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Original Research

Understanding river culture to approach health promotion in river management in Banjarmasin, South Kalimantan, Indonesia

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Running title: River culture in the river management

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Significance for public health: Addressing river management is primarily a cultural concern, integral to fostering healthy cities and ensuring the well-being of the environment and natural resources. The themes of this study shape ways of thinking and affect decision-making to protect the river. A well-maintained river contributes to achieving Sustainable Development Goal (SDG) number 6, which aims to provide clean water and sanitation.

Abstract

Cultural customs play an important role in maintaining the well-being of the environment and natural resources. These cultural concepts influence thought processes and have a significant impact on decision-making, particularly in protecting the river. Therefore, this study aimed to explore the connection between local culture, specifically values, ways of life, and beliefs, and the promotion of a healthy river environment among residents living along the river in Banjarmasin, South Kalimantan Indonesia.

A mixed-method approach was employed to investigate the cultural aspects, including values, ways of life, and beliefs, and the advocacy for a sustainable river environment among the inhabitants residing along the river in Banjarmasin, South Kalimantan, Indonesia. The quantitative design evaluated the descriptive statistics in terms of the sociodemographics of participants. Data collection was carried out using in-depth interviews, observation, and questionnaires. Subsequently, triangulation was performed to ensure trustworthiness. All statements relevant to the phenomenon were identified before the theme was clustered. The results showed that the river culture consists of two themes, namely values and ways of life, and beliefs. In conclusion, it was expected that understanding the culture of the river could be a strategy for conducting health promotion in river management.

Introduction

The river plays a crucial role in supporting human development by providing water, transportation, agriculture, and fisheries, forming a close connection with human well-being.¹⁻³ Protecting the river is essential to achieve a healthy river, defined as an ecosystem that enhances human well-being.⁴ A healthy river contributes to achieving Sustainable Development Goal (SDG) number 6, which focuses on providing clean water and sanitation.⁵ However, numerous studies show that some individuals neglect river maintenance, exemplified by behaviors like improper garbage disposal.⁶ This also occurred due to population growth and rapid industrialization.^{7,8}

Banjarmasin city in South Kalimantan, Indonesia, is known as the "City of a Thousand River" due to its extensive river network. According to 2015 data from the Banjarmasin City Water Resources and Drainage Sector, there are over 100 rivers in the city. The widest river in Indonesia is located in this city known as the Barito River.^{9,10} Moreover, a significant portion of the population in this city resides along the riverside, where the river serves as a vital aspect of their daily lives. This includes engaging in activities such as trading at floating markets, participating in tourism, using it for transportation, as well as for toileting, washing, and bathing.^{11,12}

Human activities in the river have both positive and negative effects. Positive effects can enhance the lives of those residing along the riverside, while negative consequences include a decline in water quality, evidenced by an increase in E. coli levels.¹³ To safeguard the river, effective management is important, requiring collaboration from various sectors, including human, economic, and cultural.^{14,15} Previous study emphasizes the significance of multi-sectoral partnerships in addressing river management.⁶ To foster effective sanitation in the river and proper waste management for the local community, it is crucial to consider the economic aspect. This can be achieved by leveraging tourism activities along the river.^{16,17} Additionally, cultural considerations play an important role in supporting river management, as belief systems often ascribe crucial importance to a river, viewing them as inseparable from life itself. Culture provides a holistic approach to understanding the interconnection between humans, the environment, and spiritual forces.¹⁸

This study explored the connection between local culture, specifically values and ways of life and belief, and the well-being of the river among residents living on the riverside in Banjarmasin, South Kalimantan Indonesia. People residing along riverbanks recognize that natural activities in the universe are shaped by living resources and mysticism. They believe that all parts of the environment are interrelated or interdependent. Moreover, this perspective holds that environmental misuse will have adverse effects on the entire system.¹⁵ Consequently, cultural customs play an important role in maintaining the welfare of the environment and natural resources. These concepts shape ways of thinking and decision-making to protect the river. Figure 1 shows that Banjarmasin is the city of a thousand rivers. Figure 2 reveals the physical condition of the River is plastics and polluted from household under the houses.

