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Efforts to Improve Clean Water Quality to Support Community Health

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Abstract
Water is a fundamental part for every human being to survive and maintain his health, and therefore must also be seen as a major element in the fulfillment of the right to a decent standard of living. Water is the source of life for living things, especially humans, which develop with various kinds of basic human needs. Water is a primary need that is needed for daily needs such as drinking, cooking, bathing to industrial processing needs so that the function of water is not only limited to carrying out economic functions, but also as a social and cultural function. The water sector is getting significant attention. Therefore, the goal of Sustainable Development Goals 6thensures the availability and sustainable management of clean water and sanitation for all. In order to achieve the goal of clean water and proper sanitation by 2030. This article uses a Systematic review based on Preferred Reporting Items for Systematic Review & Meta-Analysis (PRISMA) in order to identify all published literature (2011-2021) using relevant keywords. The literature collected is sourced from databases from Google, Google Scholar, PubMed, Emerald Insight, DOAJ. A total of 70 pieces of literature were collected, after screening based on inclusion and exclusion criteria, there were 7 articles that would be analyzed further. After the literature is collected and analyzed, it can be found that clean water is one of the main elements in human life which is an integral part of all humans. Living things cannot live if there is no water, so water is needed to maintain the survival of living things. Water in the human body is very useful for filling fluids in the body by drinking water. In addition to thirst quencher and other main benefits of water for the body, water also has other benefits that are needed to support life. To get clean water, it must meet the requirements of 3 main parameters, namely the requirements, physical, chemical requirements, and bacteriological requirements. Clean water is very important for human life, but water quality must be maintained so that water does not endanger public health. By using clean water we can avoid diseases such as diarrhea, cholera, dysentery, typhoid, intestinal worms, skin diseases to poisoning. Clean water must meet 3 main parameters, namely; physical requirements, chemical requirements, and bacteriological requirements.
Keywords: Efforts ; Clean Water Quality; Public Health;

Introduction

Clean water is one of the primary human needs. Water is very important for life because water is one of the prerequisites for measuring the quality of human life. According to the WHO (*World Health Organization*), clean water is one type of resource based water that is of good quality and is commonly used by humans for consumption or in carrying out daily activities including sanitation (WHO 2011). Not all water can be used in our daily life. Water that has been contaminated by pollution is very dangerous if we use it. The amount of water pollution, dry springs, and many wells contaminated by industrial wastes are strong evidence of poor sanitation and lead to diseases such as diarrhea, cholera, dysentery, hepatitis (Thompson, Sobsey, and Bartram 2003). In the WHO report (2019), diseases caused by WASH (*water, sanitation, hygiene, and health)* reached 4.6% globally and 3.3% by death. 829 000 WASH-related deaths were from diarrheal disease. Cholera is still endemic in 69 countries, resulting in approximately 2.9 million cases and 95,000 deaths per year worldwide (WHO 2019). Sanitation and security of drinking water must really be considered in order to get clean water.

Water is essential for sustaining life, and an adequate supply of which is safe for lifelong consumption and is increasingly under threat as the human population grows and demands more and more high quality water for domestic use as well as activities such as agriculture, fishing and industry (Hunter, MacDonald, and Carter 2010). Therefore, in the discussion forum of the United Nations (UN) regarding global development, clean water and sanitation are one of the targets in the program designed by the United Nations, namely the Millennium Development Goals (MDGs) which ended in 2015. To continue the MDGs, developed a concept in the context of the post-2015 development agenda called Sustainable Development Goals (SDGs) (Morton, Pencheon, and Squires 2017). The SDGs concept is needed as a new development agenda that accommodates all the changes that occurred post-2015, especially related to the changing world situation since 2000 regarding the issue of natural resource depletion, environmental damage, climate change, social protection, food and energy security, and development. more pro-poor.

SDGs 6 (*Clean water and sanitation*) ensures that people achieve universal access to clean water and sanitation. Everyone on earth should have access to safe and affordable drinking water. That is the goal for 2030 (G�nevaux 2018). While many people drink clean water and sanitation for granted, many others do not. Water scarcity affects more than 40% of people worldwide, and that number is projected to be even higher as a result of climate change. Not anticipating through international cooperation, protecting wetlands and rivers, sharing water treatment technologies that lead to achieving this Goal. Otherwise, by 2050 at least one in four people is likely to be affected by repeated water shortages (UNDP, 2020).

