality time with family (Nabity-Grover, Cheung, & Thatcher, 2020; Dixit, Marthoenis, Arafat, Sharma & Kar, 2020; Every-Palmer et al., 2020). People's purchasing behaviour is changing as a result of health and safety concerns, imposed restrictions, financial conditions, and the surrounding environment (Akter, Ashrafi & Waligo, 2021). Accenture (2020) and Loxton et al. (2020) showed that nowadays, the consumer becomes mindful of the value of health, thus putting first the basic and personal health needs, such as masks, hand sanitizers, and disinfectants. In contrast, the non-essential category has shrunk.

Following the announcement of the COVID-19 outbreak, the National Food and Drug Administration (NFDA) Indonesian confirmed an increase in vitamin consumption within society from 35.1% to 58.6% and dramatic increase in online transactions (Lidyana, 2020). Around 75% of Indonesian undergraduate students said they take vitamins or health supplements to boost their immune systems (Saefi et al., 2020). Strengthening the immune system is crucial, can be improved by eating a nutritious and balanced diet and, if necessary, taking health supplements and traditional medicines (Mukti, 2020; Izazi & Kusuma, 2020). In line with Maulana (2020) and Sulaeman (2020) that changes in consumer behaviour due to insufficient supply and demand, health supplements from various brands are out of stock in minimarkets, pharmacies, drug stores, and other retail stores that have been reported during COVID-19, especially vitamin C. The increased consumption of these products during a pandemic demonstrates that society is becoming more aware of the importance of individual efforts to combat COVID-19.

Findings based on previous research conducted by NFDA and Ministry of Health (MOH) about knowledge, attitudes, and practice of communities on selecting safe medicines reveals that of the 1271 respondents. The majority of considerations in choosing medicines, supplements, and traditional medicines are the efficacy, followed by recommendations from friends. As many as 27% of respondents take traditional medicine because they think it is safer and has no side effects. In addition, only 11% of the behavioural aspects of reading packaging labels when buying, and 14% pay attention to the rules of traditional medicines and supplements. Only 11% of respondents pay attention to indications when buying supplements, and knowledge about traditional medicine is still very low (Siahaan, Usia, Pujiati, Tarigan, & Murhandini, 2017).

Based on the phenomenon mentioned above as well as research in Indonesia is limited to a) survey of COVID-19-related knowledge and attitude among Indonesian

undergraduate students (Saefi et al., 2020), b) the investigation of the relationship between knowledge and behaviour in the use of health supplements during the Pandemic in Surabaya (Mukti, 2020) and c) community knowledge to prepare traditional medicine from ginger and galangal to boost immunity during a pandemic (Izazi & Kusuma, 2020). This research used Engel-Blackwell and Miniard's Consumer Decision Model (Viksne, Salkovska, Gaitniece, & Puke, 2016) to identify factors that influence consumer behaviour of health supplements and traditional medicine. Next, determine the appropriateness of these products' consumption behaviour, especially for a branded product, in Indonesians during the pandemic, which has not been found in previous studies.

This research is essential to answer to provide an idea for regulators, the government, the pharmaceutical industry, health workers, whether the behaviour of supplement consumption is correct during the pandemic and what influences them to buy products. This research can support efforts to increase public knowledge about the consumption of traditional medicines and health supplements in a balanced manner by socializing the application of health protocols. To realize the independence of herbal medicines by the pharmaceutical industry. Next, paying attention to the supply chain of this type of product. That should be noted that health supplements, in particular, have significant benefits, particularly during a pandemic, but if each consumer's consumption increases without regard for how to use it wisely, the threat of toxic, side effects or unexpected effects will become a reality (Hamishehkar, Ranjdoost, Asgharian, Mahmoodpoor & Sanaie, 2016; Ronis, Pedersen & Watt, 2018).

## Literature Review

### Exposure and Acceptance of Product Advertisements

Advertising is one of the mass-communication tools available to marketers. According to Kotler and Keller (2015), advertising is any paid form of nonpersonal presentation and promotion of ideas, goods, or services by a specific sponsor. Advertising may be cost-effective to create essential awareness of the product among potential customers and build knowledge. Even it is more challenging in the media environment, and good ads can pay off. Therefore, it is crucial to building a strategy in creating advertisements. Ganesha (2018) emphasized that advertising is intended to reach and persuade the customer to buy the product, ideas, or service offered.

According to Kumar (2013), the role of advertising in consumer decision making change a consumer's opinion of a product as well as their desire to continue paying attention to it; product advertisements easily persuade consumers, and advertising is regarded as a powerful mass media to convey message objectives to target consumers. Advertising exposure will direct consumers to recognition and memory about advertisements and brands, then direct consumer attitudes by influencing their interest in the product, evaluating it for purchase, and ultimately influencing their behaviour to buy the advertised product. Shaouf (2018) found that exposure to a well-designed advertisement can influence several cognitive and emotional responses, especially online forms. Examples are attention to advertisements, motivations to process them, depth of processing, pleasure, arousal, and online purchase intention.

## **Environmental Influences and Individual Differences**

The environmental influences include family, work environments, and situations. In addition, factors that influence consumer behaviour individual differences involve consumer characteristics, costs of health needs, knowledge related to COVID-19 and the products (traditional medicine products and health supplements), religion, and individual values related to perceptions of halal products.

Family is the most influential group for the consumer because the members can strongly influence consumer behaviour (Gajjar, 2013). The results study by Roberti (2014) indicates a consumption pattern in line with the things that students learn in their families. The patterns taught by their mothers include selecting the type of outlet and the type of product or brand purchased whose purpose is to optimize the price and quality of the product accordingly with family values and family lifestyle. The existence of communication within the family, the ability of the family to adapt to changing situations, and emotional bonding between family members so that mutual attachment is built are three sociological variables that might help explain how families make consumption decisions (Chandrasekar & Vinay Raj, 2013).