Materials and Methods

Ethical approval was obtained from the Health Research Ethics Committee Faculty of Nursing Universitas Airlangga, Indonesia (number: 1850-KEPK). In this study, a mixed method was used. A qualitative design was used to explore the connection between local culture, specifically values and ways of life, beliefs, and health of the river among residents living along the riverside in Banjarmasin, South Kalimantan Indonesia. It also to understand phenomena related to culture.¹⁹ A quantitative design was used to evaluate descriptive statistics: frequency and percentage of socio-demographics of participants. The sociodemographics of participants are shown in Table 1.

Data were collected using in-depth interviews, observation, and questionnaires. Previous studies related to culture associated with a healthy river include extracting information on value, ways of life, and beliefs.^{6,18} The interview process was documented through audio recording, transcribed in the Banjar language, and subsequently analyzed manually using thematic content analysis.²⁰ To ensure trustworthiness, triangulation was used. Subsequently, the identification of all the statements that are relevant to the phenomenon was carried out and the theme was clustered.^{21,22}

Data were collected from August to June 2020, and a total of 30 samples were obtained. The sample was people who live on the riverside in Banjarmasin, South Kalimantan, Indonesia, such as Antasan Segera River, Baguntan River, Tungku River, Banyuur Ampera River, Pekapuran Laut river, and Guring river.

Results and Discussion

Sociodemographic

Table 1 shows the sociodemographic of participants, totalling 30 individuals. The gender distribution shows 53.3% female (16 participants) and 46.7% male (14 participants). All participants belong to the Banjarese Ethnic group, with ages ranging from 20 to 63 years. In terms of education, the majority completed senior high school (40%), and 50% of participants identified as housewives in terms of occupation. This study was carried out in the Banjarmasin area, known for its numerous rivers and a population residing along the riverbanks for over a decade. Consequently, a distinct culture connected to a river has flourished within this community. The results of thorough interviews and observations showed that culture along the river, including values, lifestyle, and beliefs, plays a significant role in shaping approaches to health promotion within river management.

Value and The Way of Life

Human life in society is never separated from values and norms.¹ This study uncovered the significant value attributed to the river, showing its integral role in the lives of the people in Banjarmasin City. The following is an excerpt from one of the participants' statements:

“We live in the City of a Thousand Rivers, a reflection of our people's deep cultural connection. We residing along the riverside not only need the river but also feel it as an integral part of our identity”... (M1.05)

“The river is needed and important for our daily lives, and it is more like our best friend”... (M4.18)

Based on the results of the in-depth interview, the majority chose to reside along the riverside due to a sense of comfort and the various advantages derived from the river. In addition, this preference for riverside living was often inherited from preceding generations. The observations in communities showed that the river in Banjarmasin was used to conduct daily activities, recreation such as fishing or playing (figure 3 and figure 4) as well as for religious activities (figure 5) and household activities, such as washing dishes, clothes, or toileting (Figure 6). Some residents also use the river as a transportation route (Figure 7) (Observation Notes, December 2020 to March 2021).

Belief

Certain Banjarese individuals hold beliefs connected to the rivers, such as the notion that the river serves as a location for dispelling diseases among children, referred to as the "belabuh" tradition. This perspective is evident in the following statement:

"The Belantingan ritual, locally known as "belabuh," is a practice aimed at warding off diseases among children by using the river as a means of purification"... (M4.19)

"The tradition, known as "belabuh," is believed to have the power to ward off illnesses from children when they are sick"... (M4.20)

Some residents perceive living along the riverside as a symbol of wealth, associating it with boat ownership (Figure 8). This can be seen from the following statement:

"I've heard that culture showed that people living by the riverside have a lot of money, isn't that right? Maybe he had a boat like that in the past. Maybe if I look here the houses are tens of meters from the edge of the river... according to our perception, that is wrong. As long as the community remains undisturbed and the river's flow is unaffected, I believe it is acceptable. This is my personal opinion, acknowledging that deviation from established rules might not always imply wrongdoing"... (M1.01)

The belief system in Banjarese culture includes myths about the river, including the existence of a supernatural entity referred to as "dangsanak," which is associated with familial ties. According to residents, *dangsanak* is a ghost and sometimes appears like a crocodile. This can be seen from the following statement:

"The water's ghost resembles a tree trunk as the bamboo piece rises and falls—a spectral presence. In Ba'ah's water, there are crocodiles"... (M4.18)

"There used to be gaduhan (red: pet) crocodiles...but now there are none"... (M1.04)