According to WHO 2.5% of fresh surface water, and most of it lies frozen and inaccessible in the ice and *sheet Greenland*, less than 1% of freshwater is accessible in lakes, river channels, and underground. Hydrologists estimate that the average annual flow of all the world's freshwater ranges from 35,000 Km3 to 50,000 Km3. Increased pollution from municipal and industrial sewage, leaching of fertilizers and pesticides used in agriculture, only about a third of the world's potential freshwater can be used for human needs. As pollution increases, the amount of usable water decreases (Organization 2009).

Improving the quality of life of the community Clean water is one of the elements in the most important human needs needed by the human body to stay alive. Lately, many

problems have arisen as a result of human behavior that violates the way drinking water is managed in the environment (Levallois and Villanueva 2019). Various background problems poor sanitation and safety of drinking water including; water pollution, water sources dry up, clean water becomes an expensive commodity, the seasons are uncertain again, and wells have been polluted due to industrial waste, and so on (Zhang et al. 2010). Sanitation and safeguarding water quality currently need special attention given the increasing number of actions that are not correct for the safety and cleanliness of drinking water in our environment, because if this is ignored, it will become a big problem for all living things, especially humans, so that in finally there are pollution and water pollution (Luo et al. 2019).

Water pollution or water pollution is the entry of substances, energy, elements or other components into water so that water quality is disturbed (Madhav et al. 2020). Recently, There are many drinking water that do not meet the standards both in terms of quality and quantity, and this is very influential if it is not provided properly. In terms of quality, currently drinking water has a lot that does not reach the standard of eligibility for consumption, and when viewed in terms of quantity, now relatively clean drinking water is no longer able to meet the ever-increasing demand (Susanti and Miardini 2017). This is because water is also needed in various areas of life, not only for drinking.

The need and availability of clean water must be balanced, but there are some areas that are still experiencing problems with water availability, for example Asia and the Pacific only have 36% of water resources, the availability of water per capita is the lowest in the world. About half of the rural population in Asia and the Pacific does not have access to improved sanitation. With limited water availability and limited knowledge about water management, people consume unhealthy/clean water, especially in developing countries. However, the water that we use every day, such as drinking, cooking, bathing, etc., must be clean so that we can avoid diseases caused by poor water quality (Orgill et al. 2013).

Public health is affected by various pathogenic agents, bacteria, and organic substances present in unsafe drinking water. Most of the population in developing countries suffer from health related problems due to unsafe drinking water and microbial contamination (Levallois and Villanueva 2019). Water in the human body is very useful for filling fluids in the body by drinking water. In addition to thirst quencher and other main benefits of water for the body, water also has other benefits that are needed to support life. Water quality depends on the composition of water which is influenced by natural processes and community activities. Water quality is based on water parameters (physical, chemical, and microbiological), and public health is at risk if its value exceeds the limits set by WHO and Centers for Disease Control (CDC) (Akter et al. 2016).

Human needs for clean water are very complex, among others, for drinking, cooking, bathing, washing (various kinds of laundry), and so on. According to WHO calculations in developed countries, each person needs between 60-120 liters of water per day. Whereas in developing countries including Indonesia every year people need between 30-60 liters of water per day, for washing, cooking, and for agriculture. Therefore, the means of providing drinking water is one of the important needs for the community and the government is obliged to fulfill it.

Water needs by humans can take water from the ground, surface water, or directly from rainwater. Of the three water sources are water land has the most widely used because groundwater has several advantages compared to other sources, partly because of the water quality is better and the influence due to the relatively small pollution (Arcipowski et al. 2017)The groups at risk of contracting diseases due to unclean or healthy conditions are

those most at risk of contracting water-borne diseases are infants and children, people who are weak or living in unsanitary conditions and the elderly.

One of the main problems faced with regard to water resources is the quantity of water that is no longer able to meet the ever-increasing demand and the quality of water for domestic use is decreasing from year to year. Industrial, domestic and other activities have a negative impact on water resources, including a decrease in water quality (Bradford et al. 2016). This condition can cause a disturbance, damage, and danger to living things that depend on water resources. In the future, the protection and preservation of water resources should be one of the main human priorities. Use of water for various needs should pay attention to water quality parameters appropriate quality standards set by the WHO (Havelaar and Melse 2003).

