



Quality Analysis Of Clean Water Sources And *Personal Hygiene* With Dermatitis Complaints In The Work Area Regional Technical Implementation Unit Community Health Center Teluk Kuantan

Farida Sugiester s¹, Tri Joko², Nurjazuli³

*Magister Of Environmental Health, Faculty Of Public Health, Diponegoro University
Email : faridasugiester19@gmail.com*

Article details:

Published: 30th June 2022



Abstract

One of the health care efforts for individuals is maintaining *personal hygiene*. *Personal hygiene* is a specific primary prevention. *Personal hygiene* is important in maintaining health because it can minimize the entry of microorganisms that cause disease, both skin diseases, infectious diseases, oral diseases and digestive tract diseases. Analyzing the Quality of Clean Water Sources and *Personal*

Hygiene With Complaints of Dermatitis in the Work Area of the Teluk Kuantan Health Center UPTD in 2021. This study was an observational study with a cross sectional approach and was conducted through interviews. Data were analyzed univariately, bivariately using chi-square test and multivariate using multiple logistic regression analysis. The variables of this study consisted of hand, foot and nail hygiene, skin hygiene, clothing cleanliness, towels cleanliness, bed and bed linen cleanliness. The results showed that there was a significant relationship between personal hygiene and complaints of dermatitis, which consisted of a relationship between hand, foot and nail hygiene with a *p-value* of 0.008, and a relationship between skin hygiene with a *p-value* of 0.000. There is a relationship cleanliness of clothes with *p-value* 0.000, there is a relationship cleanliness of towels with *p-value* 0.000, there is a relationship cleanliness of bed and bed linen with *p-value* 0.007.

Keywords: Clean Water, *Complaints Of Dermatitis*, *Personal Hygien*

To cite this article :

Farida Sugiester s, Tri Joko, N. (2022). Quality Analysis Of Clean Water Sources And *Personal Hygiene* With Dermatitis Complaints In The Work Area Regional Technical Implementation Unit Community Health Center Teluk Kuantan. *International Journal of Health, Education and Social (IJHES)*, 5(6), 91–101.



Introduction

Water and sanitation are two things that cannot be separated. Every time there is drinking water or clean water, there will be waste water. No less than 85% of clean water turns into waste water. As an illustration, if one person uses 100 liters of water per day for drinking, bathing, washing, toileting, then the water that is disposed of as waste water is around 85 liters per day. So, clean water management will be related to sanitation management. (Elysia, 2018). The quality of clean water used determines the health status of a community, so that water quality that does not meet the requirements needs attention. Clean water facilities that are widely used by rural communities are dug wells. (Gracia, 2018).

Water that comes from ground water, such as dug well water or bore well water, is very vulnerable to pollution (Laurenzi, 2017). Coliform bacteria are not actually the cause of water-borne diseases, but coliform bacteria are easy to culture and their presence can be used as an indicator of the presence of pathogenic organisms such as other bacteria, viruses or protozoa, most of which are parasites that live in the human digestive system and are contained in feces. (Budiamurti, 2010). The availability of clean water has become an obstacle for people living in villages. Complaints about the color of the water, which often turns cloudy, may be due to the high content of dangerous metals such as iron (Fe) and manganese (Mn). The presence of Fe and Mn in the water causes the color of the water to turn yellow-brown after some time in contact with air. (Said, 2017).

One of the health care efforts for individuals is maintaining *personal hygiene*. *Personal hygiene* is important in maintaining health because it can minimize the entry of microorganisms that cause disease, both skin diseases, infectious diseases, oral diseases and digestive tract diseases. Skin health needs to be maintained because the skin is part of the body that can protect the body's organs. Humans can prevent skin disorders by applying personal hygiene. The skin that is most often or commonly found includes abrasion or loss of the epidermal layer, the skin becomes rough, dry, scaly and usually in the area of the hands and feet (Sulistyo, 2004). In epidemiological studies, Indonesia showed that 97% of 389 cases were contact dermatitis, and 66.3% of them were irritant contact dermatitis (DKI) and 33.7% were allergic contact dermatitis (DKA). The incidence of occupational contact dermatitis is estimated at 0.5 to 0.7 cases per 1000 workers per year (Tombeng, 2013).

