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Relationship Between Sociodemographic and Mental Health Problems in Indonesia's Deaf Community

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ABSTRACT

Mental health problems occur not only in the hearing population but also in the deaf community. Currently, no published studies in Indonesia report on mental health problems among deaf individuals. This study aimed to examine sociodemographic characteristics, determine the prevalence of mental health problems, and assess the relationship between sociodemographic factors and mental health problems in the deaf community. A cross-sectional design with univariate and bivariate analyses was used. Data were collected from 604 deaf participants across 20 cities in Indonesia who met the inclusion criteria. Mental health problems, including anxiety and depression, were assessed using the Self-Reporting Questionnaire-20 (SRQ-20). The results showed that 401 participants (66.4%) screened positive for mental health problems. Bivariate analysis indicated a significant association between gender and mental health problems ($p < 0.05$), while no significant relationships were found for other sociodemographic factors. Additionally, 14 of the 20 cities reported that more than 50% of participants experienced mental health problems. In conclusion, this study reveals a high prevalence of mental health problems among deaf individuals in Indonesia—exceeding that of the hearing population—and identifies gender as a sociodemographic factor associated with mental health problems. These findings underscore the need for policies that ensure equitable access to sign language-accessible mental health services, targeted training for health professionals, and community-based interventions developed in collaboration with deaf communities to improve mental health outcomes in Indonesia.

Keywords: Deaf; Mental health problems; Anxiety or depression; SRQ-20.

INTRODUCTION

Mental health may affect an individual's daily functioning and productivity, especially among those with symptoms of mental problems or disorders that require further medical help (Connell et al., 2012; Henderson et al., 2011). Symptoms of anxiety and depression are commonly found in the general population. Basic Health Research *(Riset Kesehatan Dasar)* in 2018 showed a prevalence of 9.8% for mental health problems in the Indonesian population (Indonesia Health Ministry, 2018). The prevalence of anxiety is reported to be 32.74%, and that of depression is 37.4% (Lu et al., 2023).

The deaf community experiences mental health problems that may be contributed to by their hearing impairment. Sensory disability in deaf individuals may lead to challenges in fulfilling their rights as expected in the general population, thus resulting in health problems, specifically mental health issues (Bodsworth et al., 2011; Kuenburg et al., 2016). Research abroad has shown higher prevalence rates of anxiety and depression among deaf people compared to the hearing population (Rogers et al., 2024). Other studies report similar findings, including for deaf children and adolescents (Khalid et al., 2025) and deaf elderly. The prevalence of mental problems among deaf individuals is 25% compared

to 20% in the hearing population (Kushalnagar et al., 2019). Contributing factors to mental health in the deaf community may be complex and varied, covering issues of access and communication with health care and health workers (Emond et al., 2015). Factors such as gender, level of education, work status, and age may contribute to the deaf community's health status, especially mental health status.

Currently, there is no research in Indonesia examining mental health problems or disorders within the deaf community. No published national data exist on mental health issues among deaf individuals, highlighting a critical need for scientific evidence (Rogers et al., 2024). Such data are essential for the deaf community, mental health professionals, and government stakeholders, particularly to increase awareness, improve regulations, and promote accessible mental health care. At present, available information is derived solely from international studies and publications. This study aims to be the first in Indonesia to determine the prevalence of mental health problems in the deaf community and to examine the sociodemographic factors associated with these problems.

METHOD

This research was an observational analytic study with a cross-sectional design to determine the relationship between sociodemographic factors and mental health problems in the deaf community. The sample was recruited from deaf communities in several cities in Indonesia under the Indonesian Association for the Welfare of the Deaf or *Gerakan untuk Kesejahteraan Tunarungu Indonesia (Gerkatin)*. The study took place in several provinces in Indonesia where Gerkatin branches were located. The sample size was 604 participants who met the inclusion criteria: deaf subjects who consented to participate (by signing informed consent), were able to read, write, and understand sign language, and were aged 15 years or older. The exclusion criteria were illiteracy, aggression and uncooperativeness, and unwillingness to participate in the study. The sample was selected using a consecutive sampling technique, with researchers including all participants who met the inclusion and exclusion criteria.

