Accessibility of Primary Health Center (PHC) Building in Bandung for People with Disabilities

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Abstract. People with disabilities are those who have physical, mental, intellectual, or sensory limitations for a long time thus can hinder their full participation and effectiveness in society. In an effort to obtain adequate health services, people with disabilities need to get special services to accomodate their disabilities. Until now, there is no data which describes the accessibility of primary health center building in Indonesia, especially in Bandung. The purpose of this study was to evaluate the accessibility of Primary Health Center (PHC), or Puskesmas, in Bandung for people with disabilities.

Method: This study was a descriptive study with the subjects of PHC in Bandung which had been selected through cluster sampling. The data was obtained through direct observation in the period of August to September 2018. The accessibility of the building was assessed using the form adapted from the Ministry of Public Works Regulation no.30/PRT/2006 and Ministry of Health Regulation no.75 of 2014.

Results: A total of 15 PHC samples were assessed for accessibility. The average accessibility score of all PHC was 53.7%, with the lowest value being 30% (poor) to the highest 78.1% (good). As many as 87% of the PHC sample have poor accessibility.

Conclusion: The accessibility of primary health center buildings for people with disabilities in Bandung in average still does not meet the standard. This is maybe due to the inadequate detail of accessibility criteria in national regulation of PHC and the fact that there are some PHC which have not been accredited yet.

Keywords: accessibility; primary health center; disability; Bandung

1. Introduction

As discussed in the Convention on the Rights of People with disabilities, disability is a concept that continues to evolve. People with disabilities is defined as those who have physical, mental, intellectual, or sensory limitations for a long time and when faced with obstacles, thus can hinder their full participation and effectiveness in society[1]. The National Socio-Economic Survey Data 2012
shows that people with disabilities in Indonesia makes about 2.45% of the population or approximately 6.64 million people, and the number continues to increase over the past 9 years[1].

In an effort to obtain adequate health services, people with disabilities need to get special services to accommodate their disabilities[1]. This effort is also reinforced by the International Classification of Functions, Disabilities and Health (ICF), which describes disability as a more extensive concept than just an individual factor but also the inclusivity of the individual's environment. It shows that the answer to the disability is not only directed to individuals with disabilities, but also to make the inclusive environment[2]. This inclusivity can be achieved by the provision of the accessibility in all facilities.

Accessibility is defined as the convenience provided for people with disabilities, in the form of adjustments or modifications of infrastructure so that they can carry out their daily activities independently[3]. The equality in all aspects of life for people with disabilities is carried out through this accessibility[4].

One of the most important public facilities used by people with disabilities is the Primary Health Center (PHC). PHC, or Pusat Kesehatan Masyarakat (Puskesmas), as described by Ministry of Health Republic of Indonesia Regulation No. 75 of 2014, is a health service facility that promotes public health and individual health at the first level, by prioritizing promotive and preventive efforts, to achieve the highest level of public health in its area. The World Report on Disabilities reports that 51-53% of people with disabilities do not have adequate access to health facilities.[5] Graham, in the previous studies published by Disability and Health Journal, also reported the accessibility of primary care practices in South Carolina being suboptimal [6].

The absence of data which describes the accessibility of primary health center building in Indonesia, especially in Bandung, highlight the importance of conducting this study. The purpose was to find out the accessibility of primary health center in Bandung for people with disabilities.

2. Methods

2.1 Data sources and study size
This study was a descriptive study and the subjects of the research are primary health center in Bandung. The subjects was chosen using the cluster sampling and the total number of chosen primary health center is 15. The inclusion criteria of this study were PHC in Bandung which were included in the sample and were willing to take part in the research. The exclusion criteria for this study were PHC with a non-permanent building which is one of the requirement criteria of PHC building stated [7].

2.2 Measurement
The accessibility of the building was assessed using the form adapted from the Ministry of Public Works Regulation no. 30/PRT/2006 and Ministry of Health Republic of Indonesia Regulation no. 75 of 2014. It consisted of 32 items rated as yes (accessible), no (not accessible), or not applicable. It was entirely focusing on the mobility issues. The modified form of 32 items are adapted and concentrates on particular aspects of medical practices sites most common to primary health care facilities grouped into 7 variables: circulatory path, accessible parking area, doors and entrance, ramp, stairs, toilet, and signage. All linear measurements were taken with tape measure. Slope measurements were taken using tape measure and processed by Pythagoras theory. Other measurement were taken through direct observation. Basic data of primary health care facilities were answered directly by the staff of the facilities.