Based on preliminary studies that have been carried out, dermatitis is still in the category of the 10 most common diseases with a total of 138 cases, in 2019 there were 232 cases of the disease and in 2018 there were 265 cases. And the condition of dug well water in the community found that water that had been accommodated left yellow sediment and the walls around the water tank were also dark yellow. To meet their daily needs, most people use dug well water. The surrounding communities do not know whether the well water is suitable for daily use or not. Therefore, it is necessary to review the feasibility of dug well water.



Method

The approach used in this research is analytic observational with a cross sectional research design. This research was conducted in the working area of the UPTD Health Public Health Center Teluk Kuantan. The population in this study were all people who lived and settled in the working area of the health UPTD at the Teluk Kuantan Public Health Center, amounting to 22,577 people. The sample size was calculated using the Slovin formula, obtained 100 respondents. The sampling technique used is *simple random sampling*. Research data was taken by conducting interviews and observations using a questionnaire. Research data were analyzed by univariate analysis, bivariate using chi-square, and multivariate using multiple logistic regression.

Results

This study aims to determine the quality of clean water sources and the relationship between *personal hygiene* and complaints of dermatitis in the work area of the health unit at the Teluk Kuantan Public Health Center. With the variables studied, the quality of clean water, personal hygiene and complaints of dermatitis. Based on gender characteristics, this dominant female respondent group is a woman who on average works as a housewife more than men. This can be seen from the following table:

Table 1. Characteristics of Respondents

Characteristics of Respondents	Number of Samples (n=100)	
	F	%
1. Age		
a. Youth	12	12,0
b. Adult	39	39,0
c. Old	49	49,0
2. Gender		
a. Male	40	40,0
b. Female	60	60,0
1. Education		
a. Primary school	10	10,0
b. Junior high school	26	26,0
c. Senior high school	55	55,0
d. College	9	9,0



2. Work		
a. IRT	29	29,0
b. Trader	25	25,0
c. Farmers	17	17,0
d. Entrepreneur	20	20,0
e. Government employees	9	9,0

Furthermore, this research was conducted to see how the quality of the water used by the community was feasible or not, this was seen from the laboratory results for the use of clean water used (Permen Kes No.416/MenKes/Per/IX/1990) .

Table 2. Clean Water Quality of Digging

Well	Fe Parameter Analysis	Results Measu rement	Results Parameter Analysis Results Manganese (Mn)	Mea sure men t	Paramet er Analysis Coliform	Results Measure ment Results
Beringin	0,120	MS	0,033	MS	54	TMS
Koto Taluk	0,057	MS	0,027	MS	71	TMS
Pasar	0,452	MS	0,056	MS	94	TMS
Sawah	0,189	MS	0,030	MS	63	TMS
Seberang Taluk	0,488	MS	0,050	MS	45	TMS
Sebrata Hilir	0,080	MS	0,033	MS	55	TMS
Simpang Tiga	0,100	MS	0,040	MS	53	TMS



Pulau Aro	0,113	MS	0,034	MS	58	TMS
Pulau Kedundung	0,038	MS	0,042	MS	65	TMS

TMS : Does not meet

MS : Meets water quality standards according to Permenkes No. 416 Tahun 1990

Iron (Fe) content : 1,0 Mg/l

Manganese content (Mn) : 0,5 Mg/l

Total Coliform : 10 MPN/100ml (piped water)

Based on the table, the water used by the community on a daily basis still meets the requirements. Water used for daily needs by the community still does not meet the physical requirements for the clean aspect for sanitation hygiene purposes because the water used has a cloudy taste and color. At the time of measuring water quality based on the chemical requirements of the clean water aspect, namely the levels of iron and manganese were still below the quality standard or did not exceed the recommended maximum requirements. People still use water for daily needs such as toilets, washing, a small portion of people still use it as raw material for drinking water and farming. Although the levels of iron and manganese do not exceed the quality standard values, if people are exposed to it continuously for a long time every day it can irritate the skin.