Data were collected in each of 20 cities with Gerkatin members, starting with sociodemographic data, which included gender, age, level of education, working status, and marital status. Data collection was completed within two months after the research team visited each city. Participants who consented to the study completed the Self-Reporting Questionnaire-20 (*SRQ-20*). The *SRQ-20* is a questionnaire developed by the World Health Organization (WHO) to assess psychopathology or mental problems (such as anxiety and depression) and is completed individually by participants. It consists of 20 questions or statements with "yes" or "no" response options. Each "yes" answer receives a score of 1, and each "no" answer receives a score of 0. The questionnaire assesses signs or symptoms of anxiety and depression experienced in the past 30 days. The minimum *SRQ-20* score is 1, and the maximum is 20. A cutoff score of ≥6 indicates that the participant had mental health problems or was experiencing symptoms of depression or anxiety. The time required to complete the questionnaire ranged from five to ten minutes. The *SRQ-20* has also been used for research purposes in Indonesia, including *Riset Kesehatan Dasar* (Indonesia Health Ministry).

Data analysis for univariate data involved frequency distributions for sociodemographic data and *SRQ-20* score interpretation. All categorical variables were analyzed using frequency (*n*) and percentage (%). Bivariate analysis was used to determine the relationship between sociodemographic data and *SRQ-20* interpretation of mental health problems using the chi-square test, with $p < 0.05$ indicating statistically significant results.

RESULTS AND DISCUSSION

Sociodemographic data or general characteristics of study participants are presented in Table 1. A total of 604 respondents have participated in the study with 273 (45.2%) male and 331 (54.8%)

female. Most participants are within the age 18-60 years old (94.2%). Majority of respondents have finished high school education (57.6%). In this study, it was also found that most of them (46.2%) have non-formal work. Out of 604 participants in the study, 401 (66.4%) experienced mental health problems such as depression and anxiety while 203 of them (33.6%) did not experience mental problems.

Table 1. General characteristics

Characteristics	N (604)	%
Gender		
Male	273	45.2
Female	331	54.8
Age		
<18	27	4.5
18-60	569	94.2
>60	8	1.3
Education		
No education	33	5.5
Elementary	61	10.1
Middle School	75	12.4
High School	348	57.6
College	87	14.4
Work Status		
Formal	146	24.2
Non-formal	279	46.2
No work	179	29.6
Marital Status		
Not married	378	62.6
Married	209	34.6
Divorce	17	2.8
SRQ		
<6	203	33.6
≥6	401	66.4

Based on table 2, 14 out of 20 cities visited for the purpose of the study were reported to have more than 50% respondents with SRQ-20 score ≥ 6. Ruteng reported 100 % respondents with mental health problems followed by Mataram with 98% and Tarakan 89%. The lowest reported respondents was in Manokwari with 10% followed Sumba Barat Daya with 38%.

Table 2. SRQ-20 score in 20 cities

City	SRQ-20			
	Score <6		Score ≥ 6	
	N	%	N	%
Tarakan	2	11	16	89
Bandung	3	18	14	82
Bogor	7	22	25	78
Mataram	1	2	43	98
Bima	7	17	34	83
Sumbawa	21	54	18	46

City	SRQ-20			
	Score <6		Score ≥ 6	
	N	%	N	%
Ruteng	0	0	18	100
Labuan Bajo	2	14	12	86
Sumba Barat Daya	10	63	6	38
Kupang	14	27	38	73
Soe	7	30	16	70
Makassar	15	35	28	65
Ternate	13	43	17	57
Ambon	4	19	17	81
Jayapura	16	55	13	45
Manokwari	19	90	2	10
Jakarta	25	44	32	56
Yogyakarta	4	15	23	85
Merauke	9	53	8	47
Banten	24	53	21	47

Based on Table 3, the analysis of relationship betwen sociodemographic and mental health problems revealed no significant result statistically for all characteristics except for gender (p<0.001). Age, education, working status, and marital status were not significantly associated with mental health problems outcome in deaf individuals.

