Demographic Characteristics as Predictors of Medicine and Health Services Access Difficulties and Economic Problems during Covid 19 in Java, Indonesia

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Abstract

Background. The very rapid spread of COVID-19 infection, causing large-scale social restriction in many parts of the world. A lot of businesses and working places closed. Health services and medicine were in high demand. **Objective.** This study aims to determine the demographic characteristics that predict medicine and health services access difficulties and economic problems. **Method.** This was cross-sectional research conducted in Java, Indonesia. The research sample was 1,385 individuals aged 15 years and over who lived in Java and had filled out a survey via a google form. Data analysis using multivariate logistic regression. **Results.** The risk of difficulty accessing medicine and health services and economic difficulties was higher for males, had income < 3 million per month, and do not have health insurance. **Conclusion.** Male, had low income, and do not have health insurance are at higher risk for having difficulty accessing medicines/ health services and experiencing economic difficulties. Meanwhile, respondents under 25 years of age have a higher risk of experiencing difficulties in accessing medicines and health services. The government needs to implement a strategy to reduce health and economic problems due to COVID-19 and pay attention to individuals under 25 years of age to access health services/medicines.

Keywords: *Covid-19, medicine and health services, economic difficulties*

Introduction

COVID-19 has spread widely in the world, at least in 216 countries and other territories with confirmed numbers of COVID-19 were 6.057.853 people and the number of deaths as many as 371,166 people as of June 1, 2020.[1,2] After almost 3 months of mass social distancing, on 1st June 2020, Indonesia entered the new phase of transition into new normal or called new habit adaptation.[3,4] A study showed timely control strategies using epidemiological measures in reducing social mixing, closely related to the outcomes of the COVID-19 epidemic.[5,6] Despite the epidemiological concern, Indonesia has to juggle with economical calculation when declaring transition into the new normal phase. It is explained why the relaxing distancing control measures took place in a time of the still-raising confirmatory person contracting COVID-19.

During the COVID-19 pandemic, a lot of businesses and working places closed, mainly in the informal work sector. This made people lost their job and impacted on financial income. The increase in unemployment, poor households, the problem of people's purchasing power, and the empowerment of micro, small and medium enterprises has become the focus of the Indonesian government. The vaccination program for certain age groups has begun to be carried out by the Indonesian government starting in early 2021, however, the economic sector in Indonesia has not shown significant progress.[7,8] COVID-19 and its countermeasures have caused economic shocks that have an impact on unemployment, poverty, economic crises, and health inequalities.[9,10] The government is faced with controlling the rate of cases and the economic situation to address health disparities and economic impacts due

to the COVID-19 pandemic.[11]

Research in several countries has identified mixed results for groups that are vulnerable to a more severe economic impact than for other groups. Economic health problems that arise due to COVID-19 are various, such as work and income problems[12], job losses and increased poverty [13], access to health services[14], inequality of health services between rural[13], and fulfillment of basic or daily necessities[14]. Identification of vulnerable groups is important so that interventions in dealing with the economic and health impacts of COVID-19 are right on target and according to needs. So far, no research has been found on demographic characteristics that are predictors of access to medicines and health services and economic difficulties due to COVID-19 in Java, Indonesia. Given the diversity of vulnerable groups affected and indicators of economic problems that arise in various countries, studies are still needed on predictors of access to medicines and health services and economic difficulties due to COVID-19. This study aims to determine the demographic characteristics that are predictors of access to medicines and health services and economic difficulties as well as community groups who need special attention related to access to medicines and health services and economic difficulties due to COVID-19 in Java, Indonesia.

Method

This research is a quantitative study with a cross-sectional design. The research sample is individuals aged 15 years and over who live in Java, Indonesia and have filled out a survey via google form which is distributed by the research team through various cellular networks and social media. The number of samples obtained was 1,385 people. The study was conducted from June - July 2020. The inclusion criteria included individuals aged 15-64 years, willing to be respondents, able to read and understand questions. This study aims to determine demographic characteristics that predict economic impacts and community groups that require special attention regarding the economic impact of COVID-19 in Java, Indonesia. The demographic variables including age, gender, education level, employment status, monthly income, and marital status. Economical difficulties including questions about decreased income, difficulty in meeting daily needs, health insurance ownership, and difficulty accessing medicine and health services. The age variable is categorized into 3 categories: ≤ 25 years old, 26-45 years old, and > 45 years old. Gender consists of males and females. The education level consists of 2 categories: high school and below and bachelor and above. Work status is divided into categories of health workers and non-health workers. Monthly income consists of 3 categories: < IDR 3 million, IDR 3-10 million, and > IDR 10 million. Marital status consists of the categories of non married and married. Statistical analysis used descriptive analysis and multivariate logistic regression using SPSS v.16.