Based on the total coliform obtained, it exceeds the requirement, this is because the condition of the well is old, mossy, taken up and there are cracks on the floor that allow water pollution to occur. However, total coliform was examined to see as an indicator of the presence of pathogenic organisms such as other bacteria.

Table 2. Personal Hygiene Relationship Test Complaints Of Dermatitis

Personal Hygiene Relationship Test Complaints Of Dermatitis									
NO	Hand,foot and nail hygiene	Dermatitis Complaints				Jumlah		PR (95%CI)	p-value
1		complaints		No complaints					
		F	%	F	%	F	%		
		Bad	54	67,5	26	31,2	80	100%	
	Good	7	35,0	13	65,0	20	100%		
	Total	61	61,0	39	39,0	100	100%		



2	Skin hygiene								
	Bad	49	89,1	6	10,9	55	100%	22,458	0,000
	Good	12	26,7	33	73,3	45	100%	(7,667-	
	Total	61	61,0	39	39,0	100	100%	65,789)	
3	Hygiene of clothes								
	Bad	47	82,5	10	17,5	57	100%	9,736	0,000
	Good	14	32,6	29	67,4	43	100%	(3,825-	
	Total	61	61,0	39	39,0	100	100%	24,779)	
4	Towel cleanliness								
	Bad	51	81,0	12	19,0	63	100%	11,475	0,000
	Good	10	27,0	27	73,0	37	100%	(4,393-	
	Total	61	61,0	39	39,0	100	100%	29,973)	
5	bed & bed linen								
	Bad	43	71,7	17	28,3	60	100%	3,092	0,007
	Good	18	45,0	22	55,0	40	100%	(1,336-	
	Total	61	61,0	39	39,0	100	100%	7,151)	

From table 2, it can be seen that the complaint of dermatitis is related to a person's personal hygiene. Good and bad personal hygiene will determine the relationship with complaints of dermatitis. Respondents with poor hand, foot and nail hygiene were 80 of them 54 (67.5%) had complaints and 26 (31.2%) had no complaints. Poor skin hygiene amounted to 55 people of whom 49 (89.1%) had complaints and 6 (10.9) people had no complaints. There were 57 people with poor hygiene of clothes, of which 47 (82.5%) had complaints and 10 (17.5) had no complaints. Bad towel hygiene amounted to 63 people of whom 51 (81.0%) had complaints and 12 (19.0%) had no complaints. The cleanliness of the bed & bed linen was poor, as many as 60 people, of which 43 (71.7%) had complaints and 17 (28.3%) had no complaints.

Relationship of Hand, Foot, and Nail Hygiene with Dermatitis Complaints

Based on the results of the study, the results showed that there was a relationship between hand, foot and nail hygiene with complaints of dermatitis and dermatitis in the community in the health uptd work area of the Teluk Kuantan Public Health Center, the *p-value* was 0.008 ($p < 0,05$). In the study, it was found that when people wash their hands, they do not wash their hands in running water, they only use a container or bowl. In addition, respondents also do not cut their nails diligently, only cutting their nails when the nails are long. Clean hands, feet and nails This is very important because if a person has poor hygiene, it can lead to the development of germs



Relationship of skin hygiene with complaints of dermatitis

Based on the results of the study, it was found that there were still many respondents who only took a bath once a day and did not scrub their bodies while bathing. Unclean skin conditions, namely the habit of rarely bathing, will be more susceptible to dermatitis, namely the appearance of red rashes, especially in the folds of the fingers. And also the use of soap in the community using soap alternately with the family. The results of the statistical test obtained p -value 0.000 ($p < 0.05$) with a 95% CI value at PR 22.458 was 7.667-65.789 which means that the skin hygiene variable has a significant relationship with skin complaints in respondents who

Relationship of clothing hygiene with complaints of dermatitis

The results of the study found respondents who did not change clothes after their activities, and combined dirty clothes together with other family members. From clothes that are not changed after activities, germs will be easier to breed where the clothes become wet and even moist because the clothes absorb the skin and also the clothes come into contact with the skin as a result, itching appears and causes dermatitis, besides that it can also cause itching. body odor. The results of the statistical test showed a p -value of 0.000 ($p < 0.05$) with a 95% CI value at PR = 9.736, there was a significant relationship between clothing hygiene and dermatitis complaints, where cleanliness of clothes was a risk factor for dermatitis complaints.