Another factor that influences the purchase decision-making process is knowledge, when selecting products to purchase or reject (Rossanty & Nasution, 2018). Linn and Zen (2005), as cited in Rossanty and Nasution (2018), stated that the greater the level of product knowledge, the lower the possibility of product evaluation failure. Regarding halal perception, Nurhayati and Hendar (2019) found in their study that halal product awareness was a true partial mediator in the relationship between halal product knowledge with halal product intention.

## **The Appropriateness of Consumer Behavior**

The appropriateness of drug use based on the definition determined by (Ministry of Health Republic of Indonesia, 2011) is the same as the rational use of drugs. Rational drug use includes the following aspects; right diagnosis, right indication, the right type of drug, right dose, right rule of use and duration of use, right information (side effects, how to use), and right patient condition. The use of drugs is irrational if the possible negative impact received by the patient is greater than the benefits. Negative impacts here can be clinical impacts (e.g., side effects and resistance), or economic impacts (unaffordable costs). Irrational use includes the use of drugs that are not needed, not according to indications, not according to the rules, not scientifically proven, and the use of unsafe drugs or have greater toxicity.

According to the previous study by Mukti (2020) about the relationship between knowledge and behaviour indicators, the appropriateness of health supplement use behaviour was assessed from dosage and side effects. The results of the dose indicator illustrate that the respondent's behaviour related to the rules of use, the number of drugs, and the duration of use are classified as appropriate. This is because most of the respondents bought at a pharmacy. On the side effect indicator, it can be concluded that the respondent's behaviour regarding dosage form, colour, and the expiration date is classified as appropriate.

This study adapted The Consumer Decision Model's theoretical approach by Engel-Blackwell-Miniard (1968) (Figure 1). This approach is chosen due to it comprehensively describes the various components of consumer decision making and its interactions. The

hypothesis of this study is respondent's behaviour in consuming health supplements and traditional medicine related or can be influenced by variables as follow:

- Input-information processing (exposure and acceptance of product advertisement);
- Environmental influence (family, work environment and pandemic situation);
- Individual difference (demographic characteristics, motivation, knowledge, and values or perception about the halal label);
- Consumer behaviour (consumption cost for buying products, frequency of purchasing, the volume of purchasing, product type consumed, place of purchasing, the reason for purchasing, and perception of effect after consuming).

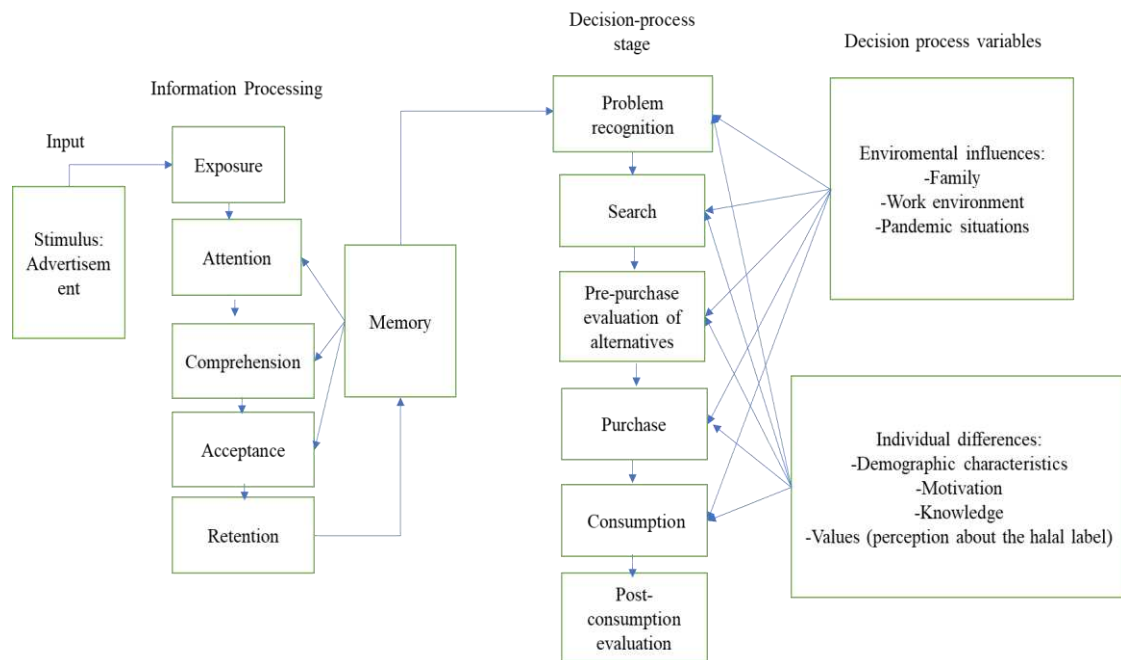


Figure 1 Theoretical Framework (Adapted and modified from Consumer Decision Model's Engel-Blackwell-Miniard)

## Methods

### Participants

This study utilized a cross-sectional design with an online survey form distributed from December 23, 2020, to January 2, 2021. The selection of respondents was carried out based on a convenience sampling technique by inviting the public via social media platforms. Before beginning the survey, the information related to the study were provided, such as study aim, benefit, the time required for filling the questionnaire, confidentiality of respondents' data, and the right to self-withdrawal from the study. Respondents declared their consent for voluntary participation prior to the data collection.

Respondents in this study had to be at least 18 years old, live in Indonesia, be willing to participate, and use traditional medicine, health supplements, or both during the COVID-19 pandemic. Pregnant or breastfeeding mothers were not qualified to participate in this survey. In total, 215 respondents were involved and met the criteria in this study.

## Measurement

This research develop questionnaire by adapting some variables from the Consumer Decision Model described in literature review (Viksne et al., 2016). Those variables spread in different parts so that the order of the questions was not confusing. To ensure the questionnaire's clarity, adequacy, and appropriateness, a preliminary test that involved 31 respondents were carried out, and from the test, some feedback was also obtained to improve the questionnaire.