2.3 Data Collection
The data were collected by a researcher through direct observation method in the period of August to September 2018. Each assessment was supervised by the staff of the facilities.
2.4 Data Analysis

For analysis, we treat the 32 items as equally weighted. Although not all 32 items apply to every site, as for example: the road with inclination and stairs are not always present in sites. Therefore, we used the total number of criteria that applied to that site as the base and calculated the percentage of these applicable items that conformed to the access criteria.

3. Results

A total of 15 PHC samples were assessed for accessibility. Data characteristics of 15 PHC samples is presented in Table 1.

|                          | Mean | Range  |
|--------------------------|------|--------|
| Year of built or last renovation** (a.d.) | 2011 | 1986—2017 |
| Monthly patients (persons) | 3172.9 | 720—7400 |
| Medical doctors (persons)  | 2.86  | 1—7    |
| Nurse practitioners (persons) | 5    | 1—11   |

As seen in Fig. 1, the average accessibility score of all PHC sample was 53.7%, with the lowest value being 30% (poor) to the highest 78.1% (good). Using the cut-off from the previous research, accessibility score above 70% is defined as good.[6]. Which means that as many as 87% of the PHC sample have poor accessibility. (Fig. 2)
Overall Accessibility Results

Based on the variables, the least scored variable is disability signs with 4.4% accessibility score, followed by the circulatory path, ramp, and toilet shown in the Fig. 3. On the contrary, other variables like parking area, doorway, and stairs have a good accessibility score.

Figure 2. Overall Accessibility Results

Accessibility of Variables

Furthermore, mean accessibility of all PHC sample based on subvariables is shown in Table 2. Accessibility of subvariables range from the poor 0% (disability sign in the parking lot and pedestrian step, safety edge in circulatory path) to full score of 100% (stable road surface, reachable parking area, door width, slope and surface of stairs, non slippery toilet floor).

Table 2. Accessibility of subvariables

| No | Variable       | Subvariables – items assessed                                      | Score * |
|----|----------------|---------------------------------------------------------------------|---------|
| 1  | Circulatory    | **Road surface** – stable, strong, and weather proof                | 100%    |
|    | path           | **Texture** – smooth and not slippery                               | 93.3%   |
|    |                | **Bump** – max 1,25 cm                                              | 26.7%   |
|    |                | **Slope** – max 2°, 120cm rest area in between 900 cm slope         | 50%     |
|    |                | **Rest area** – In the side of the building                         | 100%    |
|   |     |                                                                 |
|---|-----|-----------------------------------------------------------------|
| 1 | Path width | min 110 cm for one-way and 180 cm for two-way                  |
|   | Safety edge | min 10 cm height and 15 cm width                                |
|   | Guide path  | – texture tiles in vehicle lane, pedestrian path                |
| 2 | Parking area| Distance – max 60 m to the building                             |
|   | Number     | – presence of accessible parking area based on standard        |
|   | Dimension  | – single min 320 cm, double 620 cm with circulation 120 cm     |
|   | Ramp       | – connect to the building                                      |
| 3 | Doorway    | Main door – min 90 opening                                     |
|   |           | Other doors – min 80 cm opening                                 |
| 4 | Ramp       | Surface – not slippery                                         |
|   |           | – max interior 7°, exterior 6°                                 |
|   |           | Slope – max 900 cm if < 7°                                     |
|   |           | Width – min 95 cm                                              |
|   |           | Safety edge – if ramp width >120 cm, min 10 cm                 |
|   |           | Handrail – height 80-85 cm                                     |
| 5 | Stairs    | Dimension – height 15-19 cm, width 27-30 cm, uniform           |
|   |           | Surface – smooth and not damaged                                |
|   |           | – max 60°                                                     |
|   |           | Handrail – min in one side, height 65-80 cm, rounding to the floor or wall |
| 6 | Toilet    | Space – min 160 x 160 cm                                       |
|   |           | Door – min 90 cm width                                         |
|   |           | Amenities – tissue h. min 65 cm, handrail h. min 85 cm, l. 45 cm|
|   |           | Sink – countertop max 85 cm, space min 76 x 120 cm, space in between: 80 cm, lever faucet |
|   |           | Floor – not slippery                                           |
| 7 | Disability signs | In the toilet                                                |
|   |           | In the parking lot                                             |
|   |           | Pedestrian path                                                |

*Score represents the mean of subvariable’s accessibility in all PHC samples*

1. Circulatory path
   Circulatory path is a pathway designed based on the needs of the user to move safely, comfortably, and without obstacles. For people with disabilities, it has to accommodate the width of wheelchair and accompanied by a guide path that has the texture of the guide tile and warning tiles[3]. Circulatory pathways of all PHC samples have an average accessibility of 52.1%. It is generally caused by the narrow width and bump presents in the circulatory path. However, the most alarming fact is the absence of guide path for people with visual impairment in all PHC assessed.

