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Bridging the Health Literacy Gap among Coastal Communities: The Role of Health Information Access in Pangkep Regency, Indonesia

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Abstract. *Health literacy is an important determinant of public health, particularly among coastal communities facing geographical barriers, limited access to health services, and unequal distribution of health information. This study aimed to describe health information access and health literacy levels among coastal communities in Tekolabbua Village, Pangkep Regency, Indonesia. A quantitative descriptive design was employed, involving 120 respondents selected through purposive sampling. Data were collected in January 2026 using a structured questionnaire covering demographic characteristics, sources of health information, and the European Health Literacy Survey Questionnaire 16-item short form (HLS-EU-Q16). Data were analyzed using descriptive statistics and presented as frequencies and percentages. The findings showed that the internet was the most frequently used source of health information (51.7%), followed by health workers (32.5%), printed media (7.5%), books/textbooks (5.8%), and research journal articles (2.5%). Most respondents were categorized as having interactive health literacy (52.5%), followed by critical health literacy (43.3%) and functional health literacy (4.2%). These findings indicate that coastal communities in Tekolabbua Village primarily rely on digital sources and health workers and generally demonstrate health literacy above the basic level. Strengthening digital health literacy and optimizing the role of health workers are essential to support informed health decision-making, climate-resilient health systems, sustainable development in marine-dependent populations, and reduced health inequalities caused by geographical isolation. These efforts align with SDG 3, SDG 4, SDG 10, and SDG 14 by enhancing community capacity to respond to environmental health risks.*

Keywords: *Health Literacy; Health Information Access; Coastal Communities; Digital Health Literacy; Health Workers*

1. Introduction

Health literacy is one of the important determinants in improving public health. In general, health literacy refers to an individual's ability to access, understand, appraise, and use health information and services to make appropriate decisions regarding personal, family, and community health. The World Health Organization emphasizes that health literacy is not merely related to the ability to read health information, but also includes critical thinking, interaction, and the ability to apply health information in daily life (1). Therefore, health literacy plays an essential role in health promotion, disease prevention, health-related decision-making, and the reduction of health inequalities within communities (2).

The concept of health literacy has evolved from a narrow understanding of reading health messages into a broader and multidimensional concept. Nutbeam classified health

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literacy into three levels: functional, interactive, and critical health literacy. Functional health literacy refers to basic reading and comprehension skills required to understand simple health information. Interactive health literacy includes communication and social skills that enable individuals to obtain, understand, and use health information in various situations. Meanwhile, critical health literacy represents a higher level of ability to critically analyze health information and use it in decision-making, as well as to increase control over health conditions. This classification indicates that health literacy is not only related to knowledge, but also closely associated with individual and community empowerment (3).

In the context of coastal communities, health literacy is a highly relevant issue. Coastal communities often face geographical, social, economic, and environmental challenges that may influence their access to health information and health services. Studies on coastal communities have shown that people living in coastal areas often experience health vulnerabilities, including limited access to healthcare services, higher risks of non-communicable diseases, and barriers to obtaining adequate preventive health information (4). In addition, the geographical characteristics of coastal and island areas may result in unequal distribution of health information and services, thereby widening health disparities.

Access to health information plays a central role in shaping the level of health literacy in the community. Health information can be obtained from various sources, including the internet, printed media, books, scientific journals, and health workers. In the digital era, the internet has become one of the increasingly dominant sources of health information. However, increased access to digital information does not always correspond to improved ability to assess the quality and credibility of information. Digital health literacy requires the ability to search, understand, evaluate, and use health information from electronic sources appropriately (5). Therefore, communities need not only access to health information, but also the ability to distinguish accurate information from inaccurate, irrelevant, or misleading information.

