



Users' Satisfaction with Service Quality of Nutribid Application During the COVID-19 Pandemic

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ABSTRACT

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During the COVID-19 pandemic, nutritional problems are observed to be increasing, such as obesity, minimum nutritious food intake, and micronutrient deficiency. The dreadful effects of COVID-19 on the health sectors, combined with the advanced technology development, had prompted the emergence of Nutribid application. Nutribid is an online health service application focusing on nutritional health. This study aimed to investigate the users' satisfaction with the service quality of Nutribid application during the COVID-19 pandemic. This quantitative research approach used the descriptive method. The univariate test was used to analyze the data through mean and frequency distribution. The users' satisfaction was examined from 5 aspects, namely responsiveness, empathy, reliability, tangibles, and assurances. We obtained scores of 86.32, 88.8, 88.84, 87.84, and 88.52 percent for responsiveness, empathy, reliability, tangibles, and assurances, respectively. These scores indicate that the users present great satisfaction with the services from Nutribid. This result is also supported by the average results of the Likert scale of more than 81 percent. Our findings can be used as a reference for user satisfaction with the services of the Nutribid application.

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I. Introduction

The emergence of COVID-19 induced by the SARS-CoV-2 virus carries effects on the general health of society (Yanti & Karminingtyas, 2021) as it has also impacted various sectors of human life. Linearly, nutritional problems also increase during the COVID-19 pandemic, primarily among adolescents. The nutritional issues during the adolescent period carry substantial effects on the productive ages (Tabina et al., 2021). The results of Fundamental Health Research (Kemenkes RI, 2018) showed that 13-15 (25.7%) and 16-18 (26.9%) years old adolescents have short and very short nutritional statuses, respectively. Besides, 8.7 and 8.1% of the 13-15 and 16-18 years old adolescents have a thin and very thin body, with 16.0 and 13.5% obesity prevalence for the 13-15 and 16-18 years old adolescents, respectively. Besides, the three highest nutritional issues reported during the COVID-19 pandemic in Indonesia include obesity, low nutritious food intake, and micronutrient deficiency (Tabina et al., 2021).

In an attempt to minimize COVID-19 transmission, many health facilities have reduced face-to-face visits for non-urgent services by utilizing recent information and communication technology advancements (Kemenkes, 2020). A previous survey revealed that 71.8% of people had never visited the hospital, while the other 65.5% of people admitted that they prefer using digital health consultation during this COVID-19 pandemic (Sesilia, 2020). The technology sectors have utilized this COVID-19 pandemic situation as marked by the emergence of different new applications, such as Nutribid.

Nutribid is an android-based application that facilitates an online nutritious health consultation (Astri et al., 2021). Using the recent development of information and communication technology, this application promotes the distanced nutrition health consultation. Online counseling through virtual media and media applications is encouraged in an effort to reduce nutrition issues during the COVID-

19 pandemic (Kemenkes, 2020). The services offered by Nutribid application subsist of nutrition consultation, consultation with obstetricians, a health calculator to estimate the daily energy need, and a health calculator to calculate the nutrition status (Astri et al., 2021).

Service quality represents the ability of a service product to satiate the users (Heri, 2015). Meanwhile, satisfaction refers to the level of someone's feeling after they use a particular service (Sumpena, Jiwa, & Wati, 2017). Users will be satisfied if they attain better services than their expectations. There are five vital aspects of user satisfaction consisting of responsiveness, empathy, reliability, tangibles, and assurance (Nuryani, Ramadhani, & Lestari, 2020). This study aims to evaluate the users' satisfaction with the services of Nutribid application during the COVID-19 period through the aspects of responsiveness, empathy, tangibles, and assurance. As Nutribid is a new application, identification of its users' satisfaction is essential.

II. Method

This descriptive quantitative research used a cross-sectional design. From the population of 15-19 years old adolescents living in Bekasi, 100 respondents were selected through purposive sampling. The criteria for respondents' selection subsisted of adolescents 15-19 years old, living in Bekasi City, having an android device, were willing to download the Nutribid application, willing to have a consultation via Nutribid, and filling questionnaire after the consultation.

The data were collected using a close-ended questionnaire in Google Form. Before it was distributed to the research participants, it was tried out on 30 respondents and analyzed using validity and reliability tests. In the questionnaire, we used a 1–5 point Likert scale with 1-100% estimation results. Meanwhile, the collected data were analyzed using a univariate test with frequency distribution and mean score.

