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Mapping healthy aisles in Makassar city, Indonesia: implications for community empowerment☆

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ABSTRACT

Objective: The purpose of this paper was to map healthy aisles in Makassar City and how its implication is for community empowerment.

Method: This research was a descriptive survey. One hundred and sixty aisles in Rappocini and Ujung Tanah Sub-Districts, Makassar were surveyed.

Results: The development of healthy *aisles* is under maintenance of Puskesmas (Public Health Center) consisting of 20 *aisles* of 117 *aisles* in Puskesmas Kassi-Kassi and 3 *aisles* of 43 *aisles* in Puskesmas Pattingalloang. Ten healthy *aisles* indicators were established: aisles' cleanliness, beauty, drainage, garbage transportation, utilization, Siskamling (neighborhood security system), Non-Smoking Area (Kawasan Tanpa Rokok = KTR), active Posyandu (Integrated Health Post), the presence of educational media and the existence of working groups (Pokja).

Conclusions: Based on 10 healthy *aisles* indicators, aspects of beauty, educational media, and aisles work group activity need to be strengthened, while others need to be maintained and even improved.

Introduction

Healthy cities as a setting have long been developed in various countries both developed countries and developing countries,[1] including Indonesia.[2–9] The implementation of a healthy city in Indonesia started in 1998 through a pilot project in several districts/cities, such as Cianjur District, Balikpapan City, Bandar Lampung, Pekalongan, Malang, and East Jakarta, which is designed by the Minister of Home Affairs on 26 October 1998 in Jakarta. However, there was no comprehensive guideline on the implementation of healthy cities in Indonesia. The implementation of healthy cities is officially started since the issuance of Regulation of Ministry of Home Affairs and Ministry of Health in 2015 on the implementation of healthy districts/cities.[10] The implementation of healthy city in Indonesia is related to the community forum which is Healthy City Forum (FKS) at a city level, Health Village/Sub-Village Communication Forum at sub-district level, and Working Group (Pokja) at district/city level. In general, the structure of the implementation of a healthy city is quite a success and active at the level of district/city, but less active at the sub-village level (workgroup) and structure below it.

The purpose of this paper was to map healthy aisles in Makassar City and how its implication is for community empowerment (Figs. 1 and 2).

Method

This research was conducted in the form of a descriptive survey. Data collection was carried out for 1 month, 30 July–1 August 2020. One hundred and sixty alleys in Rappocini and Ujung Tanah Sub-Districts, Makassar were surveyed. The selection of sub-districts was based on the consideration that Rappocini Subdistrict represents areas considered to actively participate in realizing Makassar Healthy City and is in a densely populated area as well as a relatively clean location, while Ujung Tanah Subdistrict is an area with characteristics of densely populated and relatively slums and poor. The development of healthy alley is fostered by the maintenance of *Puskesmas* (Public Health Center) consisting of 20 *alleys* of 117 *alleys* in Puskesmas Kassi-Kassi and 3 *alleys from* 43 alleys in the Puskesmas Pattingalloang.

Results

Ten indicators were evaluated in this research (see Table 1).

Map of healthy alleys distribution in Makassar map

There are 6 sub-villages in the working area of Kassi-Kassi Public Health Center, those are Banta-Bantaeng with 6 alleys at Wistara category. Bonto Makkio Sub-Village had 30 alleys at Wistara category, 1 alley at Wiwerda category, and 7 alleys at Purnama category.