Several studies have shown differing perspectives regarding the relationship between access to health information and health literacy. Some literature emphasizes that improved access to information, particularly through digital technology, can strengthen knowledge, awareness, and the ability of individuals to make health-related decisions (5,6). However, other perspectives argue that access to information alone is insufficient if it is not accompanied by cognitive ability, education, support from health workers, and trust in information sources (7). In other words, the relationship between health information access and health literacy is not merely linear, but is influenced by social, cultural, educational, economic, communication-related, and institutional factors, including the availability of trusted information sources.

In Indonesia, health literacy has become increasingly important along with the growing use of the internet and digital health services. As an archipelagic country, Indonesia continues to face disparities in access to information and technology across regions, particularly between more developed areas and geographically remote areas. Studies on the digital health divide in Indonesia indicate that digital transformation in the health sector has the potential to improve access to health services and health information. However, it may also widen inequalities if it is not supported by equitable infrastructure and improved digital literacy among communities (6). This condition highlights the need for more contextual studies among coastal communities, including those in Pangkep Regency, South Sulawesi, which has coastal and island characteristics.

Tekolabbua Village, Pangkep Regency, is a relevant coastal area to be studied because the characteristics of its community are closely related to the marine environment, coastal socio-economic activities, and the need for health information that is accessible and easy to understand. In such communities, the sources of health information used by residents may influence their understanding of health issues. Health workers still play an important role as trusted sources of health information, while the internet is increasingly used as a source of health information. However, the dominance of internet-based information also requires the community to have the ability to assess the validity and credibility of health information.

Based on the above background, this study aims to describe access to health information and the level of health literacy among coastal communities in Tekolabbua Village, Pangkep Regency. This study is important because it provides an overview of the most frequently used sources of health information and the community's ability to understand, communicate, appraise, and use health information.

Unlike previous studies that have examined health literacy in general Indonesian populations or clinical settings, this study is novel in its focus on a specific coastal community in Pangkep Regency, Indonesia. By using the HLS-EU-Q16 instrument, this study provides detailed evidence on both health information sources and levels of health literacy, including functional, interactive, and critical health literacy. Furthermore, this study offers context-specific insights into coastal communities in eastern Indonesia, thereby providing an evidence base for the development of targeted and culturally appropriate health communication strategies in geographically diverse and resource-limited settings.

Moreover, strengthening health literacy in coastal communities has important implications for climate change adaptation and environmental health risk reduction. Coastal populations face unique environmental health challenges, including sea-level rise, marine pollution, extreme weather events, and changing fisheries resources, all of which may affect livelihoods, nutrition, sanitation, disease exposure, and access to health services. Improving health literacy enables communities to understand, anticipate, and respond to these environmental health threats, thereby supporting SDG 13 (Climate Action) and SDG 14 (Life Below Water), in addition to promoting health equity and sustainable development among marine-dependent populations.

2. Methods

This study employed a quantitative descriptive design to examine health information access and health literacy levels among coastal communities in Tekolabbua Village, Pangkep Regency, South Sulawesi, Indonesia. The study was conducted in January 2026 and involved 120 respondents selected using a purposive sampling technique.

The inclusion criteria were permanent residents of Tekolabbua Village aged 18 years or older who were able to communicate effectively in Indonesian or a local language understood by the researcher. The exclusion criteria included temporary residents and respondents who did not complete the questionnaire.

Data were collected using a structured questionnaire consisting of demographic characteristics, sources of health information, and health literacy assessment items. Health literacy was measured using the European Health Literacy Survey Questionnaire 16-item short form (HLS-EU-Q16), which is widely used to assess health literacy in adult and general populations (8). The instrument evaluates respondents' perceived ability to access, understand, appraise, and apply health information.

The responses to the HLS-EU-Q16 were scored using a dichotomized approach, in which responses indicating ease ("very easy" and "fairly easy") were coded as 1, while responses indicating difficulty ("fairly difficult" and "very difficult") were coded as 0. The total score ranged from 0 to 16, with higher scores indicating higher levels of health literacy.