Water quality that does not meet the requirements is considered to have an impact on the occurrence of skin health complaints and other diseases such as diarrhea, dysentery, cholera, hepatitis A, lead poisoning, polio, and trachoma. Water quality is very dependent on the cleanliness of the environment around the water source, polluted water is the cause of disease. Skin diseases can be transferred to other people through polluted water and lack of clean water for personal hygiene purposes. Therefore, the main purpose in writing this *systematic review* is to know and understand the quality of clean water to support public health.

Method

1. Protocol

A protocol sets out the objectives and methods for conducting article reviews in writing a *systematic review*, starting from study search, screening, data extraction, and analysis. *Systematic Review* is one method that uses reviews, studies, structured evaluations, classifications, and categorizations of *evidence-based evidence* that has been produced previously (Pullin and Stewart 2006). Literature search uses comprehensive strategies, such as searching for articles in research journal databases, searching through the internet, reviewing articles. Database searches used include Google, Google Scholar, PubMed, Emerald Insight, and several WHO documents. The purpose of this article search is to get quality and relevant articles to your needs. Article search is limited to articles in English and international publications. The total number of articles obtained is 70 and out of these 70 articles, a selection process will be carried out to meet the inclusion and exclusion criteria. The protocol and evaluation of the *Systematic Review* will use the PRISMA *checklist* to determine the selection of studies that have been found and adapted to the objectives of this *Systematic Review*.

2. Inclusion and Exclusioninclusion and exclusion

The criteria use the PICOS *framework*, as follows:

a. *Population/problem* that populations or issues to be analyzed in accordance with the title that has been determined in *systematic review* this

b. *Intervention* is a management action on individual or community cases and an explanation of study management in accordance with the themes that have been determined in a *systematic review*.

c. *Comparation* is an intervention or other management that is used as a comparison if there is no one who can use the control group in the selected study.

d. *Outcomes* are results or outcomes obtained in previous studies that are in accordance with the themes that have been determined in a *systematic review*.

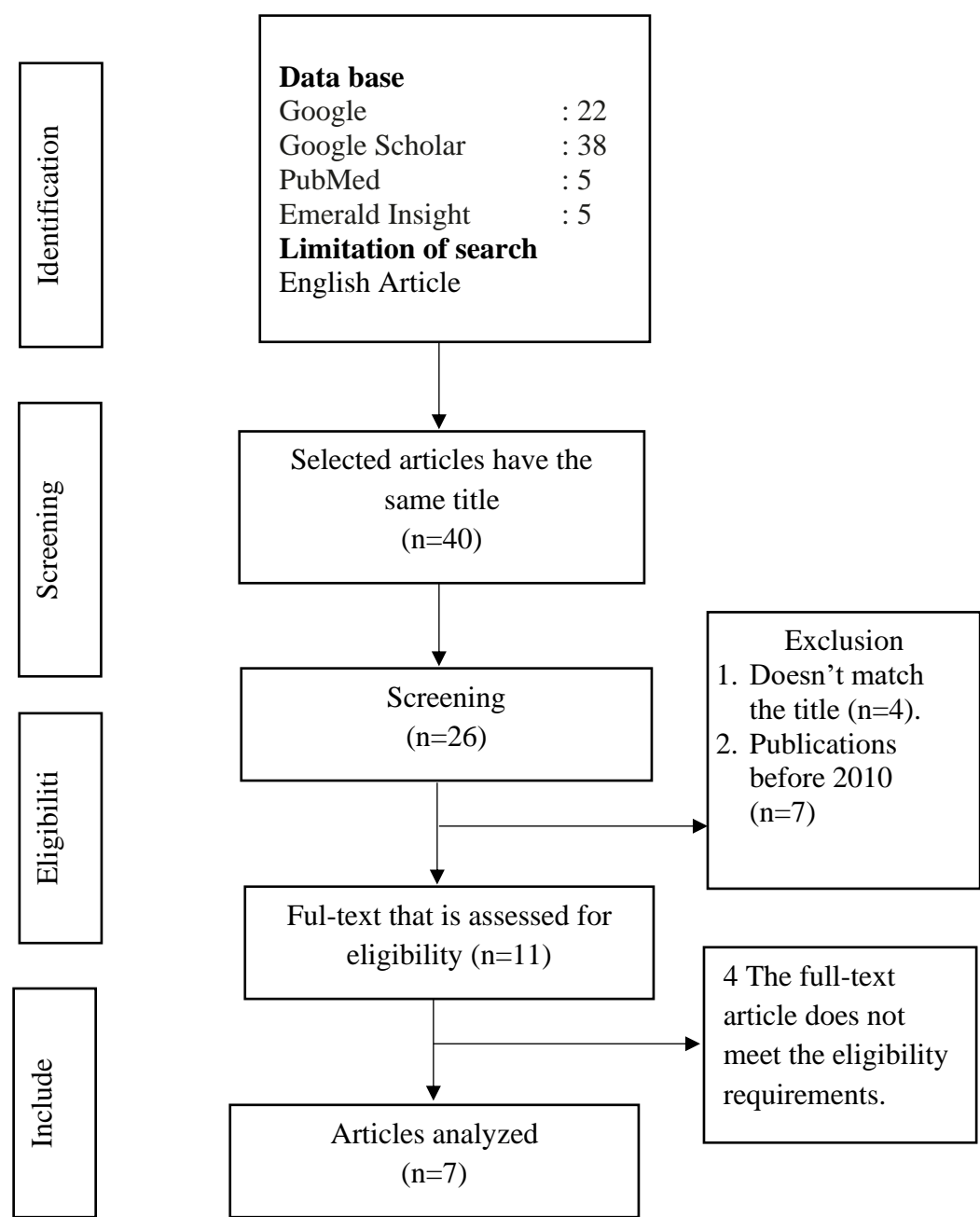e. *Study design* is the research design used in the article to be reviewed.

