

[ISSN 2597- 6052](#)**MPPKI****Media Publikasi Promosi Kesehatan Indonesia**
*The Indonesian Journal of Health Promotion***Research Articles****Open Access*****Pregnant Women's Quality of Life During the Covid-19 Pandemic: An Example from Makassar, Indonesia*****Kualitas Hidup Ibu Hamil di Masa Pandemi Covid-19: Studi Kasus Kota Makassar, Indonesia**Citrakesumasari¹, Muhammad Rachmat^{2*}, Rahmatsah Said³, Elvita Bellani⁴, Sitti Andriani Anwar⁵¹Nutrition Science Study Program, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia²Department of Health Promotion and Behavioral Sciences, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia³DPC IPeKB Kota Makassar⁴Department of Psychology, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia⁵Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia*Korespondensi Penulis: rachmat.muh@unhas.ac.id**Abstract**

Pregnancy is a period of considerable mental and physical changes that affect the quality of life, even without complications. During the Covid-19 pandemic, reports on maternity care services are still limited. This study aims to determine the effect of the Covid-19 pandemic on the physical and psychological health status of pregnant women. In addition, it also provides data on the potential risks of food insecurity that still exist, especially in developing countries. A total of 65 pregnant women participated in this study. The survey was distributed online via Google form during one month using convenience sampling (non-probability sampling) with a cross sectional design. Data was collected through two questionnaires, from World Health Organization Quality of Life (WHOQOL-BREF) and Consumption Behavior of Pregnant Women. The results showed that the respondents had a good quality of life (56.9%) as stated in the WHOQOL-BREF. Most of the respondents were in good category in terms of physical (90.8%), psychological (70.8%), social relations (61.5%), and environmental domains (90.8%). However, 4.6% were in the poor category in relation to the general quality of life. Regarding the perceived health status, about half of the respondents were satisfied with the individual's health during the pandemic, while 3.0% and 10.8% were highly satisfied and dissatisfied, respectively. It is recommended that pregnant women be screened for household food security status and quality of life during prenatal care which includes policy making, resource allocation, and appropriate service delivery with the aim of ensuring pregnant women's access to high quality food and a good quality of life.

Keywords: *Pandemic; Life Quality; Pregnancy; Food Consumption***Abstrak**

Kehamilan adalah periode perubahan mental dan fisik yang cukup besar yang mempengaruhi kualitas hidup, bahkan tanpa komplikasi. Selama pandemi Covid-19, laporan tentang perawatan pelayanan kehamilan masih terbatas. Penelitian ini bertujuan untuk mengetahui pengaruh pandemi Covid-19 terhadap status kesehatan fisik dan psikologis ibu hamil. Selain itu juga menyediakan data tentang potensi risiko kerawanan pangan yang masih ada terutama di negara berkembang. Sebanyak 65 wanita hamil berpartisipasi dalam penelitian ini. Survei dibagikan secara online melalui Google form selama satu bulan menggunakan *convenience sampling (non-probability sampling)* dengan desain *cross sectional*. Pengumpulan data dilakukan melalui dua kuesioner yaitu *World Health Organization Quality of Life (WHOQOL-BREF)* dan *Perilaku Konsumsi Ibu Hamil*. Hasil penelitian menunjukkan bahwa responden memiliki kualitas hidup yang baik (56,9%) sebagaimana dinyatakan dalam WHOQOL-BREF. Sebagian besar responden dalam kategori baik dalam hal fisik (90,8%), psikologis (70,8%), hubungan sosial (61,5%), dan domain lingkungan (90,8%). Namun, 4,6% berada dalam kategori buruk dalam kaitannya dengan kualitas hidup secara umum. Mengenai status kesehatan yang dirasakan, sekitar setengah dari responden puas dengan kesehatan individu selama pandemi, sementara 3,0% dan 10,8% masing-masing sangat puas dan tidak puas. Direkomendasikan agar ibu hamil diskriminasi untuk status ketahanan pangan rumah tangga dan kualitas hidup selama perawatan pelayanan prenatal yang mencakup pembuatan kebijakan, alokasi sumber daya, dan pemberian layanan yang tepat dengan tujuan menjamin akses ibu hamil untuk makanan berkualitas tinggi dan kehidupan yang kualitas baik.

Kata Kunci: Pandemi; Kualitas Hidup; Kehamilan; Konsumsi Makanan

BACKGROUND

The World Health Organization defines quality of life (QOL) as individual's perception of life in the context of the culture and value systems, and in relation to the goals, expectations, standards, and concerns (1). It is a very broad concept and can be influenced in a complex manner by the subject's physical health, psychological state and level of independence, as well as social relationships and important aspects of the environment (2). Therefore, quality of life is measured objectively in relation to environmental and living conditions, as well as subjectively in relation to personal environment, and measured in terms of satisfaction and well-being (3).