In this study, health literacy was categorized into three levels—functional, interactive, and critical—by aligning the overall score patterns with Nutbeam's health literacy framework. Respondents with lower scores were categorized as having functional health literacy, those with moderate scores as having interactive health literacy, and those with higher scores as having critical health literacy, reflecting increasing capacities to access, understand, communicate, and critically evaluate health information. Although the HLS-EU-Q16 is commonly classified into inadequate, problematic, and sufficient levels, this study adapted the categorization to better reflect the conceptual distinctions proposed by Nutbeam.

Health information access was classified based on respondents' primary sources of information, including the internet, books/textbooks, printed media, research journal articles, and health workers. Data were analyzed using descriptive statistics and are presented as frequencies and percentages.

3. Results and Discussion

A total of 120 respondents from the coastal community of Tekolabbua Village, Pangkep Regency, were included in this study. The results are presented descriptively using frequencies and percentages to describe respondents' sources of health information and their levels of health literacy.

3.1. Results

3.1.1. Sources of Health Information

Table 1 presents the distribution of respondents based on their main sources of health information. The most frequently reported source of health information was the internet, used by 62 respondents (51.7%). This was followed by health workers, reported by 39 respondents (32.5%). Other sources were less frequently used, including printed media by 9 respondents (7.5%), books/textbooks by 7 respondents (5.8%), and research journal articles by 3 respondents (2.5%).

Table 1. Distribution of Respondents by Source of Health Information

Source of Health Information	n	%
Internet	62	51.7
Books/Textbooks	7	5.8
Printed media	9	7.5
Research journal articles	3	2.5
Health workers	39	32.5
Total	**120**	**100.0**

These findings indicate that digital sources, particularly the internet, were the dominant source of health information among respondents. However, health workers also remained an important source of information for the coastal community.

3.1.2. Health Literacy Levels

Table 2 shows the distribution of respondents according to their health literacy levels. Most respondents were categorized as having interactive health literacy, with 63 respondents (52.5%). Meanwhile, 52 respondents (43.3%) were categorized as having critical health literacy, and only 5 respondents (4.2%) were categorized as having functional health literacy.

Table 2. Distribution of Health Literacy Levels among Respondents

Health Literacy Level	n	%
Functional	5	4.2
Interactive	63	52.5
Critical	52	43.3
Total	**120**	**100.0**

Note. Functional health literacy refers to basic reading and comprehension skills required to understand simple health information; interactive health literacy refers to more advanced cognitive and social skills to communicate and apply health information in daily life; critical health literacy refers to the ability to evaluate health information and use it for informed decision-making.

The findings show that the majority of respondents had health literacy above the basic level. The predominance of interactive health literacy suggests that most respondents were able to understand, communicate, and apply health information in daily life. The relatively high proportion of respondents with critical health literacy also indicates that many respondents had the ability to evaluate health information and use it to support health-related decision-making.

Overall, the results show that the coastal community in Tekolabbua Village primarily relied on the internet and health workers as sources of health information. In terms of health literacy, most respondents were categorized as having interactive health literacy, followed by critical health literacy, while only a small proportion had functional health literacy. These results suggest that although access to digital information is dominant, the role of health workers remains important in supporting the community's understanding and use of health information.

3.2. Discussion

This study found that the internet was the most frequently used source of health information among coastal communities in Tekolabbua Village, reported by 51.7% of respondents, followed by health workers at 32.5%. This finding indicates that digital sources have become an important channel for health information, even in coastal community settings. From the perspective of health literacy theory, access to information is a fundamental component of health literacy because individuals need to obtain, understand, appraise, and apply health information to make informed health-related decisions (1). Health literacy is not only a matter of receiving information, but also involves the ability to critically evaluate and use that information in daily life (3).

The dominance of the internet as a source of health information in this study is consistent with recent studies showing that digital platforms increasingly influence how individuals seek and use health information. Algifari et al. in a study among the general population in Indonesia, found that many respondents were able to find useful health

resources on the internet and use online information to answer health-related questions (9). Similarly, Yuen et al. reported that digital health literacy is associated with sociodemographic factors, health resource use, and health outcomes, indicating the growing importance of digital competence in navigating health information (10).