III. Results and Discussion

A. Validity Test

A validity test was used to measure the quality of questionnaire items. In the validity test involving 30 respondents, we used 25 items questionnaire in which every five items represented the aspects of responsiveness, empathy, reliability, tangibles, and assurance. The items were declared valid if they attained a Pearson correlation score of >0.30 with a 99% confidence level or significance $<0,01$. The results of the validity test are presented in Table 1.

The questionnaire validity test was carried out using Pearson Product Moment correlation. Every five items of the questionnaire represented the aspects of responsiveness, empathy, reliability, tangibles, and assurance. The questionnaire was categorized as valid since all of its 25 items attained a higher than 0.30 Pearson correlation score and lower than 0.01 significance value.

Table 1. Results of Validity Test

Variable	Pearson Correlation	Sig. (2-tailed)
<i>Responsiveness</i>		
Item 1	.654**	.000
Item 2	.711**	.000
Item 3	.786**	.000
Item 4	.635**	.000
Item 5	.544**	.002
<i>Empathy</i>		
Item 1	.666**	.000
Item 2	.733**	.000
Item 3	.726**	.000
Item 4	.576**	.001
Item 5	.528**	.003
<i>Reliability</i>		
Item 1	.745**	.000
Item 2	.699**	.000
Item 3	.668**	.000

Variable	Pearson Correlation	Sig. (2-tailed)
Item 4	.586**	.001
Item 5	.647**	.000
<i>Tangibles</i>		
Item 1	.746**	.000
Item 2	.688**	.000
Item 3	.799**	.000
Item 4	.602**	.000
Item 5	.464**	.010
<i>Assurance</i>		
Item 1	.586**	.000
Item 2	.780**	.000
Item 3	.580**	.001
Item 4	.757**	.000
Item 5	.548**	.002

B. Reliability Test

The reliability test was used to estimate the dependability of each questionnaire item that had been declared valid. This test was carried out using the Cronbach Alpha test. Each item was displayed reliable if it obtained a Cronbach alpha score of >0.60. The results of the reliability test are shown in Table 2.

Table 2. Results of Reliability Test

Variable	Cronbach's Alpha	N of items
Responsiveness	.684	5
Empathy	.653	5
Reliability	.687	5
Tangibles	.665	5
Assurance	.651	5

The obtained Cronbach's Alpha score of each item was greater than 60, showing that all of the questionnaire items were reliable.

C. Characteristics of Research Respondents

The respondents' characteristics were identified from the primary data gathered through the questionnaire. The characteristics consisted of respondents' age, gender, and level of education are shown in Table 3.

Table 3. Characteristics of Respondents

Respondents' Characteristics	Total	
	n	%
<i>Age</i>		
15 years old	15	15,0
16 years old	14	14,0
17 years old	4	4,0
18 years old	17	17,0
19 years old	50	50,0
Total	100	100,0
<i>Gender</i>		
Male	22	22,0
Female	78	78,0
Total	100	100,0
<i>Level of Education</i>		
High school students	33	33,0
College students	67	67,0
Total	100	100,0

Table 3 shows that most of the respondents were 19 years old (50%), while only 4% of them were 17 years old. From the gender, 78% of the respondents were female, leaving only 22% of male

respondents. Meanwhile, the highest percentage of our respondents were college students (67%), and 33% of them were high school students.

D. Users' Satisfaction toward Nutribid Application

Table 4 shows the users' satisfaction with services provided on the Nutribid application during the COVID-19 pandemic. Essentially, satisfaction represents someone's feelings after they use a particular product or service in fulfilling their daily needs (Bahem, 2017). Our findings suggest that the users are highly satisfied with the service qualities in Nutribid applications. Therefore, the services are relatively excellent and acceptable for most Nutribid users. The satisfactory services can be observed from the facilities, convenience, and excellent responses provided in Nutribid application in nutrition consultation.