According to several participants, the existence of this myth can be used to approach the community in protecting a river, but this belief is starting to disappear. This can be seen from the following statement:

"In fact, if we go back to the local wisdom of Banjar culture, there is the term pamali (ed: sinful), such as pamali throwing away ratik (ed: rubbish), throwing rigat (ed: dirty) into the river. This practice is discouraged due to the presence of dangsanak (red: family/relatives). The cultural approach that prohibits throwing rubbish into the river is considered right in the context of Banjar culture. According to the language of the ancients, it is viewed as a sin to dispose of items like ratik in the river because of the presence of dangsanak, emphasizing the responsibility to care for these living creatures in the water. Dangsanak means that there is a living creature that was created for us to look after, and care for. There are indeed dangsanak in the river"... (M5.22)

"There is local wisdom which often includes myths, such as those about crocodiles in the river. One myth suggests that if you defecate in the river, your stomach will swell—an imaginative way to discourage actions that might harm the water. Additionally, cautionary tales about big snakes in the Sabilal region contribute to the cultural emphasis on respecting and protecting the environment. That's what they say if we pass this region and don't respect the river, thereby you will be eaten by crocodiles. That's a myth. It used to protect the river... maybe"...(M1.04)

The Banjarese people still have a "river culture", which can be defined as a way of life for people who live close to the river. Making the river a "way of life" and shaping the character of the community. The river culture is characterized by the existence of riverside settlements, floating markets, and jukungs, and the social interactions that occur.²³ Furthermore, it also means that the river has traditionally been the

lifeblood of the community. The river as the lifeblood of the Banjarese people (also of Banjarmasin City), includes physical aspects (the physical quality and quantity of the river); ecological (the river ecosystem), economic (transportation, floating markets, fishing, irrigation), and social.²⁴

A river serves as more than just waterways; they are vital connections that link humans with diverse forms of life and embody cultural values.¹⁸ According to Subiyakto, the Banjarese people are described as a "river-oriented" society, showing that their activities and community life revolve around the deep significance of the river in their culture. The river holds significant traditions for the Banjarese people, embodying practices that have endured over time and seamlessly integrated into the life of the community.²⁵ According to Linton, an Anthropologist, cultures such as values and beliefs are difficult to change and difficult to replace with others.²⁶

To maintain the welfare of the environment and natural resources, specifically the river, support implementation of public policies is needed. The role of stakeholders as authority holders and the community becomes an important thing. Therefore, the relationship of mutual support greatly influences the implementation of the policy.²⁷ Of course, it is necessary to involve the community with their culture as a local wisdom.¹³

Participation or support in the community is also influenced by cultural values, such as the values, norms, and beliefs that constitute social.²⁸ The cultural approach in policy implementation relies on the values and perspectives of local communities, emphasizing the viewpoint of the natives in the process. The cultural approach is also often referred to as the bottom-up approach. Through this cultural value or local knowledge approach in the river management system in Banjarmasin City, it becomes possible to promote health and protect the river from waste, thereby fostering positive values essential for river maintenance.

Conclusions

In conclusion, cultural customs are needed to maintain the welfare of the environment and natural resources. This study showed two key themes related to the cultural significance of a river: values, and ways of life, as well as beliefs. Using this approach, health promotion efforts can be implemented to protect

the river from waste. Furthermore, this study emphasizes the importance of respecting local wisdom, particularly in understanding the interconnected relationship between humans and a river. Regulatory measures should take into account this diversity for effective environmental management.