The finding that more than half of respondents used the internet as their main source of health information may reflect increasing digital penetration and smartphone use in Indonesia. However, this also raises concerns about the quality and credibility of health information accessed online. Recent literature emphasizes that digital access does not automatically lead to adequate health literacy, because individuals must also be able to evaluate whether information is accurate, relevant, and trustworthy (11). This is particularly important in the current digital environment, where health misinformation can spread rapidly through social media and other online platforms (12,13).

Although the internet was identified as the most frequently used source of health information, this study did not further classify the specific types of internet sources accessed by respondents, such as social media, government health websites, news portals, search engines, or health-related mobile applications. This is an important limitation because different online platforms may vary substantially in credibility, accessibility, language use, and the potential risk of misinformation. Future studies should identify the specific digital platforms used by coastal communities to obtain health information, as this information would be valuable for designing more targeted digital health literacy interventions and context-specific health communication strategies.

The role of health workers as the second most common source of health information in this study also deserves attention. Although the internet was the dominant source, nearly one-third of respondents still relied on health workers. This suggests that interpersonal communication remains important in coastal communities, particularly because health workers are often perceived as trusted and authoritative sources of health information. Alhewiti found that physicians and healthcare workers were among the most trusted sources of health information, while social media was among the least trusted sources (14). This supports the present finding that health workers continue to play a strategic role in helping communities interpret, verify, and apply health information obtained from other sources.

In terms of health literacy level, the majority of respondents in this study were categorized as having interactive health literacy (52.5%), followed by critical health literacy (43.3%), while only 4.2% had functional health literacy. This finding suggests that most respondents had health literacy beyond the basic level. According to Nutbeam's framework, interactive health literacy reflects more advanced cognitive and social skills that enable individuals to communicate about health, extract meaning from different forms of communication, and apply information in changing circumstances (3). The relatively high proportion of critical health literacy also indicates that many respondents may have the ability to evaluate health information and use it to support health-related decision-making.

This result is in line with studies showing that increased exposure to health information, especially through digital media, can improve people's ability to engage with health content. Causio et al. in a systematic review, reported that digital health interventions such as mobile health applications, online platforms, and telehealth services can enhance health literacy across diverse populations, although the impact may vary depending on access and socioeconomic conditions (15). Mukhtar et al. also found that digital health literacy

interventions can improve health literacy, medication adherence, self-confidence, and healthcare access, particularly among marginalized communities (16).

The findings are also consistent with the view that digital literacy is emerging as a new determinant of health. Arias López et al. found that digital health literacy is related to individuals' ability to find and use health information through technology, and that higher digital health literacy is associated with better self-management, participation in medical decision-making, mental health, and quality of life (17). In this context, the high proportion of interactive and critical health literacy among respondents may be partly explained by the widespread use of the internet as a source of health information.

However, the findings should be interpreted carefully because high access to online information does not always guarantee high-quality health decision-making. Studies have shown that health literacy is influenced not only by access to information, but also by education, age, socioeconomic status, digital skills, trust, and the ability to evaluate information. For example, Nababan highlighted that Indonesia still faces a digital health divide, with disparities in internet access, digital literacy, and infrastructure across regions (6). This is highly relevant for coastal and island areas, where geographical barriers and unstable network quality may affect the consistency and quality of access to health information.

In the Indonesian archipelagic context, the findings of this study should also be compared with evidence from other coastal, island, and remote settings. Leosari et al. in their spatial evaluation of healthcare accessibility across archipelagic communities in Maluku Province, reported substantial geographical disparities in access to primary health centers and hospitals, as well as unequal distribution of health personnel across island districts (18). Similarly, Jaya et al. in a study on information-seeking behavior among coastal communities in Southeast Sulawesi, found that information-seeking practices in coastal populations were still strongly influenced by manual or experiential sources, while technological barriers remained an important obstacle (19). Compared with these settings, the relatively high proportion of interactive and critical health literacy in Tekolabbua Village may suggest that this community has comparatively better exposure to health information channels, including the internet and health workers.