The established questionnaire contained 38 questions that were divided into five main parts formed in several types of questions: multiple-choice, check box, and open-ended question. The first part asked respondents' willingness to participate (1 question), and only those who were willing could proceed to the next questions. The second part (9 questions) explored the information of socio-demographic characteristics of respondents. The third part (18 questions) focused on the respondents' consumption behaviour (traditional medicine, health supplements, or both), including their perception of the product's halal status. Two questions in this part were designed specifically for respondents as branded products consumers, and we let them choose "never"/"seldom" / "sometimes" / "often" / or "always" for each statement provided. The option of "often" and "always" were categorized as appropriate behaviour. The fourth part (6 questions) then asked whether they used the products because of advertisements, family, work environment, or a pandemic situation. The final part (4 questions) examined respondents knowledge of the products and COVID-19. Most of the data collected were categorical data with ordinal scale measures.

## Analysis

Quantitative data analysis was conducted using SPSS version 23, and the result was presented as frequencies. The Chi-Square tests were performed with a significant level of 95% ( $p < 0.05$ ) to determine the difference in proportion between branded product consumer behaviour and other variables. Otherwise, the qualitative data, including responses to the purchase, the reason for consuming, and the effect after consuming, were analyzed using Microsoft Excel and Dcipher Analytics.

## Findings

### Individual Difference

The majority of respondents in this study were living in Java (88.4%), Muslim (89.3%), female (75.8%), and have a university degree (93%). Other characteristics that were investigated were shown in Table 1, and the result in the study received a large number of respondents who did not work in the health field.

Table 1 Respondents' characteristics

Characteristics	Classification	Frequency	
		n	%
Age (year)	18 – 24	46	21.4
	25 – 39	141	65.6
	40 – 59	26	12.1
	60 and over	2	9
Employment status	Student	43	20
	Health field career	51	23.7
	Non-health field career	104	48.4
	Unemployment	17	7.9
Income	Less than minimum regional income	44	20.5
	Minimum regional income	86	40
	2 to 3 times of minimum regional income	64	29.8
	More than three times of minimum regional income	21	9.8
Perception of Halal label	Agree	151	84.4
	Disagree	28	15.6

Respondent's knowledge of the products and COVID-19 was another aspect of the individual difference factor (Table 2). We assessed it by setting four indicators, each represented by a multiple-choice question with one right answer. Respondents who correctly answer were categorized as 'good'. Most respondents have good knowledge of the products and COVID-19.

Table 2 Respondents' knowledge

No.	Knowledge	Frequency (%)			
		Good		Bad	
		n	%	n	%
1	Capable of differentiating between traditional medicine and health supplements	104	48.4	111	51.6
2	Recognizing that both traditional medicine and health supplements may have side effects	165	76.7	50	23.3
3	Recognizing that a person's immune system determines the level of ease of infection with COVID-19	208	96.7	7	3.3
4	Recognizing that taking traditional medicine and/or health supplements cannot treat COVID-19	167	77.7	48	22.3
<b>In general</b>					
	Level of knowledge*	160	74.4	55	25.6

Note. (\*) good-knowledge level: minimum of three indicators were categorized as "good"

## Exposure and Acceptance of Product Advertisement

The survey results revealed that the main source of information about products was social media, and television coming in second. Nonetheless, a small number of respondents still obtained information from the products' banners, brochures, and leaflets. In terms of information acceptance, most respondents were either neutral (n=144, 67%) or distrustful (n=7, 3.2%) about the truth of the information from the advertisement. They were also not influenced to purchase products after seeing the advertisement (n=158, 73.5%).

## Environmental Influences

As many as 174 respondents (80.9%) agreed that their families recommended consuming the product. Following that, 185 respondents (86%) stated that their coworkers were also the product's consumers. In addition, 191 respondents (88.8%) stated that the pandemic situation had influenced their decision to consume the products.

## Consumer Behavior concerning Traditional Medicine and Health supplements during COVID-19

According to survey results, 160 respondents (74.4%) agreed that product use had increased compared to before the pandemic. This condition is consistent with many compelled respondents to consume products as a result of the pandemic. Besides the use intensity, Table 3 shows additional aspects of the respondent's behaviour.

The distribution answer of open-ended questions regarding consumer behaviour, including where they purchase, their reasons for consuming the product, and how they felt after consuming, were displayed as bubbles (Figure 2). The bubble shape was created by the Dchipr Analytic website's word similarity technique, which used the Cosine measure. The larger the bubble indicated, the more respondents who chose it. This study only labelled the most important bubbles with letters to highlight them.

Table 3 Consumer behaviour of respondents during COVID-19

Behaviour	Classification	Frequency	
		n	%
Cost of consumption for traditional medicine and health supplements (in Rupiahs)	Low (0 – 50.000)	63	29.3
	Moderate (50.000 – 300.000)	136	63.3
	High (> 300.000)	16	7.4
Purchase frequency per month	Low (0 – 2 times)	157	73
	Moderate (3 – 5 times)	41	19.1
	High (>5 times)	17	7.9
The quantity of purchases (number of brands per purchase)	Low (0 – 2 brands)	180	83.7
	Moderate (3 – 5 brands)	33	15.3
	High (>5 brands)	2	9
Intensity of application	Every day	73	34
	2 – 6 times/week	46	21.4
	If necessary	85	39.5
	Based on instruction on the packaging	11	5.1