Table 4. User's Satisfaction with Nutribid Application

Characteristics	Total	
	n	%
<i>Responsiveness</i>		
Highly satisfy	67	67,0
Satisfy	26	26,0
Relatively satisfy	6	6,0
Not satisfy	0	0
Highly not satisfy	1	1,0
<i>Empathy</i>		
Highly satisfy	71	71,0
Satisfy	23	23,0
Relatively satisfy	6	6,0
Not satisfy	0	0
Highly not satisfy	0	0
<i>Reability</i>		
Highly satisfy	78	78,0
Satisfy	17	17,0
Relatively satisfy	5	5,0
Not satisfy	0	0
Sangat tidak puas	0	0
<i>Tangibles</i>		
Highly satisfy	73	73,0
Satisfy	23	23,0
Relatively satisfy	4	4,0
Not satisfy	0	0
Highly not satisfy	0	0
<i>Assurance</i>		
Highly satisfy	77	77,0
Satisfy	19	19,0
Relatively satisfy	3	3,0
Not satisfy	1	1,0
Highly not satisfy	0	0
Total	100	100

According to Sanyoto (2011), excellent services are illustrated by the courtesy and friendliness of the service providers, along with the comprehensiveness of the provided facilities. The outstanding services also enhance the consumers' loyalty. Great users' satisfaction carries excellent effects on the Nutribid application usage as the users use it rapidly in fulfilling their daily needs. Additionally, satisfied users may also recommend the application to their friends and family members, improving the profits for the service providers. Someone's satisfaction level highly relies on the quality of the offered service and product. The influencing factors of someone's satisfaction are responsiveness, tangibles, reliability, empathy, and assurance (Tjiptono, 2014). Besides, compared to other health applications, the Nutribid application offers a health calculator feature that allows users to estimate their nutritional status and daily energy need. This application is a community dedication from one of the lecturers in the Faculty of Health Sciences of Universitas Singaperbangsa Karawang so that all of the health consultation features in the application can be used by the society for free.

Table 5 presents the analysis results for user satisfaction with services provided in Nutribid application during the COVID-19 pandemic, from the aspects of responsiveness, empathy, reliability, tangibles, and assurance.

Table 5. Users' Satisfaction Score on the Services in Nutribid Application

Variable	Min	Max	Mean	Standard Deviation	%
Responsiveness	5	25	21,58	3,57	86,32
Empathy	13	25	22,2	3,27	88,8
Reliability	12	25	22,21	3,87	88,84
Tangibles	15	25	21,96	2,70	87,84
Assurance	7	25	22,13	3,40	88,52

1) Aspect of Responsiveness

Based on our analysis results, the responsiveness aspect attained the lowest and highest scores of 5 and 25, respectively, with a mean score of 21.58, classified as excellent. Its standard deviation was 3.57, signifying that the data were homogeneously distributed as it is lower than the mean score. Meanwhile, the final score on this aspect was 86.32%, classified as highly satisfied. This aspect of responsiveness represents the behavior of the nutritional consultant in responding to and helping the users who experience nutritional issues through the Nutribid. This aspect is eminently affected by the nutritional consultant's friendliness, care, and understanding. Besides, the nutritional consultants are also expected to present quick and receptive responses to the users' questions during the consultation. Our findings suggest that every time the users propose questions related to nutrition, the nutrition consultant offers a quick answer through the consultation feature within the Nutribid. Nanda (2018) asserts that responsiveness is an essential evaluation of the quality of a specific service since it represents the service provider's ability to respond to the users' issues and complaints. Thus, incredible responsiveness increases users' satisfaction. On the other hand, a study by Bashir and Bastola (2018) on the responsiveness of health telemedicine applications revealed non-satisfactory results due to the slow response presented by the nurse. Meanwhile, Uppal and Mittal (2019) added that service quality carries robust effects on the users' complaints. Mostly, the users complaints on the slow service provision.

2) Aspect of Empathy

The analysis results on the empathy aspects showed a minimum and maximum score of 13 and 25, respectively, with a mean of 22.2, categorized as excellent. This aspect also attained a standard deviation of 3.27, indicating less varied data or homogenous data distribution due to it being lower than the mean score. The final score for the empathy aspect was 88.8%, classified as highly satisfied. This aspect covers the ability of nutrition consultants to present their care and understanding. In other words, during the nutrition consultation, the consultant should be able to establish excellent communication by showing courtesy and companionability, ensuring that the users feel comfortable throughout the consultation session. Nutribid nutrition consultants present excellent skills in facilitating the users resolve their issues so that the users are satisfied with the application. Butar-Butar and Simamora (2016) highlights that presenting personal care to users can enhance the users' satisfaction with the services. The empathy offered by service providers helps users to feel comfortable and respected, improving the service quality. The study carried out by Bashir and Bastola (2018) on the empathy aspects of telehealth or telemedicine applications involving nursing home residents revealed high user satisfaction. Their respondents also admitted that the services of telemedicine are full of affection, and great nurse understanding, so that they are satisfied and happy in using the application.