Table 3. Sociodemographic Bivariate Analysis with Mental Health Problems (SRQ-20)

Characteristics	SRQ-20				
	<6		≥ 6		
	N (203)	%	N (401)	%	p-value
Gender					
Male	113	55.7	160	39.9	**<0.001***
Female	90	44.3	241	60.1	
Age					
<45	176	86.7	355	88.5	0.515
≥45	27	13.3	46	11.5	
Education					
No education – Middle School	47	23.2	122	30.4	0.06
High School – College	156	76.8	279	69.6	
Working status					
Work	139	68.5	286	71.3	0.469
Does not work	64	31.5	115	28.7	
Marital status					
Not Married	125	61.6	270	67.3	0.16
Married	78	38.4	131	32.7	

Analysis using chi-square
*Has a significant impact (p-value < 0.05)

There are more females and males in this study which is a similar situation in many other studies regarding deaf and mental health outcomes (Ammons et al., 2020, Barnett et al., 2017, Belk et al., 2016). This might be related to the fact that more women are more likely to report symptoms of mental problems and also reporting poorer mental and physical health outcomes compare to men. Among all sociodemographic factors, only gender is significantly related to mental health problems. The finding is similar to another study in 2021 which reported that overall prevalence rate of anxiety/depression is higher in women compare to men, but men reported more physical symptoms (Kushalnagar 2019). This may indicate that women tend to report more psychological symptoms because they are more comfortable in seeking help and discussing their feelings compare to men. Age as a factor in relation to mental health problems did not prove to be significant in this study. This might be due to the fact that more deaf adults in numbers have mental problems compared to adolescent or elderly people who have much smaller numbers in participation. Adults in general will most likely report mental problems because the onset of mental problems usually begin in adulthood. Level of education, working status and marital status did not prove to be significantly related to mental problems in this study. Several studies in the past on deaf subjects have shown different findings to this study such as higher educational level will have higher psychological well-being compare with lower educational level (Peñacoba et al., 2020), those who are not employed have significantly lower mental health well-being compared to those who work (Rogers et al., 2018), and those who are married have higher incidence of mental problems (Çağan & Ünsal 2014). The differences in our study and the past studies may be due to varying subset of deaf populations and different tools used to evaluate mental problems.

This study found a higher prevalence of mental health problems among deaf individuals (66.4%), including anxiety and depression, compared with previous international studies, which reported rates of 24.9% (Kushalnagar et al., 2019) and 33.8%. The prevalence observed in this study is also substantially higher than that of the general Indonesian population, including reported rates of 23.14% for depression (Simanjuntak, 2022), 57.1% for anxiety, and 26.5% for depression (Nurrezki & Irawan, 2020). These differences may be attributed to limited access to mental health services, communication barriers, and a lack of mental health knowledge within the deaf community (Fellinger et al., 2012). In Indonesia, challenges in sign language communication, particularly within mental health services largely provided by hearing professionals, may restrict awareness, understanding, and appropriate care for deaf individuals. Limited understanding of deaf culture, stigma from hearing society (including health professionals), underfunded mental health services, and a shortage of trained professionals further contribute to these disparities. Consistent with previous research, this study demonstrates a higher prevalence of mental health problems among deaf individuals compared to the hearing population.

High prevalence rates were observed across multiple study sites, with 14 of the 20 cities reporting mental health problems in more than 50% of deaf participants. This geographic pattern likely reflects systemic barriers identified in this study, including limited access to mental health services, shortages of trained clinicians, and persistent communication challenges between deaf individuals and predominantly hearing health professionals. Additionally, stigma surrounding mental health remains prevalent and may further discourage help-seeking. The absence of clear national or local regulations mandating the provision of sign language or qualified interpreters in health care settings, particularly in mental health services, places responsibility on individual facilities to develop their own policies. As a result, current service provision may inadequately meet the mental health needs of the deaf population.

There are limitations this study. Consecutive sampling may not accurately represent deaf populations in Indonesia. SRQ-20 as a tool only assess mental problems in general (combining symptoms of depression and anxiety) and not specifically identify mental health issues in a separate

instrument such for depression, anxiety, psychosis, mania, and others mental problems/disorder which may also be encountered in deaf individuals. As recommendations, further studies should add or use different research method possibly to explore themes or reasoning behind issues of mental health in deaf, and to use different instrument to address specific mental problems, and also develop sign language friendly tools/instrument in research for deaf communities.

