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Knowledge, Attitudes and Practice regarding WASH among Community Dwellers of District Sargodha, Punjab, Pakistan

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ABSTRACT

The sustainable development in communities and improved quality of life is the utmost adjective of various development programs globally. The 21st century challenge for community development is unprecedented and multilayered with diversity of stakeholders. Within the community context, individuals are strongly associated with their knowledge, attitude and practices (KAP) in daily life. Poor knowledge and unsafe practices of water, sanitation and hygiene (WASH) among community dwellers are among the chief vehicles for transforming infections diseases, which are the leading cause of mortality and morbidity, especially among children. To understand the actual condition of KAP regarding WASH a cluster random sampling technique was applied to obtain samples from target communities of district Sargodha. Various univeriate and bivariate analysis applied through SPSS-21 for insight the individual practice. The findings indicated that two third of community dweller had moderate level of Knowledge attitude and practice (KAP) regarding WASH. The findings from T-test show that there is signification variation existed with respect to gender and socio-demographic aspects of community. The community dwellers somehow understand the importance of safe WASH practices, however, there is an intensive need for essential awareness among community dwellers regarding WASH.

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1. Introduction

Sustainable community development is a type of condition, that every individual wish for themselves, for family members, for their children, communities and their next generations so that the quality of life is equal or better as we received from our insisters. Development of communities is a type of situation which revolves around the qualitative of life, improved services and facilities and best utilization of available resources (Hussain et al., 2020). At this age of globalization the communities are more complex and multilayered with diversity of stake holders. Today's challenges for sustainability are unprecedented such as shrinking natural resources along with continual population growth, decreasing health and economic conditions, contamination of food along with scarcity of drinking water, environmental pollution, issues of waste management and infectious diseases becomes the major threats (Ghosh et al., 2021).

Individual development along with their families and communities improvement of living conditions is the most established observable fact world wildly. Community development is a collective process with the involvement of numerous stakeholders and has great aspiration to enhance community life collectively (Gerizim, 2019; Sands & Aunger, 2021). Development in communities, improving living conditions, and bringing sustainability is strongly associated with individual's knowledge, attitude and practice (KAP) in everyday life. The Knowledge, attitude

and practices of individuals, groups and community dwellers collectively have major impacts and become a founding stone for the well-being development of any nation (Hussain et al., 2020). Normally, individuals play various roles in their daily life activities, such as nutritional & hygiene practices within and outside of their homes (Kamara, Galukande, Maeda, Luboga, & Renzaho, 2017; WHO., 2020).

The individual behavior and practices largely depended on their knowledge, attitude and practice in everyday life, especially with respects to water, sanitation and hygiene (Chan et al., 2021). The unsafe behavior regarding WASH has life-long synergic impacts on individual's psycho-physical, cognitive growth, socio-economic conditions, development and overall wellbeing (U. WHO., 2019). Inadequate knowledge regarding drinking water, poor sanitary conditions and unhygienic practice among individuals, families and community dwellers which is the major reason of transformation of viral and pandemics (Desai et al., 2020). Water, sanitation and hygiene related infectious diseases are the main reason of mortality and morbidity globally in developing countries like Pakistan (Yazie, Sharew, & Abebe, 2019).

In recent decades, remarkable improvement observed in WASH conditions, practices and behaviour individually as well as at community level globally. Inspite of this development a large number of empirical studies (Ghosh et al., 2021; Martínez-Santos et al., 2017; Moreno et al., 2020; Webb & Cabada, 2018; Zywert, 2017) highlighted that the situation is not satisfactory especially in developing countries. Various socio-economic obstacles significantly impacted the knowledge, attitude and practice regarding WASH. Several chronic, infectious, viral and epidemic diseases such as hepatitis, diarrhoea, stunting growth, typhoid, polio, skin and eye infections and cholera among many others, which direct linked with unsafe behavior and practice of community dwellers (U. WHO., 2019). WASH related infectious diseases are the major contributor to health problem and largest challenge for medical professionals since long. Every year millions and billions of funds, time and resources spend to deal the unbearable socio-economic burden of WASH related diseases throughout the world. According to world health organization report on the child, the diseases regarding water sanitation and hygiene are the one among the top ranking and have sever consequences on health and life of individuals especially on under five children (WHO, 2019; WHO., 2020).

United Nations Children Education Funds (UNICEF) revealed that there are millions of under five children die every years due to billions of avoidable infectious and viral diseases. Most of these chronic infections established due to individuals practice, unhealthy environment, meager sanitation conditions, unsafe hygienic behavior and unawareness of basic health care practices (WHO-UNICEF, 2019; WHO, 2019). There are about 5.2 million under five children die every year and beside this unbearable loss of human life there are 1.7 billion cases of preventable viral or infectious reported globally (UNICEF, 2018). The basic reasons behind this loss are preterm child birth and complications, infections, mishandling and unavailability of basic health facilities during and after birth, diarrhoea, typhoid and cholera among many others. Unfortunately, Pakistan stand among the top three countries with highest under five child death cases every years (WHO, 2019).