3) Aspect of Reliability

The analysis results on reliability aspects showed a maximum and minimum score of 25 and 12, respectively, with a mean of 22.21, categorized as very good. Meanwhile, its standard deviation was 3.87, showing homogenous data distribution and less varied data since it is lower than the mean score. The final score of the reliability aspects was 88.84% which can be classified as highly satisfactory. The aspect of reliability indicates the accurate and fascinating nutrition consultation and features of Nutribid application. Therefore, we conclude that the facilities and features offered by Nutribid are excellent and satisfying. Aside from that, Nutribid is also easily accessible, so it is capable of helping people resolve their nutritional issues anywhere and anytime. Nutribid also ensures the accuracy and

pertinence of the consultation, improving the users' trust. Sanyoto (2011) explains that reliable and quick service enhances the users' convenience and satisfaction. Meanwhile, a study carried out by Ko and Chou (2020) discovered great users' satisfaction with e-health applications caused by its excellent services in resolving health issues among the elderly. Besides, the service providers also offer detailed and excellent medical services for their users.

4) *Aspect of Tangibles*

Our results of the analysis in the tangibles aspect showed minimum and maximum scores of 15 and 25, respectively, with a 21.96 mean score that can be categorized as excellent. This aspect attained a 2.70 score of standard deviation, representing the homogenous and less varied data since it is lower than the mean score. The final score on the aspects of tangibles was 87.84%, categorized as highly satisfied. This aspect represents the feasibility of display, features, and communication means in the Nutribid. Therefore, the obtained score in this aspect indicates the high attractiveness of Nutribid application. Besides, Nutribid also presents a compelling color design, along with favorable features, such as the health calculator and nutrition consultation. The features in this application are feasible and can be used easily, assuring the safety and convenience of its users. The interesting display of Nutribid application enhances its attractiveness as people are always contented with seeing beautiful elements. Zeithaml, Berry, and Parasuraman (1996) declares that service quality represents the usability of service in facilitating the users to resolve their issues. Thus, service quality enhances the user's satisfaction. A study from Ko and Chou (2020) on e-health application involving the residents of the nursing house revealed high tangibles score as the application provided relatively comprehensive features that can be easily used, especially by the elders.

5) *Aspect of Assurance*

Our analysis results showed that the assurance aspects attained minimum and maximum scores of 7 and 25, respectively, with a 22.13 mean score, categorized as excellent. It attained a 3.40 standard deviation indicating homogenous or less varied data distribution since it is lower than the mean score. The final score for the assurance aspect was 88.52%, classified as very satisfied. The assurance aspect represents the knowledge of the nutrition consultants, as well as their ability to increase the users' confidence and belief in resolving their health problems. The high score on the assurance aspect shows that the Nutribid application provides great nutrition consultations that are capable of enhancing the users' confidence in resolving their issues, accelerating the users' convenience. Users' confidence and convenience are reflected in their ability to complete the nutrition consultation. Additionally, the nutrition consultant in this application also presents excellent knowledge in nutrition so that the users are satisfied and convinced with the nutritional solution they attained from this application. Butar-Butar and Simamora (2016) accentuates that service providers should maintain the trust of their users. Once the service providers are capable of providing trusted services, they become memorable, and users will keep using their services. The previous research from Bashir and Bastola (2018) on a telemedicine application discovered a less satisfying score in the assurance dimension since the nurses were incapable of enhancing the patient trust, reflected from the nurses' answers which did not correspond to the patients' expectations.

IV. Conclusion

Based on our analysis results, the average users' satisfaction with the services offered by Nutribid application during the COVID-19 pandemic was >81%, categorized as highly satisfied. The users' satisfaction in responsiveness, reliability, empathy, tangibles, and aspect is categorized as very satisfying. In the responsiveness aspect, users' satisfaction with the services provided on Nutribid application during the COVID-19 pandemic is categorized as very satisfying. For future researchers, they are suggested to investigate other variables of Nutribid applications, such as the correlation between user satisfaction and loyalty to using the application. The investigation of another variable can signify the level of user satisfaction in using the Nutribid application.

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