CONCLUSION

This study found that gender was the only sociodemographic factor significantly associated with mental health problems among deaf participants, as measured by the SRQ-20, with no associations observed for other variables; notably, a high prevalence of 66.4% was identified, exceeding rates in the hearing population and varying across cities, which underscores the urgent need to prioritize mental health for Indonesia's deaf community. These results emphasize developing national and local policies for equitable access to sign language-accessible mental health services, including mandatory interpreters, targeted training for professionals on deaf culture, community-based promotion and early screening in sign language, strengthened infrastructure, stigma reduction, and collaboration among government, health services, and deaf organizations like Gerkatin to achieve "mental health for all." For future research, longitudinal studies could explore causal pathways between gender, other evolving sociodemographic factors, and mental health outcomes in this population, while evaluating the effectiveness of implemented interventions.

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Keywords: Deaf; Mental health problems; Anxiety or depression; SRQ-20.

INTRODUCTION

Mental health may affect an individual's daily functioning and productivity, especially among those with symptoms of mental problems or disorders that require further medical help (Connell et al., 2012; Henderson et al., 2011). Symptoms of anxiety and depression are commonly found in the general population. Basic Health Research *(Riset Kesehatan Dasar)* in 2018 showed a prevalence of 9.8% for mental health problems in the Indonesian population (Indonesia Health Ministry, 2018). The prevalence of anxiety is reported to be 32.74%, and that of depression is 37.4% (Lu et al., 2023).

The deaf community experiences mental health problems that may be contributed to by their hearing impairment. Sensory disability in deaf individuals may lead to challenges in fulfilling their rights as expected in the general population, thus resulting in health problems, specifically mental health issues (Bodsworth et al., 2011; Kuenburg et al., 2016). Research abroad has shown higher prevalence rates of anxiety and depression among deaf people compared to the hearing population (Rogers et al., 2024). Other studies report similar findings, including for deaf children and adolescents (Khalid et al., 2025) and deaf elderly. The prevalence of mental problems among deaf individuals is 25% compared

to 20% in the hearing population (Kushalnagar et al., 2019). Contributing factors to mental health in the deaf community may be complex and varied, covering issues of access and communication with health care and health workers (Emond et al., 2015). Factors such as gender, level of education, work status, and age may contribute to the deaf community's health status, especially mental health status.

Currently, there is no research in Indonesia examining mental health problems or disorders within the deaf community. No published national data exist on mental health issues among deaf individuals, highlighting a critical need for scientific evidence (Rogers et al., 2024). Such data are essential for the deaf community, mental health professionals, and government stakeholders, particularly to increase awareness, improve regulations, and promote accessible mental health care. At present, available information is derived solely from international studies and publications. This study aims to be the first in Indonesia to determine the prevalence of mental health problems in the deaf community and to examine the sociodemographic factors associated with these problems.

METHOD

This research was an observational analytic study with a cross-sectional design to determine the relationship between sociodemographic factors and mental health problems in the deaf community. The sample was recruited from deaf communities in several cities in Indonesia under the Indonesian Association for the Welfare of the Deaf or *Gerakan untuk Kesejahteraan Tunarungu Indonesia (Gerkatin)*. The study took place in several provinces in Indonesia where Gerkatin branches were located. The sample size was 604 participants who met the inclusion criteria: deaf subjects who consented to participate (by signing informed consent), were able to read, write, and understand sign language, and were aged 15 years or older. The exclusion criteria were illiteracy, aggression and uncooperativeness, and unwillingness to participate in the study. The sample was selected using a consecutive sampling technique, with researchers including all participants who met the inclusion and exclusion criteria.

Data were collected in each of 20 cities with Gerkatin members, starting with sociodemographic data, which included gender, age, level of education, working status, and marital status. Data collection was completed within two months after the research team visited each city. Participants who consented to the study completed the Self-Reporting Questionnaire-20 (*SRQ-20*). The *SRQ-20* is a questionnaire developed by the World Health Organization (WHO) to assess psychopathology or mental problems (such as anxiety and depression) and is completed individually by participants. It consists of 20 questions or statements with "yes" or "no" response options. Each "yes" answer receives a score of 1, and each "no" answer receives a score of 0. The questionnaire assesses signs or symptoms of anxiety and depression experienced in the past 30 days. The minimum *SRQ-20* score is 1, and the maximum is 20. A cutoff score of ≥6 indicates that the participant had mental health problems or was experiencing symptoms of depression or anxiety. The time required to complete the questionnaire ranged from five to ten minutes. The *SRQ-20* has also been used for research purposes in Indonesia, including *Riset Kesehatan Dasar* (Indonesia Health Ministry).