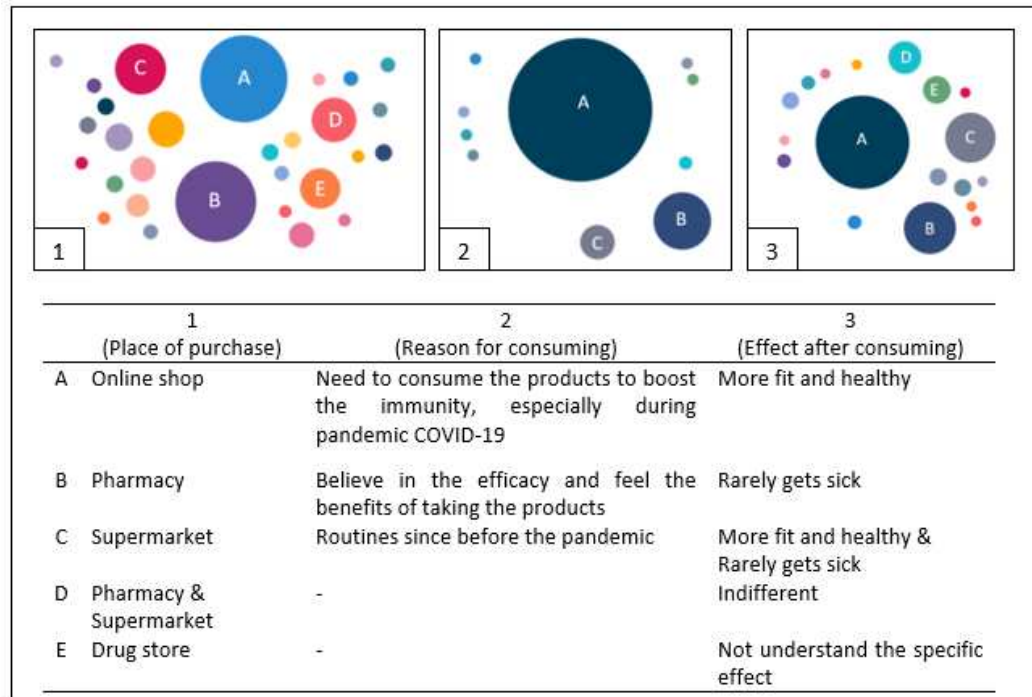


Figure 2 The distribution of responses of the place of purchase (box 1), the reason for consuming (box 2), and the effect after consuming (box 3). The meaning of each letter in every box existed in the table below the bubble box.

In relation to the purchasing location depicted in the preceding figure, the majority of respondents prefer to buy the products from online shops, either official marketplaces or not, and followed by the pharmacy. The primary reason for using the product is to maintain immunity during a pandemic. Furthermore, most of them feel fitter and healthier after consuming the products.

We asked respondents an open question about the type of products they used. Following that, we divided their responses into three categories: a) traditional medicine, b) health supplements, and c) others, according to the National Food and Drug Administration's registration record available at the official website of NFDA. Products that were not registered as traditional medicine or health supplements were classified as 'others,' which included health drinks or herbal concoctions. The Venn diagram below displayed the number of respondents for each product type used (Figure 3). According to the diagram, more respondents used only health supplement product types (n=77, 35.8).

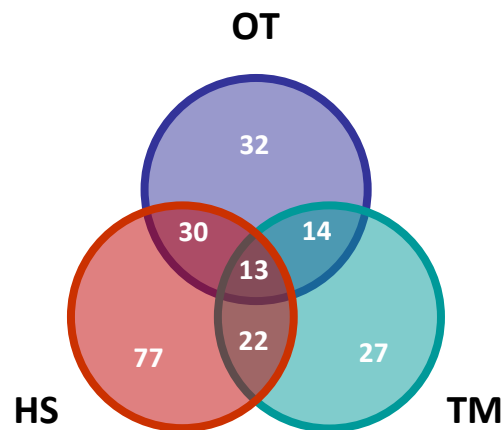


Figure 3 The distribution of responses is based on the product type used. HS stands for health supplements, TM stands for traditional medicine, and OT stands for other

### Branded Product Consumer Behavior

Across all respondents (n=215), about 179 used the branded products. The behaviour toward branded products then was classified into two categories that are, "appropriate" and "inappropriate" behaviour (Table 4). This study found that the respondent's consumption of branded health supplements and traditional medicine is generally appropriate. The Chi-Square test revealed that age differences (P=0.733), domicile (P=0.070), an education level (P=0.564), income (P=0.619), and work background (P=0.095) have no effect on respondent behaviour's appropriateness towards the use of the branded product (P< $\alpha$ ).

Table 4 Chi-Square analysis of branded product consumer behaviour and other variables

Aspect	Variable	Behavior				P-value (Significance)
		Appropriate		Inappropriate		
		n	%	n	%	
Individual differences	Gender					0.259
	Male	24	58.5	17	41.5	
	Female	96	69.6	42	30.4	
	Age					0.733
	18 – 24	26	66.7	13	33.3	
	25 – 39	79	65.8	41	34.2	
	40 – 59	13	72.2	5	27.8	
	>= 60	2	100	0	0	
	Domicile					0.070
	Java island	104	64.6	57	35.4	
	Other island	16	88.9	2	11.1	
	Education level					0.564
	Secondary level (senior high school)	9	69.2	4	30.8	
University degree	111	66.9	55	33.1		
Employment status						

Table 5 Chi-Square analysis of branded product consumer behaviour and other variables  
(Continued..)

Aspect	Variable	Behavior				P-value (Significance)
		Appropriate		Inappropriate		
		n	%	n	%	
Individual differences	Student	23	63.9	13	13	0.095
	Healthcare-related career	36	80	9	20	
	Non-healthcare-related career	55	80	9	20	
	Unemployed	6	46.2	7	53.8	
	Income					0.619
	< regional minimum income	25	65.8	13	34.2	
	= regional minimum income	41	62.1	25	37.9	
	2 -3 times of regional minimum income	41	70.7	17	29.3	
	> 3 times of regional minimum income	13	76.5	4	23.5	
	Religion					0.437
	Islam	109	67.7	52	32.3	
	Catholic	5	83.3	1	16.7	
	Protestant	3	42.9	4	57.1	
	Hinduism	3	60	2	40	
Perception of Halal label					0.03*	
Agree	102	72.9	38	27.1		
Disagree	18	46.2	21	53.8		
Knowledge (in general)					0.614	
Good	90	65.7	47	34.3		
Bad	30	71.4	12	28.6		
Exposure and acceptance of product advertisement	Interest in purchasing due to advertisement					0.202
	Yes, influenced	39	75	13	25	
	No / Indifferent	81	63.8	46	36.2	
	Trust in the correctness of advertising information					0.001*
Yes, believe	48	85.7	8	14.3		
No / Indifferent	72	58.5	51	41.5		
Environmental influences	Work environment					0.116
	Yes, they use	109	69.4	48	30.6	
	No, they do not use	11	50	11	50	
	Family					0.396
	Yes, they use	96	65.2	51	34.7	
	No, they do not use	24	75	8	25	
Pandemic situation					0.059	
Yes, influenced	112	69.7	49	30.4		
No, influenced	8	44.4	10	55.6		

Note. \*significance ( $\alpha < 0.05$ ).

