


BMJ Open Essential healthcare services during the COVID-19 pandemic: a cross-sectional study of community needs and perspectives in West Java, Indonesia

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ABSTRACTS

Objectives While issues in healthcare facilities during the COVID-19 pandemic have been widely discussed, little is known about health service issues from community (demand) sides. This study aimed to identify community needs in the utilisation of health services and highlight the key roles and barriers that community health workers (CHWs) face in delivering community-based services during the pandemic.

Design Cross-sectional study.

Setting 38 randomly selected villages covered by 21 preidentified community health centres in 3 districts in West Java, Indonesia. The survey was conducted from 22 January 2022 to 7 February 2022 (2 years after the pandemic began).

Participants 118 respondents, consisting of community leaders, vulnerable group representatives and CHWs.

Results Laboratory examination (55.1%), emergency care (52.5%), non-communicable disease screening (50%) and routine treatment (49.2%) were perceived as the highest unmet needs of essential healthcare services. Fear of infection (90.3%) became one main barrier to access healthcare services. Vulnerable populations including lower socioeconomic groups (61.2%), households with elderly (25.4%), persons with disabilities (25.4%), pregnant women, people with mental illness and people with lower education (26.9%) were reported facing difficulties in accessing healthcare services. Further, the pandemic was deemed to have significantly impacted the community economic situation (91.5%). CHWs were actively engaged in community-based services and were mentioned as the first contact when the community needed help (57.6%). CHWs reported essential needs on financial support (45.2%), logistics (54.8%) and protective equipment (22.6%).

Conclusions Essential health services for the community, including those belonging to vulnerable groups, were highly impacted during the pandemic. CHWs appear to have significant roles in delivering health services during this health crisis, hence, adequate support is needed to equip them in strengthening pandemic response.

INTRODUCTION

The COVID-19 pandemic presented unprecedented challenges for global public health

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Our study uses a valid and reliable instrument from the WHO to assess issues on essential healthcare service utilisations during the pandemic from the demand side (community).
- ⇒ The involvement of community health workers and vulnerable communities in our study provides comprehensive results to inform more inclusive policy recommendations for strengthening community resilience and future health crisis preparedness.
- ⇒ The purposive method to select the regions of the study sites limits the generalisability of our study results for the wider communities.
- ⇒ The dynamic situation of the COVID-19 pandemic in Indonesia limits the interpretation of the study results to the timeframe when the data collection was conducted (22 January 2022 to 7 February 2022).

systems since its emergence in January 2020.¹ It has been reported that low-income and middle-income countries (LMICs) bear significantly higher burden than their high-income counterparts.² As an LMIC with the fourth highest population in the world, Indonesia has faced multiple burdens challenging its healthcare system during the pandemic. Before the pandemic, Indonesia was highlighted as having the double burden of low hospital-bed-to-population ratio (1.49:1000) as well as low physician-to-population ratio (0.38:1000, compared with 1:1000 WHO Standard). In addition to falling below WHO standards, hospital beds and physicians are unequally distributed geographically.³ These underlying challenges in healthcare services have been exacerbated during the COVID-19 pandemic.

When the surge in Delta cases first began in June 2021, 60 000 of the 85 000 hospital beds reserved for COVID-19 across Indonesia were occupied. This led to the need to convert



non-COVID-19 beds and emergency rooms to COVID-19 facilities, pushing alternative emergency and essential care into makeshift tent facilities.⁴ In July 2021, many referral hospitals in Jakarta and other major cities in Java were reporting the inability to accept more COVID-19 patients, despite increasing cases.³ At the community level, interruptions of essential health services were indicated by the closures of nearly 76% of village health posts and the suspension of over 41% of home visits services for family planning, vaccines, chronic illness and maternal health, as well as delays in health checks experienced by the elderly.⁵

Despite the afore-mentioned challenges within the healthcare system, understanding the impact of the pandemic from community perspectives is equally important. While healthcare facility closures are drivers of the decline in health service utilisation during the pandemic, other factors can affect the community's health service seeking behaviours, including internal factors from the community itself. Nonetheless, the general discussion surrounding health service challenges during the pandemic continues to focus on the healthcare provider lenses,^{6–8} leaving little known about community perspective on essential health service delivery issues during the pandemic. In fact, engaging communities serves as an integral part of formulating inclusive, community driven policies in health,⁹ especially involving those belonging to vulnerable communities (such as socioeconomically disadvantaged people, elderly and people with certain health conditions).

