

## **Needs As The Dominant Factor of Generation Z in Telemental Health (TMH) Services Utilization**

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### **ABSTRACT**

*Nowadays, mental health is still an unfinished problem in Indonesia. Telemental health (TMH) exists as a form of adaptation toward technological developments that are expected to help address challenges in mental health services. There is a continuous increase in the number of Generation Z who suffer mental health problems. Meanwhile, the coverage of mental health services is still low even though the convenience of TMH has supported it. This study aims to analyse the factors that influence the utilisation of TMH among Generation Z based on Andersen's theory. This quantitative research collected 180 respondents and then analysed them using univariate, bivariate, and multivariate. Results showed a relationship between the needs factor, access to TMH, health worker support, and residence on the use of TMH. While the variables that aren't related are gender, education, occupation, marital status, and knowledge. The needs factor dominates the effect of using TMH among Generation Z in Indonesia, where a change in it can affect 15 times the utilisation of TMH. To develop TMH into sustainable services, providers can create the right strategy. It's recommended to Generation Z to avoid self-diagnosis accompanied by enriching knowledge about maintaining mental health.*

**Keywords:** *telemental health; generation Z; health services utilization; Andersen theory*

### **ABSTRAK**

Dewasa ini, kesehatan mental masih menjadi masalah yang belum sepenuhnya terselesaikan di Indonesia. *Telemental health* (TMH) hadir sebagai bentuk adaptasi perkembangan teknologi yang diekspektesikan dapat membantu menyelesaikan tantangan pelayanan kesehatan mental. Meski begitu, kenaikan jumlah penduduk pada rentang usia generasi Z yang mengalami masalah kesehatan mental terus terjadi serta masih rendahnya cakupan pelayanan kesehatan mental meskipun telah didukung dengan kemudahan TMH. Tujuan penelitian ini adalah untuk menganalisis faktor yang memengaruhi pemanfaatan TMH pada generasi Z berdasarkan teori Andersen. Penelitian kuantitatif ini berhasil mengumpulkan 180 responden yang kemudian dianalisis secara univariat, bivariat, dan multivariat. Hasil penelitian menunjukkan hubungan antara faktor kebutuhan, akses layanan TMH, dukungan tenaga kesehatan, dan tempat tinggal dengan pemanfaatan TMH. Pada sisi lain, terdapat variabel yang tidak berhubungan, yaitu jenis

kelamin, pendidikan, pekerjaan, status perkawinan, dan pengetahuan kesehatan mental. Faktor kebutuhan mendominasi pengaruh terhadap pemanfaatan TMH pada generasi Z di Indonesia, di mana perubahannya dapat memengaruhi 15 kali pemanfaatan TMH. Sebagai upaya pengembangan TMH, penyedia layanan dapat menyusun strategi yang tepat. Bagi generasi Z dianjurkan untuk menghindari *self-diagnosis* dibarengi dengan memperkaya pengetahuan mengenai cara menjaga kesehatan mental.

**Kata Kunci:** *telemental health*; generasi Z; pemanfaatan layanan kesehatan; teori Andersen

## INTRODUCTION

Nowadays, mental health continues to be an unresolved concern in Indonesia. Concerning the findings from the 2013 and 2018 National Basic Health Research (Riskesdas) surveys, there has been a noticeable escalation in the proportion of individuals over 15 years who have encountered emotional and mental disorders. Initially recorded at 6.1%, this figure has surged to 9.8% (Badan Penelitian dan Pengembangan Kementerian Kesehatan Republik Indonesia, 2013, 2018). The inaugural mental health survey in Indonesia shows that 1 in 3 adolescents aged 10 to 17 years grapple with mental health issues, and 1 in 20 have experienced a mental disorder within the past year (Indonesia National Adolescent Mental Health Survey, 2022).

Several research findings above indicate that there is still a considerable portion of the Indonesian population within the Generation Z age range experiencing mental health issues, and it is a growing concern. Furthermore, if this situation is not appropriately addressed, it may lead to deviant behaviours such as adolescent delinquency, self-harm, and suicide (Hardin

and Nidia, 2022). Addressing mental health disorders requires significant time, necessitating early and precise intervention, especially among Generation Z, the young generation and the nation's future (Angelina, 2022).