The relatively high interactive and critical health literacy found in this study may also be influenced by contextual factors specific to Tekolabbua Village. Its proximity to the regency administrative center, transportation access, mobile network availability, and exposure to local health programs may have contributed to respondents' ability to obtain, communicate, and apply health information. Health promotion activities delivered through primary healthcare centers, community health workers, village-based health education, maternal and child health services, or other local public health programs may also strengthen community engagement with health information. Therefore, the findings should not be generalized to all coastal or island communities in Indonesia, particularly remote areas with more limited transportation infrastructure, fewer health workers, weaker internet connectivity, or lower exposure to organized health promotion programs. Future research should examine how distance to health facilities, participation in local health programs, digital connectivity, and community-based health promotion influence health literacy among coastal and island populations.

Several studies are not fully consistent with the present findings. Rokhmah et al. in a study among female sex workers in the coastal area of Jember, Indonesia, found no significant

relationship between access to HIV/AIDS information and health literacy (20). This difference may be due to variation in population characteristics, stigma-related issues, type of health information, and the sensitivity of HIV/AIDS topics, which may affect respondents' willingness to seek, discuss, and apply health information. In contrast, the present study focused on general health literacy among community members, which may involve broader and less stigmatized health information.

Another study that differs from the present findings was conducted among coastal residents in Karnataka, India, where health literacy and eHealth literacy were found to have only a positive but weak correlation (21). This suggests that individuals may have adequate general health literacy but still lack sufficient digital health literacy, or vice versa. The difference may be explained by variations in digital infrastructure, educational background, occupational characteristics, and the distinction between general health literacy and eHealth literacy. Therefore, while the internet was the dominant source of information in the present study, digital access alone should not be interpreted as evidence of strong digital health literacy.

The present findings also differ from Lamot and Kirbiš, who found that although the HLS-EU-Q16 demonstrated adequate validity and reliability, its predictive validity was weaker for some health behaviors such as smoking, alcohol consumption, and physical activity (22). This suggests that health literacy may not always directly translate into healthier behavior. In the context of Tekolabbua Village, although most respondents had interactive or critical health literacy, further research is needed to examine whether this literacy level is associated with actual health behaviors, such as preventive care, sanitation practices, nutrition, health service utilization, and chronic disease prevention.

The findings of this study also have important implications for coastal health promotion. Coastal communities often face specific health challenges related to geography, livelihood, environmental exposure, and limited service accessibility. The Chief Medical Officer's Annual Report on health in coastal communities emphasized that coastal populations may experience poorer health outcomes, lower life expectancy, and higher disease burden due to structural and geographic factors (23). Similarly, Asthana and Prime argued that digital transformation may support health improvement in coastal communities but may also worsen inequalities if the digital divide is not addressed (24).

Therefore, improving health literacy in coastal communities should combine digital and interpersonal strategies. Digital platforms can be used to disseminate health education materials, while health workers can help verify information, provide culturally appropriate explanations, and strengthen trust. This approach is consistent with WHO's recommendation that improving health literacy requires action at personal, organizational, and systemic levels, particularly for marginalized communities and populations at risk of health inequities (1).

Overall, this study suggests that health information access and health literacy among coastal communities in Tekolabbua Village are relatively promising, as indicated by the dominance of interactive and critical health literacy. Nevertheless, the high reliance on the internet requires efforts to strengthen digital health literacy, particularly the ability to evaluate credibility, avoid misinformation, and apply information appropriately. The continued role of health workers should also be optimized as trusted sources of health information. These findings support the need for contextual, community-based, and digitally supported health communication strategies to promote critical health literacy among coastal communities.