In addition to the perspective of the general population and integrated healthcare workers, understanding the challenges that COVID-19 poses to community-based services from the lenses of community health workers (CHWs) also serves significant importance in Indonesia. Serving as front-line workers and an extension of the healthcare system in communities, CHWs play an essential role in strengthening healthcare services during the COVID-19 pandemic in Indonesia.¹⁰ Nevertheless, to the best of our knowledge, no studies have been conducted to examine the critical challenges they faced in delivering health services to the community. Considering their significant role in bridging the gaps within the health system, investigating the barriers that CHWs faced during the pandemic will work to inform key policy recommendations for future pandemic preparedness in Indonesia.

The following paper aims to fill the gap by presenting the findings of a survey assessing community needs and perceptions on essential healthcare services in three districts in West Java, one of the worst hit provinces by COVID-19 in Indonesia.¹¹ By engaging community leaders, vulnerable populations and CHWs, we aim to identify community needs and perceptions towards the utilisation of health services. Our work aims to highlight the importance of pandemic preparedness as well as the key role CHWs play, and barriers that CHWs face in delivering community-based services during the pandemic.

METHODS

Study design

A cross-sectional study was conducted to assess community needs, perceptions of and demand for healthcare services during the COVID-19 pandemic using a questionnaire adopted from the WHO Community Assessment Tool.¹² This study was conducted in West Java as one of the hardest hit provinces by COVID-19 in Indonesia. Specifically, this study was conducted in three districts in West Java (Bandung, Depok and Bekasi as depicted in online supplemental figure 1) as a part of an initial assessment for the *Pencerah Nusantara—Puskesmas Responsif-Inklusif, Masyarakat Aktif Bermakna* (PN PRIMA) programme, an intervention programme aiming to strengthen inclusive primary healthcare services during the COVID-19 pandemic in 21 community health centres (*Puskesmas*) in West Java (PN PRIMA programme).¹³ The selection of the 21 *Puskesmas* in this study, therefore, was fully dependent on the selection process of the *Puskesmas* participating in the programme where some criteria were applied including COVID-19 response parameters (weekly testing rate, confirmed case tracing and contact tracing by CHWs). Out of the 61 villages covered in those 21 *Puskesmas*, 38 villages/urban areas were randomly selected as the study sites determined by using the Cochran formula with a 5% significance level and a tolerated error rate of 10%.¹⁴ From these villages/urban areas, respondents were identified to represent the community in their areas.

Participants

From the 38 selected villages, 120 respondents were identified with two refusing participation, leaving a total of 118 respondents as for study participation. Three types of respondents comprise the sample of this community needs survey: community leaders, vulnerable group representatives and CHWs, who were interviewed on behalf of the wider communities in their areas. No predetermined distribution of the respondents was applied prior to recruitment. Community leaders in this study were represented by the heads of the villages/urban villages. If the village heads were unavailable to participate, alternatives were identified by interviewing village administrative staff, village office staff, community and religious figures, community members, or members of the family welfare programme. In addition, the Head of Social Affair Section in the village/urban villages was contacted to identify the organisations of vulnerable groups and their associated representatives in the area. Lastly, CHWs in this study are individuals who were recognised and appointed by the *Puskesmas* and have worked for at least 2 years in the area.