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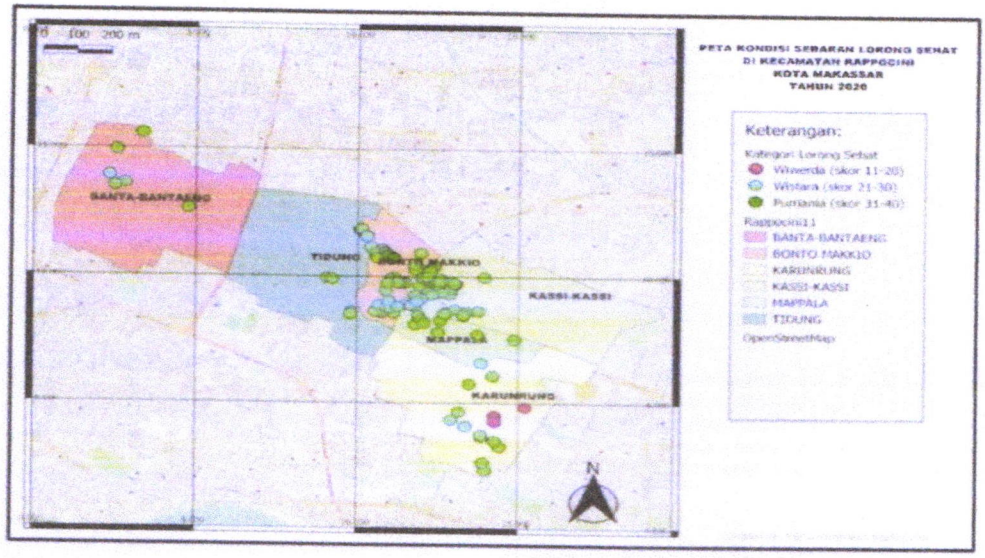

Figure 1. Map of healthy alleys distribution condition in Rappocini Sub-District.

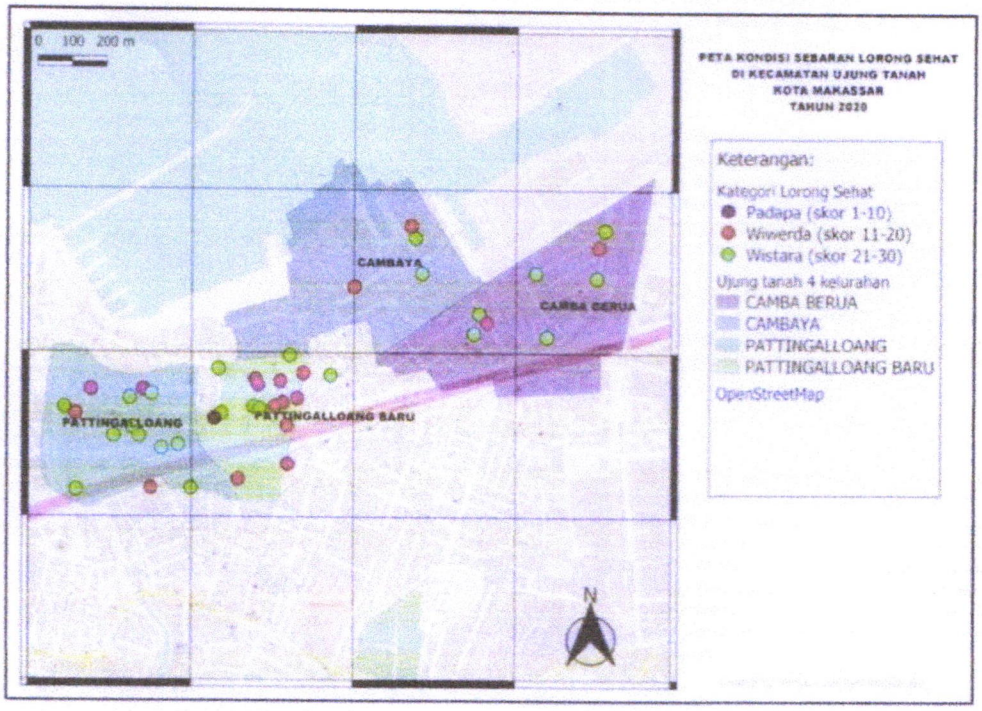

Figure 2. Map of healthy alleys distribution condition in Ujung Tanah Sub-District.

Table 1
Indicator and condition of alleys in Makassar city.