Limitations

This study has several limitations. First, the use of a descriptive design does not allow for the analysis of associations between health literacy and other variables such as age, education, and occupation. Second, the study was conducted in a single coastal village, which may limit the generalizability of the findings to other coastal or island communities in Indonesia. Third, the use of self-reported data may introduce social desirability bias, as respondents may provide answers that they perceive as favorable. Fourth, this study did not include behavioral outcome measures to assess whether health literacy levels translate into actual health behaviors. Future research is recommended to conduct analytical studies examining determinants of health literacy and intervention studies aimed at improving digital health literacy among coastal communities.

Conclusions

This study shows that the internet and health workers are the main sources of health information among coastal communities in Tekolabbua Village, while most respondents demonstrate interactive and critical health literacy. These findings indicate that the community has health literacy above the basic level, but still requires support to strengthen digital health literacy and critical evaluation of health information.

Practical interventions should include community-based digital health literacy training, education on identifying credible online sources, and the use of locally relevant digital media such as WhatsApp groups, short videos, and village-based health campaigns. Health workers should be trained to address digital health misinformation through clear, evidence-based, and culturally appropriate communication. In addition, community health workers or kaders can serve as intermediaries between digital information and interpersonal communication by helping residents understand health messages, verify information, and connect with formal health services.

Health literacy programs should also integrate environmental health and climate-related risks, including sea-level rise, marine pollution, extreme weather events, and changes in fisheries resources. Strengthening health literacy in coastal communities can support informed health decision-making, reduce inequalities caused by geographical isolation, enhance climate-resilient health systems, and contribute to SDG 3, SDG 4, SDG 10, SDG 13, and SDG 14.

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Conflicts of Interest

The authors declare no conflict of interest

References

1. World Health Organization. Low health literacy is costing health [Internet]. World Health Organization; 2025. Available from: http://dx.doi.org/10.2471/b09619 doi:10.2471/b09619
2. Nutbeam D, Levin-Zamir D, Rowlands G. Health literacy and health promotion in context. Glob Health Promot. 2018;25(4):3–5. doi:10.1177/1757975918814436
3. Nutbeam D. Health literacy as a public health goal: 25 years on. Health Promot Int. 2025;40(4). doi:10.1093/heapro/daaf119
4. Maziyya N, Nurhamsyah D. Understanding the Health Landscape of Coastal Communities: A Review on Non-Communicable Diseases. Journal of Nursing Care. 2026;8(3). doi:10.24198/jnc.v8i3.64334
5. Maulia JTT. Bridging the Digital Divide: Policy Solutions for Improving Digital Health Literacy and Healthcare Accessibility. Journal of Health Literacy and Qualitative Research. 2023;3(2):57–69. doi:10.61194/jhlqr.v3i2.510
6. Nababan H. Digital health divide in Indonesia: evidence from national-level data. Eur J Public Health. 2024 Oct;34(Supplement_3). doi:10.1093/eurpub/ckae144.426
7. Putri LD, Agustin H, Bakti I, Suminar JR. Addressing Health Illiteracy and Stunting in Culture-Shocked Indigenous Populations: A Case Study of Outer Baduy in Indonesia. Int J Environ Res Public Health. 2024;21(9):1114. doi:10.3390/ijerph21091114
8. Sørensen K, Van den Broucke S, Pelikan JM, Fullam J, Doyle G, Slonska Z, et al. Measuring health literacy in populations: illuminating the design and development process of the European Health Literacy Survey Questionnaire (HLS-EU-Q). BMC Public Health. 2013;13(1). doi:10.1186/1471-2458-13-948
9. Algifari MH, Zachary L, Yuliani RP, Aditama H, Kristina SA. Digital Health Literacy and Its Associated Factors in General Population in Indonesia. Indonesian Journal of Pharmacy. 2024. doi:10.22146/ijp.5640
10. Yuen E, Winter N, Savira F, Huggins CE, Nguyen L, Cooper P, et al. Digital Health Literacy and Its Association With Sociodemographic Characteristics, Health Resource Use, and Health Outcomes: Rapid Review. Interact J Med Res. 2024;13:e46888. doi:10.2196/46888
11. Fitzpatrick PJ. Improving health literacy using the power of digital communications to achieve better health outcomes for patients and practitioners. Front Digit Health. 2023;5. doi:10.3389/fdgth.2023.1264780
12. Kbaier D, Kane A, McJury M, Kenny I. Prevalence of Health Misinformation on Social Media—Challenges and Mitigation Before, During, and Beyond the COVID-19 Pandemic: Scoping Literature Review. J Med Internet Res. 2024;26:e38786. doi:10.2196/38786
13. Ishizumi A, Kolis J, Abad N, Prybylski D, Brookmeyer KA, Voegeli C, et al. Beyond misinformation: developing a public health prevention framework for managing information ecosystems. Lancet Public Health. 2024;9(6):e397–406. doi:10.1016/s2468-2667(24)00031-8
14. Larsen CB, Gilstad H. Trust and distrust toward online health information in nurse–patient communication and implications for eHealth literacy. J Commun Healthc. 2023;16(4):412–20. doi:10.1080/17538068.2023.2279397