Data collection

One-time data collection was conducted from 24 January to 23 February 2022 through a questionnaire-based interview using the adopted WHO *Community needs, perceptions and demand: community assessment tool*. This questionnaire consists of five dimensions in assessing community needs,

perceptions and demand during the (last 3 months of) COVID-19 pandemic, including: (1) need for and use of essential health services in communities, (2) barriers to seeking essential health services in communities, (3) attitudes towards COVID-19 vaccine, (4) community assets and vulnerabilities and (5) barriers to delivery of community-based services (specifically for CHWs). Few questions were also asked about the pre-pandemic situation related to these five dimensions.

Prior to adopting the tool, several adjustments were made to reflect the local context of our study, including: (1) adding information about community understanding of routine assessment for patients diagnosed with hypertension or diabetes mellitus, pregnant women, and weight measurement for toddlers; (2) adding information for communities attitudes towards COVID-19 vaccinations, including barriers in accessing vaccination, government's effort to widen vaccination reach and assessed communities' perspective about the definition of vulnerable groups and (3) adding information about CHW involvement.

Online training was conducted for eight field data collectors by the lead researcher, technical assistant and enumerator coordinator to align their understanding of the research questionnaire and the technical use of the data input application. After undergoing the pilot testing phase of the questionnaire with eight respondents in another village with similar characteristics corresponding to the research area, face-to-face interviews were conducted by eight trained interviewers: three in Bandung City, three in Bekasi Regency and two in Depok City. During the interview sessions, the respondents' answers were directly entered into the *Open Data Kit* application by interviewers and submitted to the research team. Interviewers also reported regular data updates to technical assistants through the *Open Data Kit*. The technical assistants then validated the completeness and quality of the data to ensure that the interviewers had carried out data collection in accordance with the data collection guidelines by randomly examining 25% of the survey's subsample interview recordings. Unclear answers were reconfirmed with the enumerator for further clarification of the question to the respondents. After all data was deemed to meet completeness and quality standards, the next step involved the data cleaning and analysis process.

Data analysis

Data cleaning was conducted by excluding answers that did not address the question or were noted to have an input error by the interviewers. Data entry errors followed a pattern in cases involving numerical elements as the enumerators did not receive precise answers from the respondents, leading them to input arbitrary numbers initially. These numbers were rectified on confirmation from the corresponding respondent and were ensured not to affect the data quality following the verification process. Using the STATA V.15 statistical package, cleaned survey results from the study were analysed by employing

Table 1 Respondent characteristics

Characteristics	n	%
Roles in the community		
Community representatives		
Village officers	39	33.05
Members of family welfare programme	8	6.78
Religious/community leaders	32	27.12
Community members	2	1.69
Community health workers	31	26.27
Representatives of vulnerable groups Transgender, elderly, persons with HIV/AIDS, persons with mental illness	6	5.08
Education attainment level		
University degree	40	33.9
Senior high school	64	54.24
Junior high school	6	5.08
Elementary school	8	6.78
Age		
18–25 years	0	0
25–60 years	111	94.07
>60 years	7	5.93
Sex		
Men	50	42.37
Women	68	57.63

descriptive statistics using frequency and percentage. The variable results were grouped by several key themes as they pertain to the *WHO Community Needs, Perceptions, and Demand Tool*, including characteristics of respondents, needs and utilisation of essential health services, barriers of essential health service seeking behaviours, community attitudes towards COVID-19 vaccines, community resilience during the COVID-19 pandemic and roles of CHWs. The distribution of the data collected about the community needs, perceptions and healthcare services are summarised in tables and figures.

Patient and public involvement

The public was not involved in the design, reporting and dissemination of our study.