Pregnancy is a period of considerable mental and physical change which affects quality of life, even without any complications (3). These changes not only affects the mother, but also the baby postpartum health and psychomotor improvement (4). Therefore, health professionals in prenatal care increased patient health and satisfaction with regard to the experiences during preconception and pregnancy (5). Furthermore, the traditional use of objective measure such as mortality and morbidity were also employed (6). These measures are important, but not sufficient because public health services are not only limited to saving life, but to also improve personal satisfaction (7)(8).

During the Covid-19 pandemic, there were limited reports on pregnancy care because majority of the studies focused on the effect of Covid-19 infection on women. However, two systematic reviews were conducted on Covid-19 infection prevalence in pregnant women. Besides, in a recent systematic review, data from 108 pregnancies collected between 8 December 2019 and 1 April 2020, showed that three patients were admitted to the maternal emergency unit with no detailed maternal passings (9-10). Meanwhile, one neonatal passing was recorded and six were admitted to the emergency unit. The apparently extreme pregnancy and neonatal confusions during the Coronavirus pandemic were majorly due to preterm birth and complexities of cesarean section (being the predominant option). Moreover, a new survey which covered an aggregate of 324 pregnant women with Coronavirus recorded seven maternal passings (11)(12).

Pregnant women in developed countries with efficient medical care frameworks suffer greatly from vulnerability to diseases which affects both the mother and child, meanwhile, nervousness caused by segregation and restricted quantities of birth chaperons are the major challenges in agricultural countries during the pandemic (13-15). Despite the lack of information, reports from a few countries show an increase in cases of abusive behavior in homes since the Coronavirus outbreak. For instance, the number of comparative cases reported to a police headquarters in Jingzhou, a city in China's Hubei Region, significantly increased in February 2020 compared to a similar period in the previous year (16). Therefore, this study aims to investigate pregnant women's quality of life during the Covid-19 pandemic in Makassar, Indonesia. There are limited evidence on the quality of life of women during Covid-19 pandemic and its relation to nutritional status. Meanwhile, these data are important because it provide evidence regarding health status of pregnant women both physically and psychologically. In addition, this study also provide data on the potential risk of food insecurity which still exist particularly in developing countries.

METHODS

Participants

A total of 65 pregnant women participated in this study. This study and sampling is took one month to complete by convenience sampling (non-probability sampling). The survey was transferred and shared on Google during the online review stage. Meanwhile, reactions were saved simply by tapping on the "submit" button. The participants indicated individual intentions to partake in the investigation. Furthermore, the participants were requested to be honest in the responses. Aside the scale used to measure variables in this study, the sociodemographic data were also collected including maternal and gestational age, pregnancy characteristics, education level, marriage, occupation, consumption patterns and quality of life.

Data collection

This study was conducted using a cross-sectional design. Moreover, data were collected via two questionnaires, namely WHOQOL-BREF and Maternal Consumption behavior during pregnancy. In WHOQOL-BREF, the questionnaire was validated in two stages by two persons namely changing language translations and filtering word meanings to make participant understand the questions.

Location

The data were collected from several districts in the city of Makassar, South Sulawesi, Indonesia.

Data analysis

For the variables examined, descriptive statistics were calculated, and information was conveyed as n and percent for categorical variables. Furthermore, the association of food consumption with four domain of quality life variable was determined using Fisher's exact test. All measures were given a 0.05 significance level, and statistical analysis was done with SPSS.

RESULTS**Table 1:** Distribution of Respondent by Sociodemographic Characteristics

Characteristics	n	%
Health Insurance		
BPJS (National Health Insurance)	50	76.9
Private health insurance	5	7.7
None	10	15.4
Body Mass Index		
Underweight	8	12.3
Normal	45	69.2
Overweight	8	12.3
Obese	4	6.2
Contraception Type		
Implant	8	12.3
Intrauterine device	1	1.5
Condom	10	15.4
Contraception injection	11	16.9
None	35	53.8
Medical Facility		
Private clinic	6	9.2
Midwives	7	10.8
Public health center	25	38.5
Hospital	19	29.2
None	8	12.3
Occupation		
Housewife	42	64.6
Government employees	6	9.2
Private employee	8	12.3
Self employed	1	1.6
Others	8	12.3
Education		
Primary education	5	7.7
Junior High school	7	10.8
Senior high school	17	26.1
University/college	36	55.4
Number of Children		
≥2 children	40	61.5
<2 children	5	7.7
None	20	30.8
Supplemental Food		
Yes	13	20.0
No	52	80.0