Result

Respondent Characteristics

Table 1. Distribution of respondent characteristics

Characteristics	n (%)
Age groups	
≤ 25 years old	234 (16.9)
26 – 45 years old	876 (63.2)
>45 years old	275 (19.9)
Sex	

Cont... **Table 1. Distribution of respondent characteristics**

Male	360 (26.0)
Female	1.025 (74.0)
Education	
High school and below	191 (13.8)
Bachelor and above	1194 (86.2)
Marital status	
Non married	408 (29.5)
Married	977 (70.5)
Type of occupation	
General public	911 (65.8)
Health worker	474 (34.2)
Type of occupation	
Housewife	125 (9.0)
Student/college student	141 (10.2)
Employee	318 (23.0)
Government employee	498 (36.0)
Farmer/laborer/fisherman	10 (0.7)
Entrepreneur	78 (5.6)
Others	194 (14.0)
Income	
< IDR 3 million	593 (42.8)
IDR 3-10 million	630 (45.5)
>IDR 10 million	162 (11.7)
Health insurance	
No	218(15.7)
Yes	1167 (84.3)

The total number of respondents who filled out the questionnaire was 1415 people. A total of 30 people filled out the double questionnaire so that the remaining 1385 respondents could be processed. The majority of the sample were women (74.0%), aged 26-45 years (63.2%), married (70.5%), and highly educated (86.2%). Most of the respondent's occupations as a government employee (36.0%) with the type of occupation as non-health workers (65.8%), earn <10 million per month (45.5%), and do not have health insurance (84.3%). The next table presents a multivariate logistic regression test to describe demographic characteristics as predictors of access to medicines and health services and economic difficulties due to COVID-19 in Java, Indonesia.

Table 2. Multivariate logistic regression estimates for factors associated with the economic stressor

Variables (n=1.385)	Difficulty accessing medicines and health services	Difficulty in meeting daily needs	Decreased income	Losing job
Age groups				
≤ 25 years old (ref)				
26 – 45 years old	0.540 (0.330-0.884)*	1.088 (0.849-1.849)	1.185 (0.766-1.832)	1.198 (0.771-1.861)
>45 years old	0.335 (0.181-0.621)**	0.645 (0.372-1.119)	0.990 (0.608-1.612)	1.497 (0.906-2.473)
Sex				
Male	1.789 (1.294-2.474)***	1.754 (1.281-2.402)***	1.380 (1.056-1.805)*	1.216 (0.914-1.618)
Female (ref)				
Occupation				
General public	1.191 (0.855-1.659)	0.901 (0.666-1.219)	0.808 (0.630-1.035)	1.185 (0.898-1.564)
Health worker (ref)				
Education				
High school and below	1.083 (0.705-1.665)	2.233 (1.525-3.268)***	1.459 (0.971-2.192)	1.945 (1.343-2.816)***
Bachelor and above (ref)				
Marital status				
Non married	0.933 (0.611-1.425)	1.068 (0.735-1.551)	0.893 (0.644-1.239)	1.008 (0.712-1.427)

Cont... **Table 2. Multivariate logistic regression estimates for factors associated with the economic stressor**

Married (ref)				
Income				
< IDR 3 million	2.035 (1.128-3.672)*	5.069 (2.753-9.334)***	3.643 (2.429-5.463)***	2.444 (1.503-3.975)***
IDR 3-10 million	1.353 (0.772-2.374)	1.657 (0.908-3.025)	1.323 (0.928-1.886)	1.498 (0.946-2.372)
IDR > 10 million (ref)				
Health insurance				
No	1.446 (1.003-2.086)*	1.683 (1.201-2.360)*	1.639 (1.162-2.311)*	1.261 (0.909-1.750)
Yes (ref)				

* p<0.05, ** p<0.001, ***p<0.000

Logistic regression results showed that male (AOR 1.754; 95% CI: 1.281-2.402; p <0.000), had low education (AOR 2.233; 95% CI; 1.525-3.268; p <0.000), had income <3 million per month (AOR 5.069; 95% CI: 2.753-9.334; p <0.000), and do not have health insurance (AOR 1.683; 95% CI: 1.201-2.360; p <0.05) are more at risk of experiencing difficulties in meeting daily needs. Being male (AOR 1.380; 95% CI: 1.056-1.805; p<0.05), had income < 3 million per month (AOR 3.643; 95% CI: 2.429-5.463; p<0.000), and do not have health insurance (AOR 1.639; 95% CI: 1.162-2.311;p<0.05) are more at risk of experiencing decrease income. The risk of losing a job is higher for people with low education (AOR 1.945; 95% CI: 1.343-2.816; p<0.000) and had income < 3 million per month (AOR 2.444; 95% CI: 1.503-3.975; p<0.000).