RESULTS

Table 1 presents the characteristics of the 118 respondents across 38 villages in this study. Respondents from the community representative group primarily consisted of village officers and religious/community leaders. From the CHW group, there were 31 respondents joining the survey. Lastly, there were six participants representing identified vulnerable groups (transgender community (2), elderly (1), persons with HIV/AIDS (1), persons with mental illness (1) and persons with disability (1). The numbers of these vulnerable representatives depended

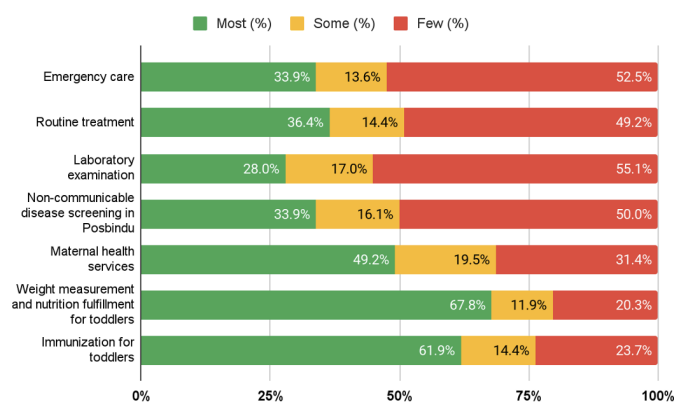


Figure 1 The proportion of accessible healthcare services (n=118).

on the availability of such groups in the selected study sites. The majority of participants had obtained an educational attainment level of senior high school (54.2%) or university degree (33.9%). Further, most participants were between the age of 25 and 60 years, grouped as productive adulthood, with only 5.9% of participants being over 60 years of age. The ratio between men and women respondents in this study was 4:6. The key findings of our study are presented in the following tables and paragraphs (full results of the questionnaire can be seen in online supplemental table 1, online supplemental table 2, online supplemental table 3 and online supplemental table 4).

Needs and utilisation of essential health services

Figure 1 presents the accessibility of essential health services in the study sites to provide information on the latest state of health access in the time of COVID-19. The majority of respondents reported that the essential health services accessible to most citizens were weight measurement and nutrition support for toddlers (67.8%), child immunisation (61.9%) and maternal health services (49.2%). In contrast, emergency care, non-communicable disease (NCD) screening in integrated health service posts (*Posbindu*) and routine treatment were reported to have the highest unmet health needs for the community across the period.

Barriers of essential health service seeking behaviours

Community challenges in accessing essential healthcare are depicted in **table 2**. Prior to the pandemic, long distance (25.4%), long waiting time (20.3%) and preference of traditional medicines (16.1%) were the most frequent reasons for not accessing healthcare. During the COVID-19 pandemic, almost 8 out of 10 respondents reported that the community's access to health services was strongly (48.3%) or moderately (30.5%) affected by the pandemic. Of those who responded that the pandemic had affected access to health services (n=93), new barriers to accessing healthcare were reported, with fear of COVID-19 infection, primarily at healthcare facilities (60.2%) or outside home (31.2%) dominating responses. Additionally, a small proportion of respondents reported

that people's fear of a COVID-19 misdiagnosis (14.0%), mobility restrictions and stay-at-home orders (11.8%) also affected the community's reasoning in accessing health service during the pandemic.

Further, the study found that CHWs were the most frequently mentioned first contact when any community member began feeling unwell (57.6%); this was followed by community leaders (39.0%), head of neighbourhood (36.4%) and Puskesmas (35.6%). Moreover, more than half of the respondents (56.8%) stated that there were groups of people in the community facing difficulties in accessing healthcare. These groups were identified as those from lower socioeconomic groups (61.2%) and vulnerable populations, including households with elderly (25.4%), persons with disabilities (25.4%) and other groups such as pregnant women, people with mental illness and people with lower educational background (26.9%).