The Relationship between Towel Hygiene and Dermatitis Complaint

Results showed that respondents used towels alternately with other family members and did not dry towels in the sun. Towels that have not been used for bathing are directly dried in the sun and not washed for a long period of time can also cause bacteria to grow. The statistical test results obtained p -value 0.000 ($p < 0.05$) with a 95% CI value at PR 11.475, which means that the towel hygiene variable has a significant relationship with dermatitis complaints. Respondents with poor towel hygiene are at risk of 11.475 times more risk than respondents with good towel hygiene.

The Relationship between Bed Cleanliness and Bed Sheets with Complaints of Dermatitis

Based on the results of statistical tests, it was obtained that the p -value of 0.007 ($p < 0.05$) with a 95% CI value at PR=3,092 was 1.336-7.151 which means that the variables of bed linen and bed hygiene have a significant relationship with complaints of dermatitis and become a factor. risk of 3.092 times for complaints of dermatitis. This is in line with Agsa's research (2012) that there is a relationship between cleanliness of beds and sheets with skin disease, with a p value of 0.025. The results of his research show that bedding that is not cleaned first can cause itching on the skin, the same thing as bed linen that is not changed for months.



Conclusion

There is a relationship between people who have complaints of skin diseases during the last 1 month with personal hygiene starting from hand, foot and nail hygiene, p-value 0.008, there is a relationship between skin hygiene with p-value 0.000. There is a relationship cleanliness of clothes with p-value 0.000, there is a relationship cleanliness of towels with p-value 0.000, there is a relationship cleanliness of bed and bed linen with p-value 0.007. For this reason, it is hoped that people can maintain personal hygiene so that they are protected from complaints of dermatitis

References

- Alaydrus, H. (2019). *Indonesia Targetkan Akses Air Minum Layak 100 Persen pada 2030*.
- Asnih. (2019). *Tugas Akhir Studi Kualitas Air Sumur Gali Di Kelurahan Sambinae kecamatan Mpunda Kota Bima*. Kementerian Kesehatan Republik Indonesia Politeknik Kesehatan Kemenkes Kupang Program Studi Kesehatan Lingkungan.
- Badan Pusat Statistik Indonesia. (2020). *Proporsi Rumah Tangga Yang Memiliki Akses Terhadap Layanan Sanitasi Layak Menurut Daerah Tempat Tinggal (Persen)*. BPS Indonesia.
- Badan Standardisasi Nasional. (2008). SNI 6989.59:2008 Air dan Air limbah – Bagian 57: Metoda Pengambilan Contoh Air Limbah. Sni 6989.59:2008, 59, 23.
- Batubara, S. R. (2011). *Hubungan Kualitas dan Penggunaan Air Sungai Belumai Dengan Keluhan Kesehatan Pada Pengguna Air di Kecamatan Tanjung Morawa*. Fakultas Kesehatan Masyarakat Universitas Sumatra Utara.
- BPS Kabupaten Kuantan Singingi. (2020). *Kabupaten Kuantan Singingi Dalam Angka 2020*.
- Brown, R.G., dan Burns, T. (2015). *Lecture Notes On Dermatologi*. Erlangga.
- Brown, R. G. J. B. (2007). *Dermatology*. In Mosby elsevier.
- Budiamurti, G.R.; dan Muntalif, B. S. (2010). *Korelasi Kualitas Air dan Insidensi Penyakit Diare Berdasarkan Keberadaan Bakteri Coliform di Sungai Cikapundung*. Program Studi Teknik Lingkungan, Fakultas Teknik Sipil dan Lingkungan, Institut Teknologi Bandung.
- Cahyaning, N. (2009). *Pengaruh pemanfaatan air sungai terhadap penyakit kulit pada masyarakat pinggiran*.