References

1. Abbas EW, Jumriani J, Syaharuddin S, Subiyakto B, Rusmaniah R. Portrait of Tourism Based on River Tourism in Banjarmasin. *The Kalimantan Social Studies Journal*. 2021 Oct 15;3(1):18–26.
2. Chan NW. Managing Urban Rivers and Water Quality in Malaysia for Sustainable Water Resources. *International Journal of Water Resources Development*. 2012 Jun 1;28(2):343–54.
3. Grizzetti B, Liquele C, Pistocchi A, Vigiak O, Zulian G, Bouraoui F, et al. Relationship between ecological condition and ecosystem services in European rivers, lakes and coastal waters. *Science of The Total Environment*. 2019 Jun;671:452–65.
4. Zuo Q, Hao M, Zhang Z, Jiang L. Assessment of the Happy River Index as an Integrated Index of River Health and Human Well-Being: A Case Study of the Yellow River, China. *Water*. 2020 Nov;12(11):3064.
5. Hansen HH, Bergman E, Cowx IG, Lind L, Pauna VH, Willis KA. Resilient rivers and connected marine systems: a review of mutual sustainability opportunities. *Global Sustainability*. 2023;6:e2.
6. Herawati H, Keman S, Rukmini Devy S. Understanding The Experience Of Multi-Sectoral Partnerships In River Management For A Healthy And Sustainable City In Banjarmasin, Indonesia. *MJPHM*. 2022 Aug. 20;22(2):230-6.
7. Zuo Q, Hao M, Zhang Z, Jiang L. Assessment of the Happy River Index as an Integrated Index of River Health and Human Well-Being: A Case Study of the Yellow River, China. *Water*. 2020; 12(11):3064.
8. Xu D, Zhu D, Deng Y, Sun Q, Ma J, Liu F. Evaluation and empirical study of Happy River on the basis of AHP: a case study of Shaoxing City (Zhejiang, China). *Mar Freshwater Res* [Internet]. 2023 Mar 1 [cited 2023 Jul 29]; Available from: <https://www.publish.csiro.au/mf/MF22196>.
9. Central Statistics Agency of South Kalimantan. *South Kalimantan in Figures 2015*. South Kalimantan: Central Statistics Agency of South Kalimantan; 2015.
10. South Kalimantan Provincial Health Office. *South Kalimantan Health Profile 2017*. South Kalimantan: South Kalimantan Provincial Health Office; 2018.

11. Abbas EW, Handy MRN, Shaleh RM, Hadi NTFW. Ecotourism of Martapura River Banjarmasin as a Learning Resources on Social Studies. *The Innovation of Social Studies Journal*. 2020 Mar 1;1(2):111–9.
12. Matnuh H, Adawiah R, Putra AP. Problemate River Management In The City A Thousand River. *Psychology and Education Journal*. 2021 Mar 1;58(2):9752–62.
13. Angriani P, Sumarmi, Ruja IN, Bachri S. River management: The importance of the roles of the public sector and community in river preservation in Banjarmasin (A case study of the Kuin River, Banjarmasin, South Kalimantan – Indonesia). *Sustainable Cities and Society*. 2018 Nov 1;43:11–20.
14. Arthington AH, Bhaduri A, Bunn SE, Jackson SE, Tharme RE, Tickner D, et al. The Brisbane Declaration and Global Action Agenda on Environmental Flows (2018). *Front Environ Sci*. 2018 Jul 2;6.
15. Harmsworth G, Young R, Walker D, Clapcott J, James T. Linkages between cultural and scientific indicators of river and stream health. *New Zealand Journal of Marine and Freshwater Research*. 2011 Sep 1;45(3):423–36.
16. Akpan EI, Obang CE. Tourism: A strategy for sustainable economic development in Cross River State, Nigeria. *International Journal of Business and Social Science*. 2012;3(5).
17. Putro HPN, Jumriani, Abbas EW, Aprilla W. Impact of Tourism for Economic Activities of Riverbank Communities in the Jingah River District, Banjarmasin City. In *Atlantis Press*; 2021 [cited 2023 Jul 29]. p. 372–5. Available from: <https://www.atlantis-press.com/proceedings/icsse-20/125953125>.
18. Anderson EP, Jackson S, Tharme RE, Douglas M, Flotemersch JE, Zwarteveen M, et al. Understanding rivers and their social relations: A critical step to advance environmental water management. *WIREs Water*. 2019;6(6):e1381.
19. Meyer J. Using qualitative methods in health related action research. *BMJ*. 2000 Jan 15;320(7228):178–81.