Community attitudes towards COVID-19 vaccine

Table 3 and online supplemental figure 2 depict the study's findings regarding community attitudes towards COVID-19 vaccines. The results (online supplemental figure 2) showed that there was a general concern among the community regarding the spread of COVID-19 (75.4%) and that most respondents (87.3%) stated that the community was willing to be vaccinated to protect themselves. In addition, 86.4% declared that protecting their children was the reason behind people's willingness to be vaccinated. Meanwhile, the primary drivers behind vaccine hesitation (**table 2**), as stated by the respondents, were mostly attributable to vaccine side effects (44.7%), health concerns for those with comorbidities (44.7%) and mistrust or opposition to vaccines (25.5%). In regard to the ability to access COVID-19 vaccines, most respondents stated that there were no barriers for the community (55.9%). However, several community members raised concerns over logistical barriers, such as vaccine availability (15.3%) and administrative challenges, such as the need to have a national ID card to be eligible for vaccination (13.6%). Some efforts have been made to increase vaccination rates, including establishing vaccination centres in the villages (reported by 80.5% of respondents), improving vaccine communication and education to community members (reported by 35.6% of respondents) and collaborating with support groups (reported by 17.8% of respondents).

Community resilience during the COVID-19 pandemic

The study revealed that the vast majority of respondents (91.5%) reported that the pandemic has significantly impacted individuals' economic situations (**table 3**). There were various findings on the availability of socioeconomic and educational aid received by the respondents, with 36.4% of respondents reporting an increase in support, 35.6% reporting no change in support and 28.0% reporting a decrease in support. Of all pandemic support, cash transfer initiatives were most frequently

Table 2 Barriers of essential health service seeking behaviours

Barriers	Yes		No	
	n	%	n	%
Reason for not accessing healthcare prior to the pandemic				
Absence of barriers	24	20.34	94	79.66
Preference for traditional medicine	19	16.10	99	83.9
Long distance to health facilities	30	25.42	88	74.58
Long wait time	24	20.34	94	79.66
Communities' experience in accessing healthcare services during the pandemic				
No change compared with prepandemic period	25	21.19	–	–
Moderately affected	36	30.51	–	–
Strongly affected	57	48.31	–	–
Barriers of seeking essential healthcare in (of those responding 'moderately affected' or 'strongly affected', n=93)				
Fear of contracting COVID-19 at health facilities	56	60.22	37	39.78
Fear of contracting COVID-19 by leaving house	29	31.18	64	68.82
Fear of intentional misdiagnosis with COVID-19	13	13.98	80	86.02
Mobility restriction or stay-at-home order (eg, PPKM)	11	11.83	82	88.17
First point of contact when people feel unwell				
Community health workers	68	57.63	50	42.37
Community leaders	46	38.98	72	61.02
Head of neighbourhood	43	36.44	75	63.56
Community health centres (Puskesmas)	42	35.59	76	64.41
Existence of disadvantaged people in accessing healthcare services				
People having difficulties in accessing healthcare services (n=67)	67	56.78	51	43.22
People in poverty	41	61.19	26	38.81
Isolated households with elderly person	17	25.37	50	74.63
Persons with disabilities	17	25.37	50	75.63
Others (pregnant women, people with mental illness, etc)	18	26.87	49	73.13

PPKM, Community Activities Restrictions Enforcement.

reported by respondents as having the greatest increase during the pandemic (76.7%), followed by the provision of food baskets or vouchers (34.9%), as well as non-cash support (25.6%). In regard to the development of additional health and environmental hygiene programmes during the pandemic, 44.1% of individuals reported an increase in presence across the 3 months prior to the initiation of the survey. However, 44.1% of other respondents reported no change in the number of health and environmental hygiene programmes, and 11.9% reporting a decrease. Health improvement programmes that were most notable to individuals were the provision of hand-washing facilities (reported by 46.2% of respondents), health promotion activities (reported by 40.4% of respondents), the distribution of communication, informational and educational materials (reported by 26.9%), as well as the provision of cleaning facilities (26.9%).