Data analysis for univariate data involved frequency distributions for sociodemographic data and *SRQ-20* score interpretation. All categorical variables were analyzed using frequency (*n*) and percentage (%). Bivariate analysis was used to determine the relationship between sociodemographic data and *SRQ-20* interpretation of mental health problems using the chi-square test, with $p < 0.05$ indicating statistically significant results.

RESULTS AND DISCUSSION

Sociodemographic data or general characteristics of study participants are presented in Table 1. A total of 604 respondents have participated in the study with 273 (45.2%) male and 331 (54.8%)

female. Most participants are within the age 18-60 years old (94.2%). Majority of respondents have finished high school education (57.6%). In this study, it was also found that most of them (46.2%) have non-formal work. Out of 604 participants in the study, 401 (66.4%) experienced mental health problems such as depression and anxiety while 203 of them (33.6%) did not experience mental problems.

Table 1. General characteristics

Characteristics	N (604)	%
Gender		
Male	273	45.2
Female	331	54.8
Age		
<18	27	4.5
18-60	569	94.2
>60	8	1.3
Education		
No education	33	5.5
Elementary	61	10.1
Middle School	75	12.4
High School	348	57.6
College	87	14.4
Work Status		
Formal	146	24.2
Non-formal	279	46.2
No work	179	29.6
Marital Status		
Not married	378	62.6
Married	209	34.6
Divorce	17	2.8
SRQ		
<6	203	33.6
≥6	401	66.4

Based on table 2, 14 out of 20 cities visited for the purpose of the study were reported to have more than 50% respondents with SRQ-20 score ≥ 6. Ruteng reported 100 % respondents with mental health problems followed by Mataram with 98% and Tarakan 89%. The lowest reported respondents was in Manokwari with 10% followed Sumba Barat Daya with 38%.

Table 2. SRQ-20 score in 20 cities

City	SRQ-20			
	Score <6		Score ≥ 6	
	N	%	N	%
Tarakan	2	11	16	89
Bandung	3	18	14	82
Bogor	7	22	25	78
Mataram	1	2	43	98
Bima	7	17	34	83
Sumbawa	21	54	18	46

City	SRQ-20			
	Score <6		Score ≥ 6	
	N	%	N	%
Ruteng	0	0	18	100
Labuan Bajo	2	14	12	86
Sumba Barat Daya	10	63	6	38
Kupang	14	27	38	73
Soe	7	30	16	70
Makassar	15	35	28	65
Ternate	13	43	17	57
Ambon	4	19	17	81
Jayapura	16	55	13	45
Manokwari	19	90	2	10
Jakarta	25	44	32	56
Yogyakarta	4	15	23	85
Merauke	9	53	8	47
Banten	24	53	21	47

Based on Table 3, the analysis of relationship betwen sociodemographic and mental health problems revealed no significant result statistically for all characteristics except for gender (p<0.001). Age, education, working status, and marital status were not significantly associated with mental health problems outcome in deaf individuals.

Table 3. Sociodemographic Bivariate Analysis with Mental Health Problems (SRQ-20)

Characteristics	SRQ-20				
	<6		≥ 6		
	N (203)	%	N (401)	%	p-value
Gender					
Male	113	55.7	160	39.9	**<0.001***
Female	90	44.3	241	60.1	
Age					
<45	176	86.7	355	88.5	0.515
≥45	27	13.3	46	11.5	
Education					
No education – Middle School	47	23.2	122	30.4	0.06
High School – College	156	76.8	279	69.6	
Working status					
Work	139	68.5	286	71.3	0.469
Does not work	64	31.5	115	28.7	
Marital status					
Not Married	125	61.6	270	67.3	0.16
Married	78	38.4	131	32.7	

Analysis using chi-square
*Has a significant impact (p-value < 0.05)