- Chandra, B. (2007). *Pengantar Kesehatan Lingkungan*. EGC.
- Damashinta, C. I. (2018). *Sanitasi Indonesia Terburuk Ketiga*. https://www.solopos.com/sanitasi-indonesia-terburuk_ketiga-956428.
- Direktorat Promosi Kesehatan dan Pemberdayaan masyarakat Kementerian Kesehatan. (2020). *Manfaat Air Bersih dan Menjaga Kualitasnya*.
- Effendi, H. (2003). *Telaah Kualitas Air*. Konisius.
- Elysia, V. (2018). *Air dan Sanitasi Dimana Posisi Indonesia*. Seminar Nasional Peran Matematika, Sains, dan Teknologi dalam Mencapai Tujuan Pembangunan Berkelanjutan/SDGs, FMIPA Universitas Terbuka, 157–179.
- Gracia Victoria Souisa, L. M. Y. J. (2018). Kualitas Sumur Gali diDusun Wahakaim. *Higeiajournal Of Public Health Research And Development*, 2 No 4.
- Greita M.S.Timpal, Woodford B.S. Joseph, R. H. A. (2020). *Hubungan Antara Personal Hygiene Dengan Keluhan Gangguan Kulit Di Asrama Putra Sma Kristen 2 (Binsus) Tomohon*. 9(7), 184–189.
- Gunanto. (2001). *Hubungan Beberapa Faktor Risiko Pencemaran Sumur Gali dengan Kualitas Air Sumur Gali secara Bakteriologis di Kecamatan Seyegan Kabupaten Sleman Yogyakarta*. Universitas Diponegoro.
- Hamonangan Nainggolan, dan S. (2011). *Pengolahan limbah cair industry perkebunan dan air gambut menjadi air bersih*. USU Press.
- Harahap, M. (2000a). *Ilmu Penyakit Kulit*. Hipokrates.
- Harahap, M. (2000b). *Penyakit Kulit*. Jakarta. PT Gramedia.
- Henie, Y. (2016). Penentuan Kadar Besi (Fe) Dan Kesadahan Pada Air Minum Isi Ulang Di Distrik Merauke. *Jurnal Magistra*, 3 Nomor 2.
- Indri Fahrudiana. (2017). *Faktor yang Berhubungan dengan Jumlah Coliform pada Sumber Air Bersih Puskesmas yang Menggunakan Sumber Air Tanah di Kabupaten Jember*. Digital Repository Universitas Jember.
- Ismy, Fadillah, Taufik Ashar, Dharma, S. (2012). *Analisis Kualitas Air Dan Keluhan Gangguan Kulit Pada Masyarakat Pengguna Air Sungai Siak Di Pelabuhan Sungai Duku Kelurahan Tanjung Rhu Kecamatan Limapuluh Kota Pekanbaru Tahun 2012* 39. 2 3(2).
- Isro'in Laily, dan S. A. (2012). *Personal Hygiene* (pp. 1–51). Graha Ilmu.