Barriers of community-based service delivery and roles of CHWs

Table 4 explores the conditions and roles of CHWs in delivering community-based services during the COVID-19 pandemic. The majority of CHWs felt that they were at high (38.7%) or very high (29%) risk of contracting the coronavirus. The most notable reason for this high perception of infection risk was attributable to their high level of contact with the community (85.2%), followed by other factors such as lack of transparency from community members who have contracted COVID-19 (29.6%), inadequate Personal Protective Equipment (PPE) (11.1%) and exhaustion due to long working hours (7.4%). Relating to acceptance by communities, more than half (58%) of the CHWs reported that they never felt stigmatised by their community of work, while 29% of them reported occasional stigmatisation. Further, though CHWs stated that they received additional support from the government and other stakeholders to conduct their activities (93.4%), the CHWs reported unmet needs

**Table 3** Community attitudes towards COVID-19 vaccine and community resilience during pandemic

Community attitudes towards COVID-19 vaccine	Yes		No	
	n	%	n	%
Reason of not wanting to be vaccinated				
Concerned about side effects of COVID-19 vaccination	42	44.68	52	55.32
Health reason (eg, comorbidities)	42	44.68	52	55.32
General mistrust of or opposition to any vaccine	24	25.53	70	74.47
Barriers in accessing COVID-19 vaccines				
No barrier	66	55.93	52	44.07
Limitation of COVID-19 vaccines daily stock	18	15.25	100	84.75
Do not have ID card or other administrative issues	16	13.56	102	86.44
Effort to reduce vaccination barriers				
Establish vaccination centre at the village	95	80.51	23	19.49
Collaborate with support group	21	17.80	97	82.20
Improve counselling, information and education related to vaccination	42	35.59	76	66.41
Community resilience during the COVID-19 pandemic				
Effect of pandemic towards people's economic situation				
Significant	108	91.53	–	–
Moderate	10	8.47	–	–
Socioeconomic and educational support within last 3 months				
Increase	43	36.44	–	–
Remain stable	42	35.59	–	–
Decrease	33	27.97	–	–
Socioeconomic programme improvement in society (of those responding increased socioeconomic and educational support, n=43)				
Cash transfers provided by the government, corporates or individuals	33	76.74	10	23.26
Provision and distribution of food baskets or voucher	15	34.88	28	65.12
Non-cash support (eg, groceries, masks, medical and mental support)	11	25.58	32	74.42
Change in health and environmental hygiene programmes within last 3 months				
Increase	52	44.07	–	–
Remained stable	52	44.07	–	–
Decrease	14	11.86	–	–
Health and environmental hygiene programme improvement in society (of those responding increased health support, n=42)				
Provision of handwashing facilities	24	46.15	28	53.85
Health promotion activities	21	40.38	31	59.2
Distribution of communication, information and education materials	14	26.92	38	73.08

for financial support (45.2%), logistic and equipment support (54.8%), PPE (22.6%) and further training for CHWs (19.3%).

Our study also observed CHW involvement in health service delivery across three different monitoring programmes for toddlers, pregnant women and NCDs (online supplemental table 4). We found that most of the CHWs played significant roles in those community-based services, including registration and observation, health education, health observation and data collection for targeted communities.

DISCUSSION

Our study shows that the COVID-19 pandemic has affected the utilisation of essential health services for the general population as well as for vulnerable groups. Among the existing essential health services, this study found that emergency care, NCD screening and routine treatments were among the most unmet services in the community. Compared with the current situation today, an improvement was shown in several areas of healthcare service in Indonesia, such as in the emergency care as revealed in a study by Hendarta *et al.*¹⁵ The study found that the number of visits to emergency units in February

Table 4 Barriers of community-based service delivery

	n	%
Risk of COVID-19 infection during work in the last 3 months		
Very high risk	9	29.03
High risk	12	38.71
Moderate risk	6	19.35
Slight risk	3	9.68
No risk	1	3.23
Reason of CHW is at high risk of COVID-19 infection (n=27)		
Contacting many people	23	85.19
Not having adequate protection	3	11.11
Long working hours	2	7.41
Others (eg, lack of transparency from communities, exhaustion, etc)	8	29.63
Perceived stigma of CHW from community in the last 3 months		
Often	4	12.90
Sometimes	9	29.03
Never	18	58.06
Support received by CHW in the last 3 months		
Well supported	23	74.19
Some support	6	19.35
No support	2	6.45
Support needed by CHW		
Financial support	14	45.16
Logistics and other equipments to deliver care	17	54.84
Personal protective equipments	7	22.58
Training and information related to COVID-19	3	9.68
Other training and information	3	9.68

CHW, community health worker.