In reality, the urgency of addressing the above-mentioned mental health disorders is not supported by the availability of adequate mental health care facilities in Indonesia. As of October 2022, only around 50% of the 10,321 community health centres (puskesmas) can provide mental health services. This is one of the factors contributing to the low coverage of treatment for individuals with mental health disorders in Indonesia (Kementerian Kesehatan Republik Indonesia, 2022). The results of the 2018 Riskesdas survey also indicate a low coverage of treatment for individuals with depression, with only 9% of individuals aged over 15 years receiving treatment (Badan Penelitian dan Pengembangan Kementerian Kesehatan Republik Indonesia, 2018). This situation falls far short of the targets set in the Action Plan for 2020 – 2024 of the Directorate of

Mental Health and Substance Abuse Control of the Ministry of Health of the Republic of Indonesia, where by the end of 2024, the coverage of treatment for individuals with mental health disorders aged over 15 years is targeted to reach at least 50% (Direktorat Pencegahan dan Pengendalian Masalah Kesehatan Jiwa dan Napza Kemenkes RI, 2020).

With the advancement of technology, society is experiencing changes in seeking healthcare. Telemental health (TMH) emerges as one of the adaptations in the context of the fourth industrial revolution, which is a part of telemedicine, specifically in mental health. TMH provides synchronous services through various media (text, voice calls, and video calls), covering a range of services from consultation to interventions for clients who have or are suspected of having mental health disorders (Moreau *et al.*, 2018). As of December 2022, there are 99 TMH services available in the form of applications, websites, and social media intermediaries (Pijar Psikologi *et al.*, 2022).

In addition to the situation mentioned above, the decline in the performance of community health centres (puskesmas) since the onset of the COVID-19 pandemic in Indonesia has created an opportunity for the optimisation of technology in the

healthcare sector (Puspitasari and Mawarni, 2021). Preliminary study results involving 73 Generation Z respondents indicate that ease of access is the most dominant reason for utilising Telemental Health (TMH), with 66% of respondents citing it as the primary motive. Other causes include time-saving, meeting care needs, and more. These reasons collectively illustrate the positive impact of TMH, which can support efforts to expand mental health services.

The presence of Telemental Health (TMH) should ideally provide a solution to the challenges in mental healthcare services. However, referring to several research findings as previously outlined, it is evident that there has been an increase in the population within the Generation Z age range experiencing mental health disorders, and the coverage of mental health services remains low despite the accessibility of TMH services. Therefore, this research aims to analyse the factors influencing the utilisation rate of TMH services by applying Andersen's theory to examine factors related to need, enabling, and predisposing factors (Aday and Andersen, 1974).

## **METHOD**

This non-experimental quantitative research with a cross-sectional study design utilised a survey method through a Google Form

questionnaire distributed via social media platforms (Instagram, WhatsApp, LINE, and Twitter) from January to April 2023. The utilisation of TMH services served as the dependent variable. In contrast, need factors, TMH service accessibility, healthcare personnel support, gender, place of residence, education, occupation, marital status, and mental health knowledge were considered independent variables.

In this study, the exact number of users of available TMH services in Indonesia is unknown. Therefore, the population type under investigation falls within the category of an infinite population. A purposive sampling method was employed, taking into consideration several criteria. The study sample consisted of TMH service users meeting the inclusion criteria, which include being part of Generation Z (aged 13 – 18 years), Indonesian citizens, possessing personal electronic devices, and having previously used TMH services available in Indonesia. Respondents who did not use personal electronic devices to access TMH services or engaged in consultations, assessments, and therapy through peer counselling, chatbots, or similar asynchronous services were excluded as research subjects. Based on sample size calculation using the Paul Leedy formula, it was determined that this study required a

minimum of 100 respondents. The study successfully gathered 180 respondents who met the inclusion and exclusion criteria.

Before data collection, validity testing was conducted using the *Pearson product-moment method*, and reliability testing was performed using *Cronbach's alpha method* on the questionnaire. Subsequently, the primary data will be analysed through univariate, bivariate, and multivariate approaches. Bivariate analysis of the preliminary data will involve using the chi-square test. Independent variables can be associated with dependent variables if the p-value is  $<0.05$ . Meanwhile, multivariate analysis will be conducted using the backward method of multiple logistic regression, where only independent variables with a p-value  $<0.25$  will undergo multivariate analysis.

## RESULT AND DISCUSSION

This study was predominantly composed of Muslim female students aged 22 - 28 years residing in Central Java, with their highest educational background at the high school level (SMA) and unmarried marital status. The most frequently utilised TMH services by respondents were Halodoc and Alodokter. Based on the table below, it can be observed that 4 out of 9 independent variables are associated with the dependent

variable. These four independent variables are need factors, TMH service accessibility,

healthcare personnel support, and place of residence.