Indicator	Alley condition			
	SK	K	B	SB
Cleanliness	5	49	100	6
Beauty	14	72	71	3
Drainage	2	19	138	1
Waste transportation	1	19	138	1
Alley utilization	11	64	85	0
Environmental security system	7	58	90	5
Non-smoking area	35	95	30	0
Integrated healthy post (*Posyandu*) activeness	3	27	120	10
Availability of educational media	47	55	55	3
Alley working group	114	17	27	2

Source: Primary Data, 2020.

Furthermore, Karunrung Sub-Village had 11 alleys in Wistara category and 3 alleys in Wiwerda category. Kassi-kassi Sub-Village had 26 alleys in Wistara category and 1 alley in Purnama category. Furthermore, Mapala Sub-Village had 21 alleys in Wistara category and Tidung Village had 10 alleys in Wistara category.

Furthermore, another location is Ujung Tanah Sub-District. Ujung Tanah Sub-District is a sub-district in Makassar City, South Sulawesi in which in terms of its jurisdiction, Paotere Port is equipped by Polices of Paotere Port Sector area whose jurisdiction is only in the port and separated from the policies of Ujung Tanah Sub-District. In this sub-district, there are nine sub-villages with area width of 5.94 km^2 including Camba Berua, Cambaya, Gusung, Pattingalloang, Pattingalloang Baru, Tabaringan, Tamalaba, Totaka, and Ujung Tanah. There are four sub-villages included in the working area of Pattingalloang Public Health Center, those are Camba Berua, Cambaya, Pattingalloang, and Pattingalloang Baru. Among those four sub-villages, there were healthy alleys that have been categorized in which Camba Berua had seven alleys at Wistara category and two alleys at Wiwerda category. Then, Cambaya Sub-Village had 1 alley in Wistara category and two alleys in Wiwerda category. Furthermore, Pattingalloang Sub-Village had eleven alleys in Wistara category and four alleys in Wiwerda category. The last is Pattingalloang Baru Sub-Village which has 1 alley at Padapa category, six alleys at Wistara category, and 10 alleys at Wiwerda category.

Indicator, condition, and net spider of healthy alleys at Makassar city

This research illustrated that the healthy aspect was categorized as good (100 alleys), drainage and waste transportation were well-functioned (138 alleys), alleys' utilization was categorized as good (85 alleys), environmental security system was categorized as good (90 alleys), non-smoking area was categorized as good (30 alleys) and activeness of integrated health post was categorized as good (120 alleys). The indicator of alleys' beauty was categorized as poor, which means that the alley was utilized by did not look beautiful and pretty to be seen, while the educational media was also considered as poor in giving information and education to the community especially those who live at alley (see Table 1).

Discussion

Alleys' cleanliness

Cleanliness is a physical indicator that is directly seen by the community. The study showed that there were 100 alleys or about 62.5% of alleys categorized as clean. In general, the alleys were under the maintenance of the Public Health Center. The measurement of the cleanliness means clean from waste, lack of plastic waste on the alleys, and the availability of waste bin that will be carried out by the garbage man. Many studies showed the relationship between cleanliness and public health. Environmental cleanliness is considered one of the main factors of sustainability of healthy and comfortable life which is away from various diseases.[11,12]

Alleys' beauty

Cleanliness is different from beauty although cleanliness is often paired with beauty.[13] Clean alleys are not always beautiful. Beauty is related to the esthetics value. In this research, alleys' beauty was measured from the organization of alleys condition so it looks organized. This research showed that there were 86 alleys (53.75%) categorized as less beautiful and very less beautiful. Alleys' beauty needs to be concerned by the government and community in order for them to organize the alleys to become better. The term beauty is often used in school areas which is an organizing environment so that it is nice to look at.[14,15]

Drainage

There are several classifications of drainage. According to the history of its making, there is artificial drainage with split stone pair construction. According to its function, it is categorized as a multipurpose channel. The problems of drainage channel conditions are the high sediment and the embankment is not high enough and cracked.[16] Drainage is one of frequent environmental problems in urban areas. However, it is different from the alleys. This research showed that among 160 alleys, there were 138 alleys (86.25%) of alleys which had working drainage, while a small part of them do not function. Healthy drainage is a drainage condition in the alleys which have good function, has water streams and does not have a puddle.