In general, respondents in each category of variables were more likely to have appropriate behaviour in consuming the branded products. Moreover, female respondents' consuming branded products was more appropriate even though it was not significant statistically ( $P=0.259$ ).

Relating to knowledge, all groups, good and bad, exhibit appropriate behaviour ( $P=0.614$ ). There was a significant relationship between trust in the correctness of advertisements and consumer behaviour for branded products ( $P=0.001, <\alpha$ ). The perception of the halal label also significantly influences respondents' behaviour to consume those branded products ( $P=0.03$ ), even though there is no relationship between religion and branded product consumer behaviour ( $P=0.437$ ). Respondents who acknowledged that their families and coworkers consume the products engage in appropriate consumer behaviour, and the pandemic situation tends to affect respondents' consumption of branded products ( $P=0.059$ ).

## Discussion

According to the Engel-Blackwell-Miniard theory, many factors influence consumer behaviour (1968). As previously mentioned, this study was carried out to explore some factors, which the first is individual difference. Knowledge is an important aspect of individual difference that motivates people to engage in preventive behaviour. Despite the fact that most respondents came from non-health professions, respondents' knowledge of products and COVID-19 was rated as good in general. It is most likely because people are becoming more aware of the importance of finding COVID-19 information. This is in line with the fact that about 80% of internet users have searched for health information online, especially in the internet of things era (Rizvi et al., 2019). This phenomenon lends credence to the notion that health supplement use is self-initiated. Also, it indicates that consuming health supplements becomes a necessity for the community. It is in line with the study of Afina and Retnaningsih (2018), as the most supportive dimensions, necessity form attitudes toward functional food consumption. The necessity arises from the perceived susceptibility to disease, which is in line with a previous study conducted by Chung, Stoel, Xu & Ren (2012) that recognized was significantly higher in supplement users than non-users.

Respondents learned about products from advertisements displayed in various media. Marketers use social media to promote their products because people spend the majority of their time on it. (Nielsen Company Indonesia, 2020a). Furthermore, Nielsen Television Audience Measurement (TAM) monitoring in 11 cities reveals that average TV viewing has increased since March 2020, as has the frequency of advertising for vitamin and health supplement products on digital media and TV. Nielsen Company Indonesia (Nielsen Company Indonesia, 2020b). Advertisement that is shown more frequently will increase audience awareness regarding the supplement's benefits, which indirectly reminds them of their insufficient daily needs, thus encouraging them to buy more (Chung et al., 2012).

Concerning the truth of the product's advertisement, those who had a neutral perception could be because the general public believes that advertising is merely a medium for companies to promote themselves to attract customers. Another reason for this assumption is that some consumers have reported receiving products that are not as good as appearing in advertisements. However, previous research indicates that

consumers neither trust nor distrust advertising and are relatively neutral (Sæmundsson, 2012).

Specific environments and situations can influence the decision-making process. There is the power of "Circles of Social Influence," which means that an individual's actions can affect families, social networks, workplace organizations, and communities. (Liu et al., 2020). In this case, most respondents admitted that their family and coworkers use health supplements and traditional medicine. Therefore, we assumed it had an impact on respondents' consumption of them. The pandemic also encouraged the respondents to take the products. Regardless of the fact that most respondents were aware that the products could not directly treat diseases, consumers saw them as an inexpensive way to maintain health (Table 1). This is supported by research in China that consumers are very affected by social pressure. It is reported that 37% of people use supplements because of recommendations from relatives and friends (Chung et al., 2012).

Although consumption increased compared to before the pandemic, Most respondents admitted that their purchasing frequency and quantity were in the low range. It is reasonable to assume that individuals who previously purchased in small quantities and infrequently are now purchasing more frequently and in a wider range of product variants. A corresponding increase in supply did not meet this increase in demand. During the pandemic, several production constraints include imported raw materials, which cause longer lead times due to logistic flight restrictions and lockdowns and restrictions on large-scale activities implemented in industrial city centres (Kardoko, 2020). Therefore, due to an imbalanced supply and demand, branded products face a stock void.

The NFDA justifies the increase in health supplement shopping online, consistent with the study's findings. Unfortunately, there is no guarantee that online marketplace sellers can be trusted. Consumers may have received counterfeit drugs or subpar product quality. As a result, people are encouraged to purchase the products at pharmacies or through the company's official digital platforms to ensure that the products received and distributed are genuine and of high quality.

In terms of the products they use, health supplements are the most frequently purchased and consumed compared to traditional medicine and other categories. It is due to the relationship between ad exposure intensity, which increases brand equity by stimulating viewers' desire to buy products, and ad market segments. Branded health supplement advertisements outnumber traditional medicine advertisements on television and other digital media platforms. On the other hand, traditional medicine has become a part of the Indonesian people's cultural heritage. It is more practical, less expensive, and more useful from generation to generation (Jennifer & Saptutyingsih, 2015).