Naturally, individuals, families and community dwellers greatly influence by their social, cultural, religious values and rituals that shape their behavior and practices in daily life. These long held habits and behavior have significant impacted by socio-economic, education, awareness and communal practice among others. These multidimensional factors not only shape the lives of people but also strongly associate with health conditions (Yazie et al., 2019). The health conditions of community dwellers in developing countries is surprisingly low, due to unawareness of basic preventive health practice, inadequate knowledge, attitude and practice regarding WASH and lack of basic facilities (Sands & Aunger, 2021). This vicious cycle of diseases can be controlled, reduced and improved the situation by providing require nutrition, safe drinking water, improved sanitary conditions and hygienic dietary practices. Improved WASH conditions and behavior also save community dwellers from various allied health threats such as malnutrition, external and internal infections, polio, giardiasis, arsenicosis, and lead poisoning many others (Chan et al., 2021).

In developing nations, like Pakistan poor drinking water conditions and facilities along with insufficient sanitation improvement, and unhygienic livings are become the foremost

challenge for community development. Unawareness, poor knowledge, attitude and practices among community dwellers expose a plethora of epidemics that significantly affects health, living conditions and development of community dwellers. Although, Pakistan has in frightening condition with poverty, least health facilities, unexpected social, environmental and security issues, there is some progress observed in recent decades in this regard. Regrettably the situation in the country still remains plagued. Nearly 25 million do not have access to safe WASH conditions, which leads high level of child morbidity and mortality. In Pakistan under five mortality rates is very high such as 74 deaths per 1000 live births (WHO., 2020). However, this irreversible loss of human lives could be stopped or reduced if all community dwellers have sufficient knowledge, attitude and practices regarding WASH in their daily lives (Sands & Aunger, 2021).

The communities have multidimensional issues with sever complexity and cannot be addressed without indigenous knowledge of socio-cultural, demographic background along with available community resources. Sustainable development among communities requires integrated interventions and the bottom to up approach and improved knowledge, attitude and practices among community dwellers enable them to decide on changes. Therefore, the major concern of this study is to understand the impacts of knowledge, attitude and practice regarding WASH on community dwellers. Effective knowledge, attitude and practice require understanding the extent and nature of problem, available resource, and context sensitiveness regarding the subject matter and sustainable community development.

1.1. Objectives

1. To understand the existing knowledge, attitude, and practices among community dwellers regarding WASH in daily life
2. To identify the challenges to maintain the improved WASH practices and condition at individual, family and community level
3. To determine the possible impacts of unsafe WASH practices on health and public wellbeing of community dweller

2. Materials and Methods

In this study researcher tries to examine the KAP of WASH; for this purpose, quantitative methods were applied. Primary data was collected from the head of the household residing in the district of Sargodha, Punjab, Pakistan. A cluster random sampling technique was applied to obtain equal samples from urban and rural areas of district Sargodha. District Sargodha has seven tehsils (table 1); one union council from each tehsil was taken through random cluster sampling. Male/female participants will be taken through convenient and quota sampling techniques because consent and availability of respondents may be difficult otherwise.

Table 1: Selected Respondents from various Tehsils as below

Sr.No	Tehsil	No of respondents	Sr.No	Tehsil	No of respondents
1	Sargodha	90	5	Silawali	30
2	Bhalwal	35	6	Bhara	20
3	Sahiwal	30	7	Kotmomin	20
4	Shahpur	25			

A structured questionnaire was applied, which covers various socio-economic, background and demographic aspects regarding water, sanitation and hygiene practices at their individuals, family and community level. The primary data collected through survey method. Head of household were the respondents because they are managing domestic needs at individual and family level. For this study Yamane (1967) formula used to determine the sample size from selected communities and about 250 participants were approached for the purpose of this study. The process for the collection of primary data was completed during the period of June to December 2022. Collected data was scrutinized carefully and final data carefully entered into SPSS 21 for descriptive and inferential analysis.

3. Results and Key Findings

The basic objective is to examine the KAP regarding WASH among community dwellers of Sargodha district. The findings presented in Table 2 highlighted the frequencies and percentages of socio-demographic aspects of study participants.

Table 2: Demographic Characteristic of Study Participants

Socio- Demographic aspects	Characteristic	N	%
Gender	Male	125	50%
	Female	125	50%
	Total	250	100
Area	Urban	128	51.2%
	Rural	122	48.8%
	Total	250	100
Family System	Nuclear	76	30.6%
	Joint	160	64.0%
	Extended	14	5.6 %
	Total	250	100
Qualification	0	44	17.6%
	1-5	3	1.2%
	6-8	7	2.8%
	9-10	28	11.2%
	11-12	84	33.6%
	13-14 or above	84	33.6%
	Total	250	100

Out of total 50% respondents were male and 50% respondents were female. 51.2 % respondents belong from urban areas and remaining 48.8% respondents belongs from rural settings of the district. Maximum respondent 64.0% were belongs from joint family system and similarly 67.2% respondents possess intermediate or graduation level educational qualification