Tetanus Toxoid Intake		
Yes	37	56.9
No	28	43.1
Vegetable Protein Consumption		
Yes	61	93.8
No	4	6.2
Animal Protein Consumption		
Yes	63	96.9
No	2	3.1
Vegetable Consumption		
Yes	55	84.6
No	10	15.4
Fruit Consumption		
Yes	57	87.7
No	8	12.3
Snack Consumption		
Yes	53	81.5
No	12	18.5
Supplement Consumption		
Yes	40	61.5
No	25	38.5
Milk Consumption		
Yes	34	52.3
No	31	47.7

Table 1 shows that majority of the respondents have BPJS type insurance (76.9%), normal BMI status (69.2%), do not use contraception (53.8%) and choose public health center as health facilities for pregnancy care (38.5%). In addition, regarding number of children, majority of the respondents had more than 2 (61.5%), while more than half are university graduates (55.4%) and homemaker (64.6%).

Regarding additional nutrition, 20% received supplemental food, while 61.5% and 52.3% consumed supplement and milk respectively. In terms of dietary intake, majority of the respondent consume plant (96.9%) and animal protein (93.8%). Moreover, majority also consume vegetable (84.6%) and fruit (87.7%), while 56.9% received tetanus toxoid.

Table 2: Frequency Distribution for General Quality of Life and Health Satisfaction

Variable	n	%
General Quality of Life		
Bad	3	4.6
Fair	22	33.9
Good	37	56.9
Very good	3	4.6
General Health Satisfaction		
Unsatisfied	7	10.8
Neutral	23	35.4
Satisfied	33	50.8
Very satisfied	2	3.0

Table 2 shows that majority of the respondents have good quality of life (56.9%) while 4.6% were in the bad category. Regarding the perceived health status, approximately half were satisfied with individual health during the pandemic, while 3.0% and 10.8% were very satisfied and unsatisfied respectively.

Table 3: Frequency Distribution of Quality of Life in Physical, Psychological, Social, and Environmental Domain

Domain Quality of Life	n	%
Physical Health		
Bad	6	9.2
Good	59	90.8
Psychology		
Bad	19	29.2
Good	46	70.8
Social Relationship		
Bad	25	38.5
Good	40	61.5
Environment		
Bad	6	9.2
Good	59	90.8

Table 3 shows quality of life in four domains as stated in WHO QOL-BREF. Majority of the respondent were in the good category in terms of physical (90.8%), psychological (70.8%), social relationship (61.5%) and environmental domain (90.8%).

Table 4: Association of Food Consumption with Quality of Life in the Physical and Psychological Domain

Characteristics	Domain category n=65 (%)		p-value
	Good	Bad	
Physical			
Milk Consumption			
Yes	88.2	11.8	0.674
No	93.5	6.5	
Supplement Consumption			
Yes	92.5	7.5	0.515
No	88	12	
Snacks Habit			
Yes	94.3	5.7	0.388
No	75	25	
Fruit Consumption			
Yes	91.2	8.8	0.754
No	87.5	12.5	
Vegetable Consumption			
Yes	92.7	7.3	0.637
No	80.0	20.0	
Animal Protein Consumption			
Yes	90.8	9.2	1.000
No	100	0	
Psychological			
Milk Consumption			
Yes	73.5	26.5	0.474
No	67.7	32.3	
Supplement Consumption			
Yes	75	25	0.288
No	64	36	
Snacks Habit			
Yes	73.7	26.3	0.286
No	66.7	33.3	

Fruit Consumption			
Yes	68.5	31.5	0.371
No	87.5	12.5	
Vegetable Consumption			
Yes	90	10	0.258
No	67.3	32.7	
Animal Protein Consumption			
Yes	71.4	28.6	0.505
No	50	50	

Table 5: Association of Food Consumption with Quality of Life in the Social and Environmental Domain

Characteristics	Domain category n=65 (%)		p-value
	Good	Bad	
	Social		
Milk Consumption			
Yes	67.6	32.4	0.779
No	54.8	45.2	
Supplement Consumption			
Yes	65	35	0.408
No	56	44	
Snacks Habit			
Yes	66.7	33.3	0.818
No	60.4	39.6	
Fruit Consumption			
Yes	59.6	40.4	0.378
No	75	25	
Vegetable Consumption			
Yes	60	40	0.374
No	70	30	
Animal Protein Consumption			
Yes	60.7	39.3	0.984
No	100	0	
	Environmental		
Milk Consumption			
Yes	94.1	5.9	0.207
No	87.1	12.9	
Supplement Consumption			
Yes	90	10	0.519
No	92	8	
Snacks Habit			
Yes	92.5	7.5	0.521
No	83.3	16.7	
Fruit Consumption			
Yes	91.2	8.8	0.456
No	87.5	12.5	
Vegetable Consumption			
Yes	90.9	9.1	0.442
No	90	10	
Animal Protein Consumption			
Yes	91.8	8.2	0.323
No	66.7	33.3	

Although in Tables 4 and 5 it does not show a significance of $p < 0.005$. But in the physical domain that can be highlighted are those who consume health supplements, have a snacking habit, consume fruits and vegetables in the good physical category, around 90%. This is the same as the environmental domain, namely those who consume health supplements, have a snacking habit, consume fruits and vegetables and animal protein in the good category, around 90%.