- Joko, T. (2010). *Unit Air Baku dalam Sistem Penyediaan Air Minum*. Graha Ilmu.
- KemendikBud. (2019). *KSAN : 2019 Menuju Sanitasi dan Air Minum Aman, Inovatif, dan Berkelanjutan untuk Semua*. Kementerian Pendidikan Dan Kebudayaan.
- Kementerian Kesehatan RI. (2015). *Kesehatan Dalam Rangka Sustainable Development Goals (SDG)* (p. 97).
- Kementrian Kesehatan Republik Indonesia. (2011). *Profil Kesehatan Indonesia*. Kementerian Kesehatan RI.
- Laila Febrina, & Ayuna, A. (2015). Studi Penurunan Kadar Besi (Fe) Dan Mangan (Mn) Dalam Air Tanah Menggunakan Saringan Keramik. *Jurnal Teknologi*, 7 Nomor 1.
- Laurenzi Mariabie TS, JosephWBS, J. S. (2017). Hubungan Antara Faktor Konstruksi dan Jarak Sumur Gali terhadap Sumber Pencemar dengan Total Coliform Air Sumur Gali di Kelurahan Motto Kecamatan Lembah Utara. *Kesmas*.
- Lestari, Ira, C. (2008). *Penyakit Kulit Akibat Kerja*.
- Mayo Clinic Staff. (2021). *Dermatitis*. Mayo Foundation for Medical Education and Research (MFMER).
- Menteri Kesehatan Republik Indonesia. (2017). Peraturan Menteri Kesehatan Republik Indonesia Nomor 32 Tahun 2017 Tentang Standar Baku Mutu Kesehatan Lingkungan Dan Persyaratan Kesehatan Air Untuk Keperluan Higiene Sanitasi, Kolam Renang, Solus Per Aqua dan Pemandian Umum. Peraturan Menteri Kesehatan Republik Indonesia, 1–20.
- Michael, J. . (2005). *Dermatitis, Contact, Emedicine*.
- Mubarak, W. . dan N. C. (2009). *Ilmu kesehatan masyarakat: teori dan aplikasi*. Salemba Medika.
- Mukono. (2000). *Prinsip Dasar Kesehatan Lingkungan*. Airlangga University Press.
- Mulia, R. . (2005). *Kesehatan lingkungan*. Graha Ilmu.
- National Research Council and Institute of Medicine. (2010). *Mining Safety and health research at NIOSH*. The National Academics Press.
- Notoatmodjo S. (2012). *Promosi Kesehatan dan Perilaku Kesehatan*. Rineka Cipta.
- Notoatmojo, S. (2010). *Metodologi Penelitian Kesehatan*. Rineka Cipta.
- Potter. (2015). *Fundamental keperawatan (Edisi Ke-5)*. Kedokteran EGC.



- Priyanto D. (2011). *Peran Air dalam Penyebaran Penyakit* (7th ed.). Balaba.
- Rahmayunita, G., dan Sularsito, S. . (2015). *Ilmu Penyakit Kulit Dan Kelamin*. Fakultas Kedokteran UI.
- Rianti, D. dkk. (2010a). *Analisis tentang Higiene dan Sanitasi Lingkungan dengan Penyebab Terjadinya Penyakit Kulit di Kecamatan Asemrowo Surabaya*. Fakultas Kedokteran Universitas Wijaya Kusuma.
- Rianti, D. dkk. (2010b). *Analisis Tentang Higiene Dan Sanitasi Lingkungan Dengan Penyebab Terjadinya Penyakit Kulit Di Kecamatan Asemrowo Surabaya*. Fakultas Kedokteran Universitas Wijaya Kusuma.
- Said, N. I. (2017). *Kualitas Air dan Kesehatan Masyarakat*.
- Sastrawijaya, A. T. (2009). *Pencemaran Lingkungan*. Rineka Cipta.
- Siti, N. (2013). *Kualitas Fisik dan Kimia Air Sumur Gali dan Sumur Bor di Wilayah Kerja Puskesmas Guntur II Kabupaten Demak*. Jurnal Kesehatan Lingkungan Indonesia, 12 Nomor 2.
- Sulistyo A. (2004). *Kebutuhan Dasar Manusia dan Proses Keperawatan*. Salemba Medika.
- Suryani, F. (2011). *Faktor-faktor yang berhubungan dengan dermatitis kontak*.
- Tombeng, M., Darmada, I. & Darmaputra, I. (2013). Occupational Contact Dermatitis In Farmers. *E- Jurnal Medika Udayana*, 2, 200–217.
- UU. (2019). *Undang-undang RI No 17 tahun 2019 tentang sumber daya air*. 011594, 1–50.
- Wardhana, W. . (1995). *Dampak Pencemaran Lingkungan*. Andi Offset Yogyakarta.
- Wartonah. (2003). *Kebutuhan Dasar Manusia dan Proses Keperawatan*. Salemba Medika.
- Widiyanto, A.F., Yuniarno, S., Kuswanto. (2014). Dermatitis. *Jurnal Kesehatan Masyarakat*, 2.
- Widowati, W. (2008). *Efek Toksik Logam Pencegahan Dan Penanggulangan Pencemaran*. ANDI.
- Wiyata, A. T. (2005). *Pelatihan Kualitas Air*.