Table 1. Cross Tabulation and Chi-square Test Results of Independent and Dependent Variables

Independent Variables	TMH Services Utilization				Total		P-value
	Underutilize		Utilize		f	%	
	f	%	f	%			
<b>Needs factor</b>							
Less need	36	43,4	47	56,6	83	100	0,000
Need	5	5,2	92	94,8	97	100	
<b>Access to TMH services</b>							
Difficult	25	29,4	60	70,6	85	100	0,045
Easy	16	16,8	79	83,2	95	100	
<b>Healthcare personnel support</b>							
Less supportive	19	34,5	36	65,5	55	100	0,013
Supportive	22	17,6	103	82,4	125	100	
<b>Gender</b>							
Male	4	12,5	28	87,5	32	100	0,126
Female	37	25	111	75	148	100	
<b>Place of residence</b>							
Rural area	11	36,7	19	63,3	30	100	0,047
Urban area	30	20	120	80	150	100	
<b>Education</b>							
Higher education level	3	50	3	50	6	100	0,106
Lower education level	38	21,8	136	78,2	174	100	
<b>Occupation</b>							
Unemployed	30	25,4	88	74,6	118	100	0,243
Employed	11	17,7	51	82,3	62	100	
<b>Marital status</b>							
Single	40	23,4	131	76,6	171	100	0,392
Married	1	11,1	8	88,9	9	100	
<b>Mental health knowledge</b>							
Less knowledgeable	17	21	64	79	81	100	0,604
Knowledgeable	24	24,2	75	75,8	99	100	

Meanwhile, the other five independent variables, namely gender, education, occupation, marital status, and mental health knowledge, were not found to have a significant relationship with utilising TMH services among Generation Z individuals in Indonesia.

Table 2. Multiple Logistic Regression Modeling

Independent Variables	B	Wald	Exp (B)	95% CI for Exp (B)	
				Lower	Upper
<b>I. Initial Model</b>					
Needs factor	2,631	23,980	13,894	4,846	39,832
Access to TMH services	0,236	0,301	1,266	0,545	2,938
Healthcare personnel support	0,639	2,213	1,894	0,816	4,394
Gender	-0,940	2,105	0,390	0,110	1,391
Place of residence	0,637	1,353	1,891	0,646	5,533
Education	1,798	2,559	6,039	0,667	54,685
Occupation	-0,051	0,011	0,951	0,371	2,434
<b>Constant</b>	-1,699	1,670	0,188		
<b>II. Final Model</b>					
Needs factor	2,278	26,931	15,308	5,463	42,898
Gender	-1,074	2,872	0,341	0,099	1,118
Education	1,888	3,175	6,608	0,828	52,727
<b>Constant</b>	-0,658	0,333	0,523		

7 out of 9 independent variables met the multiple logistic regression analysis criteria, including need factors, TMH service accessibility, healthcare personnel support, gender, place of residence, education, and occupation. The results of the multivariate analysis in the table above indicate that one independent variable significantly influences the dependent variable. The variables of education and gender have Sig. Values > 0.05, indicating that these variables do not significantly impact the dependent variable. However, the model included both variables as covariates to prevent spikes in the Exp (B) value (Dahlan, 2019).

The odds ratio, as indicated by the Exp (B) value, is interpreted as the magnitude of the influence of the independent variable on the dependent variable. The need factor variable

has an Exp (B) value of 15.308 ~ 15, which means that Generation Z individuals with a greater need will utilise TMH services approximately 15 times more than those with lower requirements.

### **The Influence of Needs Factor on the Utilization of Telemental Health Services among Generation Z**

An individual's healthcare needs can be assessed through perceived needs and clinical evaluation. Perceived needs are evaluated based on the causes, symptoms, and vulnerability to mental health disorders perceived by an individual. On the other hand, estimated needs are assessed through diagnoses made by healthcare professionals. Respondents with a condition (94.8%) will

utilize TMH services at a higher intensity than those with less need (56.6%).

This study found that 87.7% of the respondents reported experiencing mental health disorders in the past 12 months. This condition has motivated them to seek an understanding and control over the perceived causes of their mental health disorders. Based on the collected primary data, stress was the most commonly perceived cause of mental health disorders among the respondents (92.8%). As for the diagnoses made by healthcare professionals during TMH utilisation, anxiety disorders were the dominant diagnosis (74.4%). Additionally, respondents sought TMH services due to the service's flexibility in terms of time (96.7%), location (93.9%), and communication medium that facilitates interaction with healthcare professionals (86.7%).