Table 1.1, inclusion and exclusion

Criteria	Inclusion	Exclusion
Population/problem	International and related articles on the topic of efforts to improve the quality of clean water to support public health	International articles that are not related to the topic, namely efforts to improve clean water quality to support public health
Intervention	Don't use intervention	Don't use intervention
Comparation	Nothing	Nothing
Outcome	Knowing and understanding efforts to improve clean water quality to support public health	Do not know and understand efforts to improve clean water quality to support public health.
Study design	All types of research designs Publication type: open access research article	Nothing
Publication Year	2011-2021	before 2011 or after 2021
language	English	Other than English

3. Article Selection

From the results of a literature search through publications namely Google, Google Scholar, PubMed, Emerald Insight, using the keyword "non-medical waste management", found 70 journals that match these keywords. The journals are then screened or selected using *PRISMA Flow diagrams* to describe the process of selecting various feasibility studies which articles do not meet the inclusion inclusion criteria so that 7 journals are obtained for review.

Figure 1.2, Article review flowchart

4. Relevance of The Study

Relevance of the study, namely the search for articles based on the database to improve the quality of the writings made. A systematic way to collect, critically evaluate, integrate and present findings from various research studies on a research question or topic of interest and provide a level of broader and more accurate understanding.

Table 1.3 Study relevance

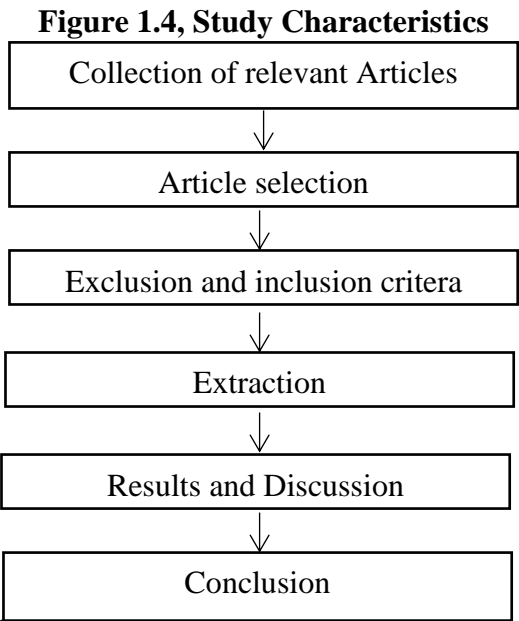| Captured Information Elements	Captured Information Elements
keywords	Clean water quality, public health
Research Purposes	The purpose of each research
Method	Research methods (Surveys, Experimental case studies, descriptive and others)
Research Instrument	The instruments used in the research are independent, moderation, mediation, and dependent
Sample	Sample size, as well as demographic data about respondents (p age, gender, race, education, occupation, etc.)
Results	Findings and results from each retrieved article
Conclusion	Conclusions from each article taken
Reference	Last 10 Years(2011-2021)