In classifying appropriate and inappropriate behaviour of branded product consumption, we refer to the NFDA's social campaign "Let's Check 'KLIK' Before Buying Medicine". The campaign's goal is to raise public awareness about the dangers of dangerous drugs and foods that do not meet the standards. According to the Bureau of Public Relations and Leadership Strategic Support of NFDA (2019), "Check KLIK" means to check the packaging (K for "Kemasan"); the label (L for "Label"), which includes indications, instructions for use, warnings, and contraindications; the marketing authorization number (I for "Izin edar"); and the expiration date (K for "Kedaluwarsa").

The branded product respondent's behaviour is appropriate in general. It's possible that they looked up information about products and COVID-19 before buying so they could understand the purpose and benefits of these products, and thus the majority of them were aware of the product indication. Furthermore, suppose they look for medical

advice from a health professional, such as a pharmacist. In that case, it stands to reason that they are familiar with dosage, usage guidelines, and product expiration dates. Besides, most respondents admitted to consuming the products "if necessary". Health supplements and traditional medicine, according to experts, should be consumed when the body's condition is vulnerable or if the daily nutritional conditions are insufficient (Tardy, Pouteau, Marquez, Yilmaz & Scholey, 2020).

The majority of respondents in each category acted appropriately in consuming branded products. It can be assumed that the government's public awareness campaign for 'Check KLIK' and COVID-19 has been quite successful in reaching all societal levels, including career categories in the health and non-health field. A study hypothesized that women are more concerned with details and take pride in their ability to get the best products at the best prices (Lakshmi, Niharika & Lahari, 2017). It means that women tend to apply the 'Check KLIK' campaign. On the other hand, Good or bad knowledge groups exhibit appropriate behaviour. This case demonstrated that the knowledge indicator that we devised has no relationship with behaviour.

The fact that advertisements are quite informative and convincing may explain why there is a significant relationship between trust in advertisements' correctness and branded product consumer behaviour. Before being broadcasted, the NFDA reviewed the advertisements for health supplements and traditional medicine for compliance with the Ministry of Health Republic of Indonesia (1994) and the National Food and Drug Agency (2014). Considering ads' content is important since product information sources significantly affect behaviour as a smart consumer (Setianingrum & Yuliati, 2017). Another aspect that has significantly influenced the respondents' consumption behaviour is the perception of the product's halal. Respondents who pay attention to the halal label on products have appropriate consumer behaviour. Aside from being a requirement for Muslims, currently, halal certification is mandatory in Indonesia.

Respondents who use the products with family and coworkers exhibit appropriate consumer behaviour in consuming branded products. It could be because people prioritize each other's health in their family and workplace. Furthermore, those who stated that the pandemic situation encouraged them to use the products demonstrated better consumer behaviour appropriateness than those who stated that it did not affect them. This is because a pandemic raises public awareness, causing people to be more cautious and aware of their health behaviours.

This study has two major limitations that could be improved in future study: study design and duration of data collection. The cross-sectional study design is actually less able to compare respondents' behaviour in consuming the products before and after a pandemic. Therefore in this study, we focused on the pandemic situation only. Furthermore, because this study was conducted relatively short to collect responses, the sample size was small. Regardless, this study is a good starting point for depicting consumer behaviour of branded or non-branded traditional medicines and health supplements, promoting authorization to preserve and develop policy implementation. For example, this can be done through the Cek Klik campaign and the policy of self-sufficiency in the production of medicinal raw materials.

## Conclusion and Recommendation

### Conclusion

The behaviour of respondents in consuming health supplements and traditional medicine during the COVID-19 pandemic was investigated in this study that can be seen from some aspects as follows. First, most respondents make two purchases within a month and spent between Rp 50.000 and Rp 300.000 to buy the product. Second, most of them buy no more than two brands of products in a single transaction. Third, 34% of respondents said they use the product daily. Fourth, when compared to traditional medicine or both, more respondents used health supplement products only. Fifth, in the current situation, online markets are the preferred place to make a purchase. Sixth, the majority of respondents confirmed that they consume the products to boost their immunity during a pandemic. Seventh, the most noticeable effect of using the product is feeling fitter and healthier.

Furthermore, this study revealed other related aspects, such as product advertisement exposure and acceptance; environmental influence; and individual differences that can encourage consumer behaviour. Most of them are exposed to product advertisements on social media and on television. Those who consume branded products, in particular, have a significant relationship between the accuracy of the information in advertisements and the perception of halal labels.

### Recommendation

The "Check KLIK" campaign has had an impact on society. However, this requires encouragement to buy products that have a good reputation from the competent authorities so that counterfeit drugs or medication errors do not harm the public. The emergence of the current pandemic situation, the need for the pharmaceutical industry or other product manufacturers to consider increasing production capacity. This is due to the continuous increase in product consumption. In order to capture more comprehensively the influence of the COVID-19 pandemic on the consumer behaviour of health supplements and traditional medicine, we suggest using other study designs such as cohort studies. Although the time required is indeed longer. Other than that, we recommend that a better questionnaire be developed, particularly for describing knowledge indicators.