The chi-square test yielded a p-value of 0.000, indicating a significant relationship between need factors and the utilisation of TMH services. The findings from the bivariate analysis align with a study conducted in 2019 by Lee *et al.*, where need factors were significantly associated with the utilization of telemedicine in a rural population with a p-value <0.05 (Lee *et al.*, 2019). The multivariate analysis conducted in this study revealed that need factors influence the

utilization of TMH services, with changes in need factors having a 15-fold impact on the decision of Generation Z individuals to utilize TMH services. The findings of this study align with Andersen's Health Services Utilization Theory, where need factors are the most influential in an individual's decision to utilise healthcare services. The sense of need for curative healthcare services serves as a driving force that compels individuals to seek treatment to address their perceived mental health disorders, even in the presence of predisposing or enabling factors that may act as barriers. When viewed through the lens of predisposing and enabling factors, an individual may still utilise healthcare services even when facing difficulties accessing them to ensure their health needs are met. Conversely, someone may refrain from using healthcare services even when access is convenient due to a lack of alignment with their health needs (Maulany *et al.*, 2021). Similar situations arise with individuals who continue to use healthcare services because of alignment with their health needs despite having low knowledge, and individuals with good knowledge may not necessarily utilise healthcare services because they are aware of alternative methods to address their health concerns (Oktarianita *et al.*, 2021; Widiyastuty *et al.*, 2023).

The elaboration above aligns with the findings of this research, where it was observed that 70.6% of respondents continued to utilise TMH services even when facing challenges in access, and 79% of respondents had limited knowledge of mental health but still utilised TMH services. These findings may be attributed to the respondents' need for mental health services provided through TMH to fulfil their needs. Based on the results of the bivariate and multivariate analyses conducted, it can be concluded that the need factor for TMH services has a significant relationship and influence on the utilisation of TMH services among Generation Z individuals in Indonesia.

### **Independent Variables with Association but No Collective Influence**

#### Access to TMH Services

Respondents with easy access to TMH services (83.2%) are likelier to utilise TMH services than respondents with difficult access (70.6%). Some respondents underutilised TMH services because the services were not available 24/7 (19.4%), and each service session needed to be longer (13.9%). Based on the chi-square test, it was found that access to TMH services is associated with the utilisation of TMH services. Still, the ease or difficulty of access is not the sole determinant for an individual to utilise healthcare services. Other factors influencing an individual's

decision to use TMH services include their perception of mental healthcare, their ability to accept assistance, and the alignment between available services and their needs (Maulany *et al.*, 2021).

#### Healthcare Personnel Support

Respondents who received support from healthcare personnel in the supportive category (82.4%) are more likely to utilise TMH services at a higher intensity than respondents receiving less supportive healthcare personnel support (65.5%). The primary data collection revealed that respondents received healthcare personnel support in expressing their perceived mental health disorders, appropriate advice or solutions for their concerns, and motivation. Based on the chi-square test, healthcare personnel support is associated with utilising TMH services. However, the quality of support healthcare personnel provides alone does not compel an individual to use TMH services. Factors such as self-stigma and family support also play a role in an individual's decision to utilise healthcare services, in this case, TMH. (Kamaradova *et al.*, 2016; Ramadia *et al.*, 2022).

#### Place of Residence

Respondents utilising TMH services in urban areas (80%) outnumber those residing in rural areas (63.3%). Based on the chi-square test, place of residence is associated with utilising



TMH services. However, despite the association between place of residence and TMH service utilisation, it does not alone determine whether an individual will use TMH services. Other inevitable factors come into play, such as personal attitudes and societal stigma within the local community regarding mental health disorders and their treatment. Both of these factors also influence the willingness of individuals experiencing mental health disorders to seek treatment (Deng *et al.*, 2022; Oruh and Agustang, 2020).

### **Independent Variables with No Association**

#### Gender

Based on the chi-square test, gender is not associated with utilising TMH services. Multiple logistic regression modelling for multivariate analysis includes gender as a covariate. An interesting finding emerged in this study: male respondents using TMH services (87.5%) outnumbered female respondents (75%). Nevertheless, an intriguing situation was identified in this research, as female respondents dominated those who reported experiencing mental health disorders in the past year, accounting for 73%.

The above situation may arise due to the pubertal phase and differences in the anatomy of the anterior ventral insula, contributing to

differences in responses between females and males when experiencing mental health disorders (Cereda *et al.*, 2002; Darmayanti, 2008). Nevertheless, this condition does not mean that females will seek healthcare services whenever they experience mental health disturbances. Females have a higher estrogen hormone level than males, allowing them to regulate such troubles (Wirasto, 2020). Therefore, not everyone will rely on healthcare services to address perceived mental health disorders.