Waste transportation

Research results show that among 160 alleys, there were 138 alleys (86.25%) categorized as good. Waste transportation in alleys can be done through two approaches, those are community participation and assistance from garbage man. In long terms, waste transportation from households to temporary waste shelter is much expected thus it can guarantee the alleys' cleanliness. However, health officers must present to assist the community to keep the alleys clean. There was almost no waste at the alleys both those which had temporary and permanent characteristics.

Alleys' utilization

Alley is not only a residential area but part of it is also utilized by the community. Research results found that 85 alleys (53.12%) were

utilized as alleys while the remaining were as living places. The utilization of alleys was in the form of decorative plants planting in front of the house and hydroponic vegetables planning for household consumption. Decorative plant planting is considered to have economic value by the community, thus they can obtain additional income to meet their needs. Alley can be developed based on the community property and potential. Thematic villages such as decorative plants village, tailor village, village for cake making also can be developed in alleys.

Environmental security system (Siskamling)

Research results showed that among 160 alleys, there were 94 alleys (59.3%) which had an active role in the environmental security system. The indicator of evaluation is the availability of Security Post and security schedule obtained and confirmed from the head of RW. *Siskamling* is regulated in the Regulation of the Head of Policies of the Republic of Indonesia Number 23 of 2007 Article 1 paragraph 6.[17] It is stated that *siskamling* is a unit covering several components which depend on each other, related to each other.

Non-smoking area

The implementation of No Smoking Areas is a policy of the Ministry of Health of the Republic of Indonesia which is then followed up by the provincial and district/city levels including in Makassar city. In Makassar city, there is Regional Regulation No. 4 of 2013 on Regional Regulation of Makassar city on No Smoking Areas.[18] Alleys are not specifically stated but the alley is part of Makassar city area and may be categorized as another designated place. The result of research showed that there were only 30 alleys (18.75%) that implemented Non-Smoking Areas. This means that almost a few alley communities have implemented Non-Smoking Areas.

Integrated health post (Posyandu) *activeness*

Among all healthy alleys' indicators, Posyandu activeness is a quite good indicator, in which there were about 120 alleys (75%) categorized as good. These healthy alleys were developed by *Puskesmas* in the area. The evaluation of *Posyandu* activeness was measured from access to the nearest *posyandu* and the activities carried out. *Posyandu* Revitalization is one of the programs launched by Makassar city government through the Health Office to create Healthy Makassar.

Availability of educational media

The availability of educational media in the alleys is expected to be a means for the community to build awareness of the importance of health, safe, and clean environment. The results showed that the educational media was still relatively lacking, in which from 160 alleys, there were only 58 alleys (36.25%) which were in the good category. The educational media in the alleys was in the form of health messages or Clean and Healthy Living Behavior (PHBS), for example, keep clean. Even during the Covid-19 pandemic, health protocol messages for Covid-19 control were installed in urban villages including alley areas.

Working group

The working group of healthy alleys is one of the necessities in community development. The results showed that from 160 alleys, 114 alleys (71.25%) were in very poor category, only a few alleys had active working groups. The working group that was officially presented is a working group at the Healthy City Forum at sub-village level so that the organizational structure is the organizational structure under the Makassar Healthy City Forum. Its members are from the community, Posyandu cadres, community leaders, and religious leaders who are in the sub-village area.

Conclusion

This research concludes that aspects of cleanliness, drainage, waste transportation, *alleys* utilization, KTR, and Posyandu activeness are in good categories, while beauty and availability of educational media aspects are evaluated poor and even working group activity is evaluated as very poor. Based on 10 healthy *alleys*' indicators, aspects of beauty, educational media, and working group activity need to be strengthened, while others need to be maintained and even improved.

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Conflicts of interest

The authors declare no conflict of interest.

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