Table 6: Types of Food Most Consumed

Characteristics	Frequency (%)
Snacks	
Biscuits	60
Chips	30
Pastry	10
Vegetable	
Spinach	55
Water spinach	30
Mustard greens	15
Animal Protein	
Chicken	50
Fish	30
Egg	20
Plant Protein	
Tofu	40
Tempe	40
Green beans	20

The Table 6 provides information of the five most consumption during pregnancy, snacks food listed biscuits about 60% as the highest, in vegetable category there is spinach as the majority consuming of 55% and animal protein is chicken 50% meanwhile the plant protein got two same type of food which are tofu and tempe about 40%.

DISCUSSION

Majority of the respondents have good quality of life (56.9%) as indicated in four domain of WHOQOL-BREF. Furthermore, majority were in good category in terms of physical (90.8%), psychological (70.8%), social relationship (61.5%) and environmental domain (90.8%) despite the imposed social distancing. The variable of social domain shows lower than the other variable due to the pandemic As a result, a remarkable condition emerged in which the vast majority of the world's population was confined to their houses, with only health workers and other critical employees permitted to go on a regular basis. Several investigations of prior quarantine events have found that physical and social seclusion can trigger psychological stress reactions (21). This distinction is important because a person can have the subjective experience of being isolated even when they have frequent contact with other people and conversely they may not feel isolated even when their contact with others is limited (22).

Adequate nutritional intake during pregnancy is an important factor for a healthy pregnancy and successful delivery (23). A previous study reported that nutritional deficiencies during gestation leads to provision of suboptimal micro and macro nutrients for the fetus, which culminates to inadequate intrauterine growth and development, congenital abnormalities, preterm birth, and pregnancy complications (23-25). The results in this study indicate that the nutritional behavior of pregnant women is significantly associated with healthier food choices, including frequent consumption of chicken, healthy vitamins and mineral supplements. This appears to be related to the education level of respondents which were mostly university graduates (55.4%) to choose healthy food particularly fruit, vegetables, supplements, milk and nuts such as tempe and tofu as well as other protein sources from fish and chicken meat. Meanwhile, this result is consistent with other studies which reported that highly educated people exhibit significantly better nutritional knowledge and consumption behavior (26-30). This is because highly educated people often make better use of educational materials such as newspapers, books, internet and academic resources in their daily lives. However, the results in this study show that there is no food insecurity in the respondents' food consumption, hence, the quality of life is generally in the good category.

Furthermore, those who take health supplements, snack often, and eat fruits and vegetables fall into the excellent physical group, accounting for about 90% of the population. This is the same as the environmental domain, with individuals who take health supplements, snack often, eat fruits and vegetables, and eat animal protein into the excellent category (about 90%) proof that there is no insecurity food from the respondents. On the other research explain that Food insecurity in the home can have a significant impact on women's health, particularly during pregnancy (31). Nutritional status during pregnancy not only affects women's and newborns' present health, but also has a significant impact on the health of children and people in the future. Food poverty and scarcity are linked to women's poor general, mental, and physical health (32). Food insecurity was linked to poor mental health in women in a research conducted in the United States (31). In a dose-response relationship, mental symptoms such as sadness, stress, and anxiety were linked to family food insecurity and worsened with deteriorating food insecurity status (33). In addition, household food insecurity has been linked to a reduction in quality of life (QoL) (34).

CONCLUSION

Based on the results, the respondents have good quality of life (56.9%) according to WHOQOL-BREF. Majority of the respondents were in good category in terms of physical (90.8%), psychological (70.8%), social relationship (61.5%) and environmental domain (90.8%), while 4.6% were in the bad category. Furthermore, regarding health status perception, approximately half were satisfied with individual health during the pandemic, while 3.0% and 10.8% were very satisfied and generally unsatisfied respectively. It is recommended that pregnant women be screened for household food security status during main prenatal care in order to identify those who are at high risk of food insecurity. It is recommended that food supplement rations or food coupons be provided to pregnant women who are food insecure. Improving nutritional status, particularly during pregnancy, necessitates a multi-level approach that includes policymaking, resource allocation, and proper service delivery with the goal of guaranteeing pregnant women's access to a variety of high-quality meals.

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