2023 was 26% lower than in the same month in 2022.¹⁵ Our finding is in line with a survey conducted by the WHO at the end of 2021, which revealed that more than 90% of countries experienced health service disruption during the pandemic.¹⁶

Study findings on the primary barriers to the utilisation of essential health services observed that the declines in service utilisation were related to the fear of contracting COVID-19, both from the healthcare facilities and elsewhere, as well as government restrictions on community mobilisation. These findings are consistent with those reported in a systematic review, which showed that the utilisation of healthcare services decreases across different settings in 20 countries.¹⁷ This urges the prioritisation of the unmet needs for essential health services, particularly those unrelated to COVID-19, in the pandemic recovery phase. In Indonesia, the gap could potentially be filled by the CHWs at the community level as they serve as one of the main contacts when individuals seek care. However, long-term planning of interventions is needed to address the negative stigma of COVID-19 and community perception of accessing healthcare services in the

time of pandemic, as many individuals are discouraged to seek care.¹⁸ Additionally, study findings identified key vulnerable groups that reported facing major challenges in accessing healthcare services, including people in poverty, elderly, disabled persons, pregnant women and people with mental illness. This highlights the importance of more inclusive health service delivery planning and strengthened health systems in order to adequately support disadvantaged groups in the society in the face of future pandemics.

Regarding community attitudes towards COVID-19 vaccines, our findings suggest that people's willingness to be vaccinated was relatively driven by several factors, including their concern on COVID-19 transmission as well as perception to protect themselves and their children from the virus. This result was supported by longitudinal studies in Poland and the USA which showed that fear of COVID-19 transmission and prosociality motivation were two of the prominent factors influencing people's willingness to be vaccinated against COVID-19.^{19 20} This study also found that vaccine availability and simplified administrative requirements were of the utmost importance in

promoting COVID-19 vaccines in the context of Indonesia. As for the factors inhibiting vaccine willingness, similar to what has been reported in the literature,^{21 22} this study found that people's hesitation to be vaccinated was mainly led by their concerns on vaccine side effects and underlying health conditions. Together, these findings to be taken into account in constructing an effective vaccination messaging for promoting vaccination uptake within communities.

Community resilience is an important factor to assess during major disease outbreaks, particularly for governments who wish to better prepare their health systems for future threats.²³ Reflecting on this study's results on community resilience, financial and food support were reported as key initiatives that improved stability during the study period. This finding is in line with the other studies findings of community needs during the pandemic as they highlight that financial stress is one of the key determinants of mental health issues during the COVID-19 pandemic among vulnerable societies.²⁴⁻²⁷ In terms of health supporting programmes, the community in this survey found that the provision of COVID-19 prevention assistance, such as the provision of handwashing facilities, PPE and environmental disinfection, was deemed to be improved during this time of the pandemic. This implies the fulfilment of the support needed by the community to maintain hygiene practices to prevent wider transmission of COVID-19 within the community. During the time of the pandemic, these programmes need to be regularly maintained to reinforce the prevention of the disease transmission, especially in high impacted sites, as highlighted by the WHO and the World Bank.^{28 29}