20. Vaismoradi M, Turunen H, Bondas T. Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*. 2013;15(3):398–405.
21. Creswell JW, Creswell JD. *Research design: Qualitative, quantitative, and Mixed Methods Approaches*. California: Sage Publications; 2017.
22. Morrow R, Rodriguez A, King N. Colaizzi's descriptive phenomenological method. *The psychologist*. 2015;28(8):643-644.
23. Rahman S, Mentayani I, Rusmilyasari R, Mahreda E. Concept Of Arrangement Of Riverbank Slum Settlements In Sungai Bilu Village, Banjarmasin City. *EnviroScienteeae*. 2019 Dec 3;15:397.
24. Angriani P. *Community-based river management: learning from the Sungai Kuin area of Banjarmasin*. Malang: Media Nusa Creative (MNC Publishing); 2021.
25. Kamisorei RV, Devy SR. Description of Beliefs about the Efficacy of Chewing Betel in Papuan Society in Ardipura I Subdistrict, South Jayapura District, Jayapura City. *Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education*. 2017;5(2):232-244.
26. Fauzi M, Sompaa AT. Policy Implementation Of Banjarmasin Government In Maintaining The “City Of A Thousand Rivers” Icon. *International Journal Political, Law, and Social Science*. 2021;2(1).
27. Agampodi TC, Agampodi SB, Glozier N, Siribaddana S. Measurement of social capital in relation to health in low and middle income countries (LMIC): a systematic review. *Social science & medicine*. 2015;128:95-104.
28. Marzali A. *Antropologi & Kebijakan Publik*. Jakarta: Prenada Media; 2015.



Figure 1. Banjarmasin is the city of a thousand rivers (photos by Herawati, 2020)



Figure 2. The physical condition of the River is plastics and polluted from household under the houses (photos by Herawati, 2020)



Figure 3. Fishing on the riverside (photos by Herawati, 2020)



Figure 4. Playing on the riverside (photos by Herawati, 2020)



Figure 5. Mosques on the riverside (photos by Herawati, 2020)



Figure 6. Household activities (photos by Herawati, 2020)



Figure 7. River as transportation stripe (photos by Herawati, 2020)



Figure 8. Resident's Boat (photos by Herawati, 2020)

Table 1. Sociodemographic of Participants

Participant ID	Sex	Age	Ethnic	Education degree	Occupation	Residence Time (years)	Name of River
M1.01	M	28	Banjarese	Senior high school	Private employee	28	Antasan Segera
M1.02	M	57	Banjarese	Elementary school	Dust man	31	Antasan Segera
M1.03	F	51	Banjarese	Elementary school	Housewife	51	Antasan Segera
M1.04	M	36	Banjarese	Junior high school	Housewife	14	Antasan Segera
M1.05	F	26	Banjarese	Junior high school	Housewife	26	Antasan Segera
M2.06	F	51	Banjarese	Senior high school	Housewife	18	Baguntan
M2.07	F	39	Banjarese	Junior high school	Housewife	15	Baguntan
M2.08	F	42	Banjarese	Elementary school	Housewife	18	Baguntan
M2.09	F	44	Banjarese	Senior high school	Housewife	20	Baguntan
M2.10	F	54	Banjarese	Senior high school	Housewife	19	Baguntan
M3.11	F	49	Banjarese	Senior high school	Seller	49	Banyiur Ampera
M3.12	M	59	Banjarese	Elementary school	Seller	50	Banyiur Ampera
M3.13	M	45	Banjarese	Elementary school	Seller	40	Banyiur Ampera
M3.14	M	41	Banjarese	Senior high school	Dustman	41	Banyiur Ampera
M3.15	F	48	Banjarese	Senior high school	Neighborhood	48	Banyiur Ampera
M4.16	M	36	Banjarese	Elementary school	Private employee	11	Pekapuran Laut
M4.17	F	32	Banjarese	Elementary school	Housewife	10	Pekapuran Laut
M4.18	M	37	Banjarese	Junior high school	Unemployment	37	Pekapuran Laut
M4.19	F	39	Banjarese	Junior high school	Housewife	11	Pekapuran Laut
M4.20	F	20	Banjarese	Junior high school	Housewife	10	Pekapuran Laut
M5.21	M	48	Banjarese	Elementary school	Security guard	25	Tungku
M5.22	M	60	Banjarese	Bachelor degree	Self-employee	24	Tungku
M5.23	F	39	Banjarese	Bachelor degree	Housewife	39	Tungku
M5.24	F	46	Banjarese	Senior high school	Housewife	30	Tungku
M5.25	F	52	Banjarese	Senior high school	Housewife	25	Tungku
M6.26	M	63	Banjarese	Elementary school	Tailor	20	Guring
M6.27	F	33	Banjarese	Senior high school	Housewife	33	Guring
M6.28	M	45	Banjarese	Senior high school	Self-employee	35	Guring
M6.29	M	46	Banjarese	-	Private employee	40	Guring
M6.30	M	58	Banjarese	Senior high school	Self-employee	34	Guring