There are more females and males in this study which is a similar situation in many other studies regarding deaf and mental health outcomes (Ammons et al., 2020, Barnett et al., 2017, Belk et al., 2016). This might be related to the fact that more women are more likely to report symptoms of mental problems and also reporting poorer mental and physical health outcomes compare to men. Among all sociodemographic factors, only gender is significantly related to mental health problems. The finding is similar to another study in 2021 which reported that overall prevalence rate of anxiety/depression is higher in women compare to men, but men reported more physical symptoms (Kushalnagar 2019). This may indicate that women tend to report more psychological symptoms because they are more comfortable in seeking help and discussing their feelings compare to men. Age as a factor in relation to mental health problems did not prove to be significant in this study. This might be due to the fact that more deaf adults in numbers have mental problems compared to adolescent or elderly people who have much smaller numbers in participation. Adults in general will most likely report mental problems because the onset of mental problems usually begin in adulthood. Level of education, working status and marital status did not prove to be significantly related to mental problems in this study. Several studies in the past on deaf subjects have shown different findings to this study such as higher educational level will have higher psychological well-being compare with lower educational level (Peñacoba et al., 2020), those who are not employed have significantly lower mental health well-being compared to those who work (Rogers et al., 2018), and those who are married have higher incidence of mental problems (Çağan & Ünsal 2014). The differences in our study and the past studies may be due to varying subset of deaf populations and different tools used to evaluate mental problems.

This study found a higher prevalence of mental health problems among deaf individuals (66.4%), including anxiety and depression, compared with previous international studies, which reported rates of 24.9% (Kushalnagar et al., 2019) and 33.8%. The prevalence observed in this study is also substantially higher than that of the general Indonesian population, including reported rates of 23.14% for depression (Simanjuntak, 2022), 57.1% for anxiety, and 26.5% for depression (Nurrezki & Irawan, 2020). These differences may be attributed to limited access to mental health services, communication barriers, and a lack of mental health knowledge within the deaf community (Fellinger et al., 2012). In Indonesia, challenges in sign language communication, particularly within mental health services largely provided by hearing professionals, may restrict awareness, understanding, and appropriate care for deaf individuals. Limited understanding of deaf culture, stigma from hearing society (including health professionals), underfunded mental health services, and a shortage of trained professionals further contribute to these disparities. Consistent with previous research, this study demonstrates a higher prevalence of mental health problems among deaf individuals compared to the hearing population.

High prevalence rates were observed across multiple study sites, with 14 of the 20 cities reporting mental health problems in more than 50% of deaf participants. This geographic pattern likely reflects systemic barriers identified in this study, including limited access to mental health services, shortages of trained clinicians, and persistent communication challenges between deaf individuals and predominantly hearing health professionals. Additionally, stigma surrounding mental health remains prevalent and may further discourage help-seeking. The absence of clear national or local regulations mandating the provision of sign language or qualified interpreters in health care settings, particularly in mental health services, places responsibility on individual facilities to develop their own policies. As a result, current service provision may inadequately meet the mental health needs of the deaf population.

There are limitations this study. Consecutive sampling may not accurately represent deaf populations in Indonesia. SRQ-20 as a tool only assess mental problems in general (combining symptoms of depression and anxiety) and not specifically identify mental health issues in a separate

instrument such for depression, anxiety, psychosis, mania, and others mental problems/disorder which may also be encountered in deaf individuals. As recommendations, further studies should add or use different research method possibly to explore themes or reasoning behind issues of mental health in deaf, and to use different instrument to address specific mental problems, and also develop sign language friendly tools/instrument in research for deaf communities.

CONCLUSION

This study found that gender was the only sociodemographic factor significantly associated with mental health problems among deaf participants, as measured by the SRQ-20, with no associations observed for other variables; notably, a high prevalence of 66.4% was identified, exceeding rates in the hearing population and varying across cities, which underscores the urgent need to prioritize mental health for Indonesia's deaf community. These results emphasize developing national and local policies for equitable access to sign language-accessible mental health services, including mandatory interpreters, targeted training for professionals on deaf culture, community-based promotion and early screening in sign language, strengthened infrastructure, stigma reduction, and collaboration among government, health services, and deaf organizations like Gerkatin to achieve "mental health for all." For future research, longitudinal studies could explore causal pathways between gender, other evolving sociodemographic factors, and mental health outcomes in this population, while evaluating the effectiveness of implemented interventions.

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