This study also underlines the critical role CHWs can play during pandemics. In the study context, and in other communities globally, CHWs supported overworked health systems by serving as the front point of the healthcare system in the community. However, while the need for CHWs continued throughout the pandemic, many CHWs felt that they could not conduct their role as well as prior to the pandemic due to the many restrictions placed on social gatherings as well as hesitancy from the general public. Particularly within the context of communicable disease outbreaks, in order to support the CHWs in promoting protective behaviour and preventing massive transmission of the disease within the community, equipping them with adequate knowledge capacity and PPE is important to ensuring the health of both the community and the health workers.³⁰ This study demonstrates that many CHWs felt they were at a high risk of being exposed to COVID-19 due to their main duty in being in contact with many people within the community; nevertheless, it is interesting to note that CHWs in this study maintained a good relationship with the community they serve, proven by the general absence of stigma received by the CHWs from the community and ongoing trust in receiving their care. Further, the results of this study also emphasise CHWs' need for logistical and financial support in carrying out their tasks, not only related to

COVID-19 response but also other regular duties in essential services, such as in pregnancy and NCD programmes. During the disrupted healthcare services due to pandemics, the provision of adequate training, logistical support such as provision of PPE and financial remuneration for CHWs is of the paramount importance to optimally support their roles and responsibilities.³⁰ This was also evident in several countries in Africa where CHWs were observed to perform well in assisting the delivery of community healthcare services during the pandemic when being supported adequately.³¹

Policy implications

The findings of this study can serve as scientific evidence to help the government establish early warning systems and identify key challenges and strategies that should be implemented to respond to communities' health needs. The clear challenges faced by vulnerable groups in accessing healthcare services during and prior to the pandemic emphasises the need of a more comprehensive and inclusive approach in delivering health services within the community. This resonates with a previous study on the inadequate resources available to and knowledge among vulnerable groups that hamper their ability to obtain medical care.³² According to the circular letter released by the MoH No. HK.02.01/MENKES/598/2021, an explicit instruction to accelerate the vaccination coverage for vulnerable groups was directed to the health offices at the provincial and district levels,³³ which demonstrates a political acknowledgement to increase vaccine coverage. Moreover, our study suggests that not only vulnerable groups, other parts of the population also face typical challenges such as misinformation of vaccination effects that lead to personal hesitance.

An inclusive, comprehensive policy must be constructed by both the health sector and population administrative board. An effective communication strategy for risk management should also be developed at all levels to counter misinformation of vaccination. Considering CHW's vital role during the pandemic,³⁴ they need to be supported with sufficient logistics (PPE, mask or hand sanitizer) and financial assistance to ensure their safety and welfare while protecting the community. The integration of CHWs into the health workforce and national health system is encouraged for more streamlined support and sustainable development of health service provision at the community level.

Strengths and limitations

To the best of our knowledge, our study is among the first studies assessing the access to essential healthcare services during the pandemic from the demand side (community), filling the gap in the general discussion focusing on the supply side (healthcare facilities). The involvement of CHWs and vulnerable communities in our study provides comprehensive results to inform more inclusive policy recommendations for strengthening community resilience and future health crisis preparedness. However, the

purposive method to select the regions of the study sites limits the generalisability of our study results for the wider communities. Hence, further studies with more representative samples and robust methods could be conducted to understand the issues on essential healthcare needs in Indonesia. Lastly, it is worth noting that the dynamic situation of the COVID-19 pandemic in Indonesia limits the interpretation of the study results only to the timeframe when the data collection was conducted (22 January 2022 to 7 February 2022).

CONCLUSIONS

Our study found that community needs on several essential health services in three districts in West Java were impacted and unmet during the pandemic, including for those among the vulnerable groups. The declining health service utilisation in these districts was inevitably driven by community concern on the COVID-19 infection itself. With regard to vaccination, communities were hesitant to receive vaccines due to their fear of the side effects and their concern on health conditions. Amidst these barriers, some socioeconomic and health support from both governmental and non-governmental parties were reported to be increased to assist the community. Lastly, in times of pandemic, the role of CHWs is observed to be prominent, shown by their involvement in providing essential healthcare services among the community as an extension of the community healthcare centres (Puskemas). The results of our study could serve as a key consideration for the government on how essential healthcare services should be prioritised during an outbreak or a pandemic, particularly support for the vulnerable groups and the CHWs.

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