The risk of difficulty accessing medicines and health services is higher for male (AOR 1.789; 95% CI: 1.294-2.474; p<0.000), had income < 3 million per month (AOR 2.035; 95% CI: 1.128-3.672; p<0.05), and do not have health insurance (AOR 1.446; 95% CI: 1.003-2.086; p<0.05). But, older age (26-45 years old), AOR 0.540 95% CI: 0.330-0.884, p<0.05; > 45 years old, AOR 0.335 95% CI: 0.181-0.621, p<0.001) become protective variable in facing difficulty accessing medicines and health services.

Discussion

This study found that the risk of accessing drugs and health services was higher for men, had income < IDR 3 million per month, and not having health insurance. The absence of health insurance generally occurs in low-income. Populations that are vulnerable to COVID-19, including those in low socioeconomic groups are at risk of difficulty accessing health care services.[15] Low-income families have 3 main barriers to accessing health care including lack of insurance coverage, poor access to health care facilities, and unaffordable costs.[16] The results of Shadmi's research in Zambia found that primary health services are free, but other costs must be borne by patients when accessing health services such as transportation costs, medicines, and diagnoses that cannot be carried out in health facilities that have the potential to continue to increase as the spread of

COVID-19 and poor households in urban and rural slum areas are the vulnerable groups to this financial risk.[17] In this study, older age (26-45 years old) and 45 years old and above become protective variables in facing difficulty accessing drugs and health services. Previous research has found that access of young adults to health services is lower. [18,19] The reasons that young people do not access health care include feeling unneeded[18], awareness of seeking treatment, structural weaknesses and existing care systems[19], or economic factors[20]. Different from the results of this study, Bambra's study found that lockdown policies had an impact on women's access to health care, such as preventive care against breast cancer or cervical cancer screening, which was restricted in European countries.[21]

This study found that male, had low education, had income < IDR 3 million per month, and do not have health insurance are more at risk of experiencing difficulties in meeting daily needs. lower-income earners are twice as likely to experience economic difficulties as those in the top income quintile.[22] Wolfson's research also found that households in the low-income, low-educated (not university) group, and who do not have health insurance are struggling to meet their basic needs because of COVID-19.[23] Karpman's study suggests that low-income people spend less on food, delay buying expensive goods, use up savings, or increase credit card debt at the start of the COVID-19 pandemic.[24] Power's research also found that people with low incomes employ complex food management and shopping strategies to maintain food security by buying goods at low prices, choosing local produce, shopping at multiple supermarkets for the cheapest items, and budgeting for the long term.[25] Sarma's survey in the United States found 6.3% of respondents were concerned about financial stability, 42.5% about jobs, 69.4% about food availability, 31.0% about housing stability, and 35.9% about access to health care due to COVID-19.[26]

This study found that male, had income < IDR 3 million per month, and do not have health insurance are more at risk of experiencing decreased income. Workers with a low level of education are much by their income than workers with secondary or higher education.[27] Adults with an income below the minimum wage are the group most affected by decreased income.[28] This study found the male gender to be a predictor of an increased risk of decreased income. Douglas stated differently that females are the group at risk of losing income because in general females are child caregivers and tend to lose income if they have to care for children while schools are closed.[29]

This study found that the risk of losing a job is higher for people with low education and had income < IDR 3 million per month. Low socioeconomic groups have a higher risk of losing their jobs during the COVID-19 pandemic.[30] An Aucejo's survey of a United States college found 40% of working students lost their jobs, internships, or job offers because of the COVID-19 pandemic.[31] Workers on fixed contracts, salaries, and fixed hours are less likely to be affected by COVID-19 than workers who have temporary contracts, are unpaid, and various work hours.[32]

Conclusion

The male gender with low income (<3 million per month), without health insurance are at higher risk for having difficulty accessing medicines and health services and experiencing economic difficulties. Meanwhile, respondents under 25 years of age have a higher risk of experiencing difficulties in accessing medicines and health services. This research identifies groups that need special attention because they are more economically affected and have difficulty accessing health due to the COVID-19 pandemic. The government needs to implement a strategy to reduce health and economic disparities because COVID-19 in male groups with low-income who do not have health insurance and pay attention to individuals under 25 years of age to access health services and medicines.

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