5.   Quality of study

After collecting articles (2011-2021) with a total of 70 articles in English based on the databases of Google, Google Scholar, PubMed, Emerald Insight and then screening the collected articles to see which ones meet the inclusion and exclusion criteria. After doing the screening based on the PRISMA *flow diagram,* 7 articles can be taken for further synthesis or analysis.

6.   Technique The Analysis Was

Analysis was carried out on articles that met the inclusion criteria (2011-2021) to draw conclusions.

Result and Discusion
Result

1.   The characteristics of this study

Systematic review with searching for information or articles using or working with Internet tools with open various internet sites as data sources. Opening the site begins by opening the page http://www.google.co.id, then search for article sources from Google, Google Scholar, PubMed, Emerald Insight by using keywords (clean water and public health) to be able to access articles that are in accordance with the purpose of writing a *Systematic Review*. After the articles are collected, they are analyzed according to the PRISMA diagram to get articles that fit the following stages

Figure 1.4, Study Characteristics

Collection of relevant Articles

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Article selection

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Exclusion and inclusion critera

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Extraction

↓

Results and Discussion

↓

Conclusion

2. The search process This article

The systematic review is a comprehensive summary of several research studies that are determined based on the theme of efforts to improve clean water quality in supporting public health. The process of searching or collecting articles was carried out from 25-30 October 2021, and 70 articles were found in English. Articles collected from various environmental health articles and other health journals are as shown in the following table:

Table 1.4, articles obtained

No.	Journal name	Volume	Amount
1.	Journal of Water and Health		2013	2
2.	Hindawi BioMed Research International	2017	1
3.	Journal of health population and nutrition	2016	1
4.	ELSEVIER	2014, 2015, 2011, 2019, 2020	5
5.	Journal of Contemporary Water Research & Education	2017	1
6.	Journal of Public Health and Epidemiology	2016	1
7.	Nature partner Journal	2018, 2019, 2020	3
8.	International Journal of Circumpolar Health	2016	1
9.	Environmental Toxicology and Chemistry,	2016	1
10.	Environ Monit Assess Journal	2012	1
11	International Journal of Enviromental research and public health	2017, 2018, 2019, 2019, 2020	5
12.	Journal of the American Water Resources Association	2011	1
13	Drinking water quality and public health	2015, 2019	2
14	BMJ Global Health	2018	1
15.	BMC Public Health	2015	1
16	International Journal of Public Sector	2018	1
Total			**28**

3. Data extraction The

Main data (information) taken from journals obtained from 2011-2021 include researchers and research years, titles, methods, analyzes and research results. This data extraction is very important in helping and tracing articles that can be analyzed and developed in the future. The data is entered in the data extraction form and will be displayed in the following table form:

Table 1.5, Data Extraction

No.	Author and Year	Article title	Method	Analysis	Results
1.	Tahera Akter1, Fatema Tuz Jhohura, Fahmida Akter, Tridib Roy Chowdhury, Sabuj Kanti Mistry, Digbijoy Dey, Milan Kanti Barua, Md Akramul Islam and Mahfuzar Rahman. (2016)	Water Quality Index for measuring drinking water quality in rural Bangladesh: a crosssectional study	a crosssectional study	Descriptive statistics	Drinking water at sample sites was slightly alkaline (pH 7.4 ± 0.4) but within acceptable limits. Manganese concentrations varied from 0.1 to 5.5 mg/L with a median value of 0.2 mg/L. The median iron concentrations in water exceeded WHO standards (0.3 mg/L) at most of the sample sites and exceeded Bangladesh standards (1.0 mg/L) at a few sample sites. Salinity was relatively higher in coastal districts. After laboratory confirmation, arsenic concentrations were found higher in Shibchar (Madaripur) and Alfadanga (Faridpur) compared to other sample sites exceeding WHO standard (0.01 mg/L). Of the total sampling sites, 33 % had good-quality water for drinking based on the Water Quality Index (WQI). However, the majority of the households (67 %) used poor-quality drinking water
2.	Taruna Juneja and Alankrita Chaudhary. (2013)	Assessment of water quality and its effects on the health of residents of Jhunjhunu district, Rajasthan: A cross sectional study	A cross sectional study	analyzed using Statistical Package for Social Sciences (SPSS 10)	Various sources for drinking water were tap (15.5%), well (13.0%), tube well (13.0%), and community water source supply (58%). Methods used for purification of drinking water included boiling (4.0%) and muslin cloth (7.5%), while 88.5% did not use any method for purification of drinking water.
3.	Lori E. A. Bradford, Lalita A. Bharadwaj, Udoka Okpalauwaekwe & Cheryl L. Waldner. (2016)	Drinking water quality in Indigenous communities in Canada and health outcomes: a scoping review	A scoping review	PRISMA Flowchart	Sixteen articles (of 518; 156 bibliographic search engines, 362 grey literature) met criteria for inclusion (contained keywords; publication year 20002015; peer-reviewed and from Canada). Studies were quantitative (8), qualitative (5) or mixed (3) and included case, cohort, cross-sectional and participatory designs. In most articles, no definition of ''health'' was given (14/16), and the primary health issue described was gastrointestinal illness (12/16). Challenges to the study of health and well-being with respect to drinking water in Indigenous communities included irregular funding, remote locations, ethical approval processes, small sample sizes and missing data.

4.	Jing Zhang. (2012)	The impact of water quality on health: Evidence from the drinking water infrastructure program in rural China	Literature Review	Using panel data covering about 4500 households from 1989 to 2006	The regression results imply that the illness incidence of adults decreased by 11 percent and their weight-for-height increased by 0.835 kg/m, and that children's weight-for-height and height itself both rose by 0.446 kg/m and 0.962 cm respectively, as a result of the program. And these estimates are quite stable across different robustness checks.
5.	Lorena Moreno, Mónica Pozo, Koenraad Vancraeynest, Robert Bain, Juan Carlos Palacios and Fausto Jácome. (2020)	Integrating water-quality analysis in national household surveys: water and sanitation sector learnings of Ecuador	Analysis are household surveys	The comparison of the water quality at the household's source level between 2016 and 2019.	This study concludes that alignment of the national monitoring systems to the SDG 6.1 framework provided strong evidence that water quality is the principal bottleneck in the water sector in Ecuador. Water-quality testing at the point of consumption was evidenced, as well as the importance of household water treatment and possible effects of other hygiene practices like handwashing with soap and open defecation on water quality at the point of consumption.
6.	Pingping LuoID, Shuxin Kang, Apip, Meimei Zhou, Jiqiang Lyu, Siti Aisyah, Mishra Binaya, Ram Krishna Regmi, Daniel Nover. (2019)	Water quality trend assessment in Jakarta: A rapidly growing Asian megacity	the Mann-Kendall test (MKT)	BOD trend analysis	The average value of BOD (Bio-chemical Oxygen Demand) is low in upper stream stations compared to middle and lower stream stations. BOD and TSS (Total Suspended Solids) trends of some water quality stations inmiddle and lower streams show increasing trends. Understanding water quality conditions and factors that control water quality suggest strategies for improving water quality givencurrent trends in climate, population growth and urban development.
7.	Eric C Strunz , David G Addiss , Meredith E Stocks , Stephanie Ogden , Jürg Utzinger , Matthew C Freeman (2014)	Water, Sanitation, Hygiene, and Soil-Transmitted Helminth Infection: A Systematic Review and Meta-Analysis	systematic review and meta-analysis	random-effects meta-analyses and analyzed	Observational evidence constituted the majority of included literature, which limits any attempt to make causal inferences. Due to underlying heterogeneity across observational studies, the meta-analysis results reflect an average of many potentially distinct effects, not an average of one specific exposure-outcome relationship.