#### Education

There is a finding where respondents utilising TMH services with higher education levels (78.2%) outnumber those with lower education levels (50%). The chi-square test results indicate no association between education and the utilisation of TMH services. Multiple logistic regression modelling for multivariate analysis includes teaching as a covariate. People with a higher level of education are often assumed to be better at making judgments about something. However, when considering the occurrence of mental health disorders, it is found that individuals with higher formal education levels tend to experience stress during the learning process. This condition increases the vulnerability of individuals with higher education to mental health disorders (Agung, 2015). On the other hand, individuals with

lower education levels do not necessarily refrain from utilising technology-based healthcare services because the surrounding environment can support them in using TMH services (Basith and Prameswari, 2020). Therefore, more than formal education level is needed to determine whether someone will utilise TMH services.

#### Occupation

Respondents categorised as employed tend to utilise TMH services more often (82.3%) compared to unemployed (74.6%). Based on the chi-square test, employment is not associated with using TMH services. When considering the emergence of mental health disorders, workplace stress, if not appropriately managed, can negatively impact employees' mental health. A survey conducted by Cigna International Health shows that Generation Z has the highest number of stress sufferers. Generation Z has also recently entered the workforce and is immediately confronted with a permanent crisis (Carnegie, 2023; Cigna International Health, 2022). However, it is essential to note that being unemployed does not exempt someone from experiencing stressors. Individuals categorised as unemployed in this study consist of students and homemakers who have their stressors. Therefore, one's employment status alone does not determine

whether one will utilise TMH services to address perceived mental health disorders.

#### Marital Status

Respondents utilising TMH services with a partner (88.9%) outnumber those alone (76.6%). Based on the results of the chi-square test, it can be concluded that there is no association between marital status and the utilisation of TMH services. When considering the emergence of mental health disorders, individuals with partners and those alone have stressors that can affect their mental health conditions. Someone in the Generation Z age range who is married has a higher chance of experiencing psychological burdens (Rahmawati *et al.*, 2019). However, individuals in a relationship will have higher social support than those still alone (Fasihi Harandi *et al.*, 2017). This situation arises because there is still a strong negative stigma associated with someone single, especially within the expected societal expectation regarding marriage age, which can create unique pressures for single individuals (Oktawirawan and Yudiarso, 2020). Furthermore, other factors have been found to influence an individual's decision to utilise technology-based health services, whether they are alone or with a partner. These factors include personality type, social status, and economic status (Wahyudi and Fibriana, 2016). Therefore, marital status alone does

not determine an individual's decision to utilise TMH services.

### Mental Health Knowledge

Respondents with less knowledge (79%) tend to utilise TMH services at a higher intensity than those with good knowledge (75.8%). Based on the chi-square test, it was found that mental health knowledge is not related to the utilisation of TMH services. This aligns with Oktarianita et al.'s study, where individuals will still use healthcare services that match their needs due to other motivations, even if their knowledge is limited (Oktarianita *et al.*, 2021). The proportion of respondents with low knowledge residing in urban areas (83%) is higher than those living in rural areas (17%). Additionally, there is a finding that respondents were least accurate in responding to statements regarding how to maintain mental health. This condition is similar to what occurred in the community of Desa Mata Allo, where 75% of the population had positive coping mechanisms for their daily stressors (Setianingsih, 2012). Therefore, individuals with good and poor knowledge have their ways of maintaining mental health, which is not always achieved through healthcare services.

### **CONCLUSION**

The need for healthcare services motivates individuals to utilise healthcare services to

address perceived health issues, even with barriers from both predisposing and enabling factors. The results of this study indicate a relationship between the need factor, TMH service accessibility, healthcare professional support, and place of residence with the utilisation of TMH services among Generation Z individuals in Indonesia. Among these four related variables, the need factor is the most significant influence on utilising TMH services. Meanwhile, gender, education, occupation, marital status, and mental health knowledge do not show a significant relationship or combined effect on using TMH services among Generation Z individuals in Indonesia.

The researchers have several recommendations: 1) The Ministry of Health should formulate policies for implementing Telemental Health (TMH) services in Indonesia. This should include data collection and credibility screening of TMH services and supervision to maintain service quality. 2) TMH service providers should develop TMH platforms that are easily accessible through various devices (Android, iOS, desktop). They should consider providing 24-hour services, adjusting session durations, ensuring the competence of healthcare professionals, and developing their skills. 3) Generation Z individuals should utilise TMH services and follow up on consultation results. They should

avoid self-diagnosis, enhance their understanding and ability to manage stressors and select TMH platforms and healthcare professionals suitable for their mental health issues.

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