2. Parking area
   Parking space for people with disabilities need more space to accommodate wheelchairs or other mobility aids. The number of accessible parking spaces needed is 1 for every 1-25 public parking spaces available.[3] In general, most of PHC sample have a suitable parking areas which also has been
connected with the building by ramp. Only in some PHC, the dimension of the parking areas are still not wide enough.

3. Doorway
   Doorway is a place of entry and exit and which equipped with a door [3]. It should be wide enough to be compatible for the wheelchair users. In most PHC, the doorway have met the requirements.

4. Ramp
   Ramp is a circulatory path which has certain slope, as an alternative for stairs for wheelchair users. The ramp must have reasonable gradient and accompanied by a handrail.[3] Ramp is one of the least scored variable considering many have steep slope of ramp, too high handrail, and the absence of safety edges.

5. Stairs
   Stairs is a path which facilitates vertical movement with certain slope.[3] The accessibility of stairs in PHC samples is generally good, although in some PHC the placement of handrail is too high.

6. Toilet
   The toilet must be accessible to all users including people with disabilities. It must have enough spaces for them to move around, handrails, and all toilet amenities with reachable placement [3]. Almost all toilets in the PHC sample have a very limited space with narrow door which are incompatible for wheelchair users. The placement of tissue and handrail are often too high and unreachagable.

7. Disability signs
   The sign is used to give information, direction, or guidance for people with disabilities. It is needed for the directions of pedestrian path, public toilet, or parking area for people with disabilities [3]. This is the variable with lowest accessibility of 4.4% since the signs are almost never been found in PHC sample. The toilets specifically made for people with disabilities along with the disability signs are also rarely found in all PHC sample.

4. Discussion
   The results show the accessibility of Primary Health Centers building in Bandung for people with disabilities. Most of primary health centers, especially the primary health centers with old buildings have lower percentages of accessibility than the overall average.

   In accordance with Graham et al. in the previous research, the percentage of accessibility increases as the old building being replaced or renovated [6]. It is shown that in PHC samples with old buildings, which have not been renovated since 2000, they all have poor accessibility scored below 40%. While the rest of samples have much better results of over 40%. However, this calculation ruled out 4 primary health centers that could not provide information about when they were built or last renovated.

   This low accessibility condition of PHC samples in general is partly due to the inadequate detail of accessibility criteria in the national guideline of Primary Health Center, which is Ministry of Health Regulation no. 75 of 2014 [8]. The regulation only stated that "Every building in the PHC must provide facilities and accessibility for people with disabilities to ensure the ease, security, and comfort in the toilets, parking lots, public telephones, guidelines, signs and markers, stairs, doors, ram.", without mentioning any criteria that must be met, except the criteria of the toilet [8]. This, according to one of the head of the PHC assessed, causes differences in perception of accessibility of each PHC due to lack of standardization of the accessibility itself.

   Furthermore, the other factor is the fact that some PHCs in Bandung have not been accredited by Ministry of Health yet. As recorded, by the end of 2017 only 30 out of 73 PHC which have already been accredited [9]. Although as described by WHO, accreditation is important to be “the most commonly used external mechanism for standards-based quality improvement in health care”. (World Health Organization, 2003) A study also stated that accreditation program has been confirmed to improve the care provided, and therefore should be used as a tool to improve the quality of healthcare services [10].
However, this research has limitations. Even though all the measurements are done by the same person which means it has the same standard, the observation might experience a human error during the measurement process [11]. But on the other hand, this research has its strengths. This is the first research on accessibility which uses a complete 32 subvariables with detailed descriptions to minimize the occurrence of measurement errors. Moreover, the selected sample health centers are diverse, have a variety of characteristics, and chosen by cluster sampling, in a hope that they can properly represent the overall accessibility of the primary health centers in the entire Bandung.

5. Conclusions
Accessibility of primary health center buildings for people with disabilities in Bandung as a whole still does not meet the standard, with average score of 53.7%. This is maybe due to the inadequate detail of accessibility criteria in national regulation of PHC and fact that some PHCs in Bandung have not been accredited yet.

The percentage of accessibility is generally lower in primary health centers with old buildings. The variables with lowest accessibility are disability signs, circulatory path, toilet, and ramp. Due to the poor accessibility of the PHC buildings in Bandung, it is recommended to propose the Ministry of Health to make policies in improving the accessibility of the primary health centers building for people with disabilities in Bandung.

This research is also expected to be used as a basis for further research conducted on a larger scale. Furthermore, in addition to accessibility of buildings which are examined in this study, further research is also recommended to find out the awareness of employees, policies and procedures applied in primary health centers in accommodating people with disabilities.

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