4.   Synthesis of data from this

Systematic Review was synthesized using the narrative method by grouping similar extracted data according to the measured results to answer the objectives. writing.

Discussion

A.   Water quality

Water quality is influenced by several factors, among which the quality of water treatment is usually inadequate and water pollution is physically, chemically, and biologically (Li and Wu 2019). According to the *United States, Environmental Protection Agency* (EPA) quality criteria represent conditions (e.g., concentrations of certain chemicals, levels of certain parameters) sufficient to restore and maintain the chemical, physical, and biological integrity of a water body and protect the use of water properly and without harm to health. public. Water quality (water quality) is very important because it is the basis and guideline for achieving the objectives of water management by its designation. The availability of water and its chemical and biological composition affect the ability of the aquatic environment to maintain a healthy ecosystem. In addition, the supply of clean water that can be used in large quantities is a basic requirement for basic human needs, such as: for consumption, agricultural cultivation, industry, and also as energy for generating electricity. So the quality of water needed to maintain human health, the ecosystem is largely a function of the natural conditions.

Figure 1.6, Clean Water

According to research by Akter (2016), water quality depends on the composition of water which is influenced by natural processes and human activities. Water quality is characterized by water parameters (physical, chemical, and microbiological), and human health is at risk if the value exceeds acceptable limits (Chigor et al. 2012). Water quality is a major concern for many residents (communities) both in rural and urban areas. For this reason, interventions are needed to improve public health by providing better access to clean water, increasing education about the importance of clean water; and enhancing cross-sectoral cooperation[18]. Water quality states the level of suitability of water to be used to fulfill certain needs for human life, such as to irrigate crops, drink livestock, as well as direct needs for drinking, bathing, washing, and so on. Water quality is determined by the content of suspended sediment and chemicals dissolved in the water[26]. Each measured water quality parameter has different levels, depending on the area and human activities in the environment, and quality monitoring is needed to warn of hazards to public health.

Water as one of the mineral intakes, regulates body temperature, cell-forming, and facilitates digestion. Water in the human body, ranging from 50-70% of the total body weight. The importance of water for health can be seen from the amount of water present in organs, such as 80% of blood is water, losing 15% of body weight can lead to death (Shyamala, Shanthi, and Lalitha 2008). In addition, according to Khalife and Bidaisee (2018), the human body contains two-thirds of water, namely the brain is 95% water, the blood is 82% water, and the lungs are 90% water (Khalifa and Bidaisee 2018). For this reason, water must be maintained and managed properly, so that water quality is maintained. Clean water quality must meet 3 main water parameters, as follows:

1. Physical Requirements Physical

Characteristics of clean water, in general, must be clear, colorless, odorless, and tasteless (tasteless). Color is required in clean water for the community because of aesthetic considerations. Salty, sweet, bitter, sour, and so on should not be found in clean water for the community. The smell that can be found in water is a bad smell, fishy, and so on. Smell and taste are usually present together in the water. For example, increasing levels of color parameters, changing the color of the water from brownish to black can indicate the presence of chemicals such as ferrous metals, manganese, and cyanide from factory waste disposal. Water that has an unpleasant odor indicates that one of them is contamination by fecal Coli bacteria (E.coli) which can cause typhoid. If the water has been contaminated with heavy metals and E.coli bacteria, then the water will automatically taste (Sukmawati 2020).

2. Chemical Conditions Clean

Water must not contain excessive amounts of chemicals. Chemically, clean water should not contain toxic substances, should not contain substances that can cause health problems, should not contain substances that exceed certain levels so as to cause disorders technical, and should not contain certain chemicals that can cause economic disruption (Gardner 2018).

3. Biological

Requirements These biological requirements are also known as bacteriological requirements. Because it is used for drinking, drinking water should be free from all kinds of germs that contaminate it. Ensure drinking water is not contaminated by E.coli (Escherichia Coli) bacteria which are pathogenic bacteria that cause digestive disorders such as diarrhea and vomiting. Some other Coliforms that should be avoided are Salmonella Typhi which triggers typhoid fever (typhoid). When these bacteria enter through the mouth and spread in the body, this can lead to digestive disorder characterized by symptoms such as fever, headache, abdominal pain, and decreased appetite (Sukmawati 2020). Water Quality is a quality characteristic needed for human survival. Water quality must meet physical, chemical, biological requirements. Water quality management is an effort to maintain water so that the desired water quality is achieved according to its designation to ensure that water conditions remain in their natural condition.