## References

- Accenture. (2020). How COVID-19 will permanently change consumer behaviour, fast-changing consumer behaviors influence the future of the CPG industry. April 2020. Retrieved from [https://www.accenture.com/\\_acnmedia/PDF-123/Accenture-COVID19-Pulse-Survey-Research-PoV.pdf](https://www.accenture.com/_acnmedia/PDF-123/Accenture-COVID19-Pulse-Survey-Research-PoV.pdf)
- Afina, S., & Retnaningsih, R. (2018). The influence of students' knowledge and attitude toward functional foods consumption behavior. *Journal of Consumer Sciences*, 3(1), 1-14. Doi: <https://doi.org/10.29244/jcs.3.1.1-14>
- Akter, S., Ashrafi, T., & Waligo, V. (2021). Changes in consumer purchasing behavior due to COVID- 19 pandemic. *Journal of Marketing and Consumer Research*, 3 (77), 33–46. Doi: <https://doi.org/10.7176/jmcr/77-04>
- Bureau of Public Relations and Leadership Strategic Support of NFDA. (2019, September 8). *Safe shopping with CHECK KLIK*. Retrieved from <https://www.pom.go.id/new/view/more/berita/16823/Belanja-Aman-dengan-CEK-KLIK.html>
- Chandrasekar, K. S., & Vinay Raj, R. (2013). Family and consumer behaviour. *International Journal of Management and Social Sciences Research*, 2(7), 17–20. ISSN: 2319-4421.
- Chung, J. E., Stoel, L., Xu, Y., & Ren, J. (2012). Predicting Chinese consumers' purchase intentions for imported soy-based dietary supplements. *British Food Journal*, 114(1), 143–161. Doi: <https://doi.org/10.1108/00070701211197419>
- Dixit, A., Marthoenis, M., Arafat, S. M. Y., Sharma, P., & Kar, S. K. (2020). Binge watching behavior during COVID 19 pandemic: A cross-sectional, cross-national online survey. *Psychiatry Research*, 289, 113089. Doi: <https://doi.org/10.1016/j.psychres.2020.113089>
- Every-Palmer, S., Jenkins, M., Gendall, P., Hoek, J., Beaglehole, B., Bell, C., Williman, J., Rapsey, C., & Stanley, J. (2020). Psychological distress, anxiety, family violence, suicidality, and wellbeing in New Zealand during the COVID-19 lockdown: A cross-sectional study. *PLOS ONE*, 15(11), e0241658. Doi: <https://doi.org/10.1371/journal.pone.0241658>
- Gajjar, N. B. (2013). Factors affecting consumer behavior. *International Journal of Research in Humanities and Social Sciences*, 1(2), 10–15. ISSN: 2320-771X.
- Ganesha, K. S. (2018). Effectiveness of advertisement on purchasing behavior of customers towards telecom product and services. *BIMS International Journal of Social Science Research*, July. Retrieved from [https://www.researchgate.net/publication/328803410\\_Effectiveness\\_Of\\_Advertisement\\_On\\_Purchasing\\_Behavior\\_Of\\_Customers\\_Towards\\_Telecom\\_Product\\_And\\_Services](https://www.researchgate.net/publication/328803410_Effectiveness_Of_Advertisement_On_Purchasing_Behavior_Of_Customers_Towards_Telecom_Product_And_Services)
- Hamishehkar, H., Ranjdoost, F., Asgharian, P., Mahmoodpoor, A., & Sanaie, S. (2016). Vitamins, are they safe? *Advanced Pharmaceutical Bulletin*, 6(4), 467–477. Doi: <https://doi.org/10.15171/apb.2016.061>
- Izazi, F., & Kusuma, A. (2020). Results of respondents public knowledge of the processing method of Temulawak (*Curcuma xanthorrhiza*) and Kencur (*Kaemferia galanga*) as increased immunity during COVID-19 using the proximity of the Leximancer program concept. *Journal of Pharmacy and Science*, 5(2), 93–97. Doi: <https://doi.org/10.53342/pharmasci.v5i2.192>



- Jennifer, H., & Saptutyingsih, E. (2015). Individual preference for traditional medicine in Indonesia. *Journal of Economics & Development Studies*, 16(1), 26–41. E-ISSN: 2541-5506.
- Kardoko, H. (2020, October 22). The pharmaceutical industry revolution amid the covid-19 pandemic. *Ekonomi Bisnis.com*. Retrieved from <https://ekonomi.bisnis.com/read/20201022/257/1308478/revolusi-industri-farmasi-di-tengah-pandemi-covid-19>
- Kotler, P., & Keller, K. L. (2015). Marketing management. *In Soldering & Surface Mount Technology*, 13(3). <https://doi.org/10.1108/ssmt.2001.21913cab.040>
- Kumar, D. D. P. (2013). The role of advertising in consumer decision making. *IOSR Journal of Business and Management*, 14(4), 37–45. Doi: <https://doi.org/10.9790/487x-1443745>
- Lakshmi, V. V., Niharika, D. A., & Lahari, G. (2017). Impact of gender on consumer purchasing behaviour. *IOSR Journal of Business and Management*, 19(8), 33–36. Doi: <https://doi.org/10.9790/487X-1908053336>
- Lidyana, V. (2020, May 19). Sales of drugs and health supplements go up, National Food and Drug Agency "patrols" online shops. Retrieved from <https://finance.detik.com/berita-ekonomi-bisnis/d-5020951/penjualan-obat-dan-suplemen-naik-bpom-patrol-di-toko-online>
- Liu, X., Luo, W.-T., Li, Y., Li, C.-N., Hong, Z.-S., Chen, H.-L., Xiao, F., & Xia, J.-Y. (2020). Psychological status and behavior changes of the public during the COVID-19 epidemic in China. *Infectious Diseases of Poverty*, 9(58), 1-11. Doi: <https://doi.org/10.1186/s40249-020-00678-3>
- Loxton, M., Truskett, R., Scarf, B., Sindone, L., Baldry, G., & Zhao, Y. (2020). Consumer behaviour during crises: Preliminary research on how coronavirus has manifested consumer panic buying, herd mentality, changing discretionary spending and the role of the media in influencing behaviour. *Journal of Risk and Financial Management*, 13(8), 166. Doi: <https://doi.org/10.3390/jrfm13080166>
- Margraf, J., Brailovskaia, J., & Schneider, S. (2020). Behavioral measures to fight COVID-19: An 8-country study of perceived usefulness, adherence and their predictors. *PLoS ONE*, 15(12), 1–22. Doi: <https://doi.org/10.1371/journal.pone.0243523>
- Maulana, A. (2020, April 3). During the outbreak community need for health supplements increases. Retrieved from <https://mediaindonesia.com/humaniora/301019/selama-wabah-kebutuhan-masyarakat-akan-suplemen-kian-meningkat.html>
- Ministry of Health Republic of Indonesia. (1994). *Advertising guidelines: OTC drugs, traditional medicines, medical devices, cosmetics, household health supplies and food and beverages*.
- Ministry of Health Republic of Indonesia. (2011). *Rational drug use module. Directorate of Pharmaceutical Services*.
- Mukti, A. W. (2020). The relationship of knowledge to the behavior of using health supplements for the residents of Kebonsari Surabaya during the covid-19 pandemic. *PHARMACEUTICAL: Journal of Pharmaceutical Science*, 1(1), 20–25. Retrieved from <http://jurnal.unipasby.ac.id/index.php/farmasis/article/view/2656>
- Nabity-Grover, T., Cheung, C. M. K., & Thatcher, J. B. (2020). Inside out and outside in: How the COVID-19 pandemic affects self-disclosure on social media. *International Journal of Information Management*, 55, 102188. Doi:

- <https://doi.org/10.1016/j.ijinfomgt.2020.102188>
- National Food and Drug Agency. (2014). *Guidelines for advertising of traditional medicine and health supplements*. Directorate of Assessment of Traditional medicine, Food Health supplements, and Cosmetics.
- Nielsen Company Indonesia. (2020a, March 19). Digital consumers show positive growth trends. *Nielsen*. Retrieved from <https://www.nielsen.com/id/en/press-releases/2020/digital-consumers-show-positive-growth-trends/>
- Nielsen Company Indonesia. (2020b, March 23). Covid-19 and its impact on the media consumption trend. *Nielsen*. Retrieved from <https://www.nielsen.com/id/en/press-releases/2020/covid-19-and-its-impact-on-the-media-consumption-trend/>
- Nurhayati, T., & Hendar, H. (2019). Personal intrinsic religiosity and product knowledge on halal product purchase intention: Role of halal product awareness. *Journal of Islamic Marketing*, 11(3), 603–620. Doi: <https://doi.org/10.1108/JIMA-11-2018-0220>
- Rizvi, R. F., Wang, Y., Nguyen, T., Vasilakes, J., Bian, J., He, Z., & Zhang, R. (2019). Analyzing social media data to understand consumer information needs on dietary supplements. *Studies in Health Technology and Informatics*, 264, 323. Doi: <https://doi.org/10.3233/SHTI190236>
- Roberti, G. (2014). The influence of family socialization on consumer choices of young people. A case study of female university students. *Italian Journal of Sociology of Education*, 6(3), 41-69. Doi: <https://doi.org/10.14658/pupj-ijse-2014-3-4>
- Ronis, M. J. J., Pedersen, K. B., & Watt, J. (2018). Adverse effects of nutraceuticals and dietary supplements. *Annual Review of Pharmacology and Toxicology*, 58, 583–601. Doi: <https://doi.org/10.1146/annurev-pharmtox-010617-052844>
- Rossanty, Y., & Nasution, M. D. T. P. (2018). Information search and intentions to purchase: The role of country of origin image, product knowledge, and product involvement. *Journal of Theoretical and Applied Information Technology*, 11(4), 130-141. ISSN: 2076-9202.
- Saefi, M., Fauzi, A., Kristiana, E., Adi, W. C., Muchson, M., Setiawan, M. E., Islami, N. N., Ningrum, D. E. A. F., Ikhsan, M. A., & Ramadhani, M. (2020). Survey data of COVID-19-related knowledge, attitude, and practices among Indonesian undergraduate students. *Data in Brief*, 31, 105855. Doi: <https://doi.org/10.1016/j.dib.2020.105855>
- Setianingrum, M. F., & Yuliati, L. N. (2017). Effect of Consumer Awareness of Education Material, Source of Information, and Value of Materialism on Behavior as A Smart Adolescent Consumer. *Journal of Consumer Sciences*, 2(2), 41-56. <https://doi.org/10.29244/jcs.2.2.41-56>
- Shaouf, A. A. A. (2018). Revising the Effects of Online Advertising Attributes on Consumer Processing and Response. *International Journal of Marketing Studies*, 10(1), 39-53. Doi: <https://doi.org/10.5539/ijms.v10n1p39>
- Siahaan, S., Usia, T., Pujiati, S., Tarigan, I. U., & Murhandini, S. (2017). Knowledge , Attitude , and Practice of Communities on Selecting Safe Medicines in Three Provinces in Indonesia. *Indonesian Pharmaceutical Journal*, 7(2), 136–145. Doi: <https://doi.org/10.22435/jki.v7i2.5859.136-145>
- Sulaeman. (2020, April 3). Vitamin C is rare due to the corona virus. *merdeka.com*. Retrieved from <https://www.merdeka.com/uang/vitamin-c-langka-akibat-virus-corona-jika-ada-harganya-sudah-naik-tinggi.html>
- Sæmundsson, K. P. (2012). Consumer trust in advertising in different media.

[Dissertation]. Iceland(UK): Reykjavik University.

Tardy, A. L., Pouteau, E., Marquez, D., Yilmaz, C., & Scholey, A. (2020). Vitamins and minerals for energy, fatigue and cognition: A narrative review of the biochemical and clinical evidence. *Nutrients*, 12(1), 228. Doi: <https://doi.org/10.3390/nu12010228>

Viksne, K., Salkovska, J., Gaitniece, E., & Puke, I. (2016). Comparative Analysis of Customer Behaviour Models. *Proceedings on the 2016 International Conference Economic Science for Rural Development* (Issue 43). Retrieved from [http://lufb.llu.lv/conference/economic\\_science\\_rural/2016/Latvia\\_ESRD\\_43\\_2016-231-238.pdf](http://lufb.llu.lv/conference/economic_science_rural/2016/Latvia_ESRD_43_2016-231-238.pdf)

[WHO] World Health Organization. (2021). WHO CWHO Coronavirus Disease (COVID-19) Dashboard, Data last updated: 2021/1/17, 6:51 pm CET. Retrieved from <https://covid19.who.int/>

[WHO Europe] World Health Organization Europe. (2020). Transmission of SARS-CoV-2: implications for infection prevention precautions. Scientific brief, July 9 2020. Retrieved from <https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions%0Ahttps://bityli.com/j84ms>