15. Causio FA, Fakhfakh M, Kaur J, Sert B, Gandolfi S, Di Pumpo M, et al. Digital Health Interventions' Impact on Health Literacy: A Systematic Review. Eur J Public Health. 2024;34(Supplement_3). doi:10.1093/eurpub/ckae144.1201
16. Mukhtar T, Babur MN, Abbas R, Irshad A, Kiran Q. Digital Health Literacy: A systematic review of interventions and their influence on healthcare access and sustainable development Goal-3 (SDG-3). Pak J Med Sci. 2025;41(3):910–8. doi:10.12669/pjms.41.3.10639
17. Arias López M del P, Ong BA, Borrat Frigola X, Fernández AL, Hicklent RS, Obeles AJT, et al. Digital literacy as a new determinant of health: A scoping review. PLOS Digital Health. 2023;2(10):e0000279. doi:10.1371/journal.pdig.0000279
18. Leosari Y, Uelmen JA, Carney RM. Spatial evaluation of healthcare accessibility across archipelagic communities of Maluku Province, Indonesia. PLOS Global Public Health. 2023;3(3):e0001600. doi:10.1371/journal.pgph.0001600
19. Jaya A, Jopang, Ibrahim C, Herman LO, Susilawaty FT. Information Seeking Behavior Of Coastal Society In Southeast Sulawesi. Literatify : Trends in Library Developments. 2024;5(1):29–44. doi:10.24252/literatify.v5i1.42836
20. Rokhmah D, Imama I, Lestari NI, Mahda AA, Rohmah DAI, Khoiron. Behaviour and Information Access With Health Literacy About HIV / AIDS In Female Worker (FSW) In Coastal Area of Jember Indonesia. In. 2024. p. 100–7. doi:10.2991/978-94-6463-421-1_12
21. Krishna V, Pai RR, Alathur S. Assessing Coastal Residents Health Literacy (HL) and eHealth Literacy (eHL): Implications for Health Governance. Vision: The Journal of Business Perspective. 2024. doi:10.1177/09722629241303590
22. Lamot M, Kirbiš A. The validity and reliability of the Slovenian version of the health literacy questionnaire short-form (HLS-EU-Q16) among adults and older adults. Front Public Health. 2024;12. doi:10.3389/fpubh.2024.1474539
23. Chief Medical Officer. Chief Medical Officer's annual report 2021: Health in coastal communities. Department of Health and Social Care; 2021.
24. Asthana S, Prime S. The role of digital transformation in addressing health inequalities in coastal communities: barriers and enablers. Frontiers in Health Services. 2023;3. doi:10.3389/frhs.2023.1225757