B.   Benefits of clean water

Water pollution is one of the main causes of health problems in humans. Around 2.3 billion people suffer from water-related diseases worldwide (Azizullah et al. 2011). But water has great benefits for human life and the environment, as follows:

a.   For Health

The water we use every day such as drinking, cooking, bathing, and others must be clean so that we can avoid diseases caused by poor water quality. The benefits of clean water can be described as follows:

A healthier : Body The body really needs adequate fluid intake which can be obtained from drinks and foods that contain fluids. If the intake of water is sufficient, this can help to smooth the distribution of nutrients throughout the body so that all cells in the body can repair themselves with these nutrients. By drinking water as recommended will also lighten the work of the kidneys and liver so that it can help us to avoid kidney and liver disease (Bradford et al. 2016).

Facilitate digestion : Drinking water helps the disposal of toxins from metabolism more smoothly. This will help us avoid digestive diseases such as heartburn and constipation.

Maintain body fitness : Water can help to reduce excess heat in the body. When there is a lack of fluids, the body will feel weak and unfit. With the incoming water, the body can avoid dehydration, headaches or migraines, and improve digestion because the mineral content in it is very good for health. Clean water can also skin health care because it can maintain skin moisture so skin become healthy and fresh (Rahman and Akter n.d.).

b.   For the Environment

Besides water being beneficial for human survival, water is also used to maintain environmental ecosystems. For example, clean water can maintain river water biota and be used for irrigation and aquaculture. The protected ecosystem can be used as a means of recreation, education and learning (Arcipowski et al. 2017). In addition, it can make trees grow well. helps the photosynthesis process. useful for society.

Figure 1.7, Water and the environment

Water is also one of the easiest natural resources to manage because it can be transferred, transported, stored, and recycled. All these properties give water its great uses for humans. Surface water resources and groundwater can play a major role in agriculture, hydroelectric power plants, livestock production, industry, forestry, fisheries, navigation, recreation activities, and others (Madhav et al. 2020)

Water Pollution

Sustainable development in every community is access to start a good standard of living by consuming clean water. Water pollution occurs (such as oceans, seas, lakes, rivers, groundwater, and others) caused by human activities33. Pollution (which is usually Changes in the physical, chemical, or biological properties of water will have adverse consequences for living organisms. Therefore, to address the problem of water pollution, the World Health Organization (WHO, 1997) takes a new approach to achieve sustainable exploitation of water resources has developed internationally the preparation of Agenda as well as on various follow-up activities to reduce water pollution from:

A.   Direct : Sources Direct sources are sources of pollution that directly release waste and hazardous by-products to nearby water sources without treatment. Example: factory waste, waste management facilities, refineries, and others.

B.   Indirect : Sources are pollutants or contaminants that enter water bodies through groundwater, soil, or the atmosphere such as acid rain. Bodies of water can be polluted by a wide variety of substances, including pathogenic microorganisms, decomposing organic waste, plant nutrients, toxic chemicals, sediment, heat, petroleum, and radioactive substances (Inyinbor Adejumoke et al. 2018).

Some of the most common water pollutants found include:
- Domestic waste (household)
- Industrial waste
- Insecticides and pesticides
- Detergent and fertilizer

Figure 1.7, Water pollution

Human life is very dependent on water, for that we need responsibility from all sectors to maintain and control water quality, so that water does not cause negative impacts both on public health and on the environment and must be responsible for all activities that can cause pollution. water according to applicable regulations.

Conclusion

Water is the most basic need for human life. Humans get water for their daily minimum basic needs to meet their healthy, clean, and productive needs. Water must be managed so that it is always available in sufficient quantity and quality to meet human needs both at present and in the future given the decreasing water availability and increasing water demand. Healthy, quality and continuously flowing water is very much needed by humans, because with healthy and quality clean water and continuously flowing it will be able to improve the quality of human life, for that it must have responsibility for all activities carried out by humans so that water is not polluted and water quality is maintained.

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