Table 3: Demographic Characteristic of Study Participants

Socio- Demographic aspects	Characteristic	N	%
Monthly Income (Rs)	25000-50000	26	10.4%
	50001-100000	34	13.6%
	100001-125000	51	20.4%
	125001-150000	33	13.2%
	150001 or above	106	42.4%
	Total	250	100
Occupation	Agricultural	30	12%
	Business	52	20.8%
	Labor on daily wages	38	15.2%
	Self-Employed	50	20%
	Govt-Employed	80	32%
	Total	250	100

Table 3 indicated that most of the respondents 42.4% have Rs 150001 or above monthly income and the second highest portion of respondents 20.4% have Rs 100001 to 125000 monthly income. When the respondents were asked regarding their occupation most of the responds reported that they belongs from Govt-employed and 20.8% respondents have their personal business.

Table 4: Demographic Characteristic of Study Participants

Socio- Demographic aspects	Characteristic	N	%
Knowledge regarding WASH	Yes	32	13.8%
	No	218	87.2%
	Total	250	100
Do you think your water is safe for drinking	Yes	126	50.4%
	No	94	37.6%
	To Some Extent	30	12.0%
	Total	250	100
Do you think your sanitation conditions are satisfactory	Satisfactory	58	23.2%
	Unsatisfactory	141	56.4%
	To Some Extend	51	20.4%
	Total	250	100
Do you understand the importance of hygiene	Yes	119	47.6%
	No	120	48.0%
	Don't Know	11	4.4%
	Total	250	100

Table 4 explains the knowledge of respondents regarding water and sanitation and hygiene. Out of total 250 respondents huge portion of respondents 87.2% does not understand regarding WASH. Only 50.4% respondents think that they have access to safe drinking water and only 23.2% respondents satisfied with sanitation conditions they have. A huge portion of respondents 76.8% reported that they are not satisfied with the sanitary condition they have in their daily life. Similarly only 47.6% respondents understand the importance of hygiene conditions and practices are important for individual's health and well being.

Table 5: Level of KAP regarding WASH

Level of KAP about WASH	Frequency	Percent	Valid Percent	Cumulative Percent
Low	15	6.0%	6.0%	6.0%
Medium	160	64.0%	64.0%	70.0%
High	75	30.0%	30.0%	100.0%
Total	250	100.0%	100.0%	

Table 5 shows the level of KAP of respondents regarding WASH among community dweller of district Sargodha. As it indicates 6.0% (15) lies in the lower KAP. 64% (160) evaluated in the category moderate level of KAP and 30% (75) were in the list of high level of KAP about WASH. The result indicates that most of our respondent had moderate level of knowledge, attitude and practice about water, sanitation and hygiene.

Table 6: Chi Square Test

SR		VALUE	DF	Asymp-sig.(2-sided)
1	Pearson of Chi Square Gender	.006 a	1	.938
2	Pearson Of Chi-square Age Cross tabulation	2.070 a	2	.335
3	Pearson chi square Cultural Background	13.146 a	1	0.00
4	Pearson chi square type of family	3.383 a	2	184
5	Pearson chi square Necessary to Know the Water Ingredients Before Using for Drink	30.885 a	1	.000
6	Pearson Chi Square Benefits of Safe Drinking Water	33.321 a	3	.000
7	Pearson Chi square Prevalence of Kidney Diseases in Sargodha to Saline and Arctic Mixed Water	16.284 a	2	.000
8	Pearson Chi Square Consider That Purification of Water important	15.926 a	2	.000
9	Pearson of Chi square Quality of Water Can affects Health	12.973 a	2	.002
10	Pearson Chi Square Main Source of water Which Used cooking	8.699 a	3	.034
11	Pearson of Chi Square Need to Wash Hands with Soap after Going to Toilet	10.012 a	1	.002
12	Pearson of Chi square Wash Your Hand When needed	.770 a	1	.380
13	Pearson of Chi square Understanding of Sanitation Do You Have Latrine	2.170 a	1	.141

Table 6 indicates the chi-square test results of various variables with awareness of WASH. If there is a significant level of Asymp, guidelines for the level of importance Sig (bilateral) P = .05 or less, then the significance existed between two variables and it indicates the association existed between two variables and if value of P will be more than .05, then qui-square results will indicate no association between variables. In above table, it was indicated that age and gender had no association with perception of knowledge about safe water, but study also indicated in respect of cultural background found association with the perception of knowledge about save water. Moreover, the perception of knowledge about safe water among these variables such as quality of water can affects health, necessary to know the water Ingredients before using for drink, purification of water is really important, Water Which used for drinking and cooking, Prevalence of kidney diseases in Sargodha had significant relationship among them but knowledge about understanding of sanitation found no association.

Table 7: Gender Wise Group Analysis

	Gender	Number	M	S.D	S.R(M)
KAP regarding WASH	Male	125	32.2000	4.72126	.42228
	Female	125	31.7600	4.27747	.38259

The Practice of hygiene such as need to wash hands with soap after going to toilet found significance, on the other hand, wash your hand when needed had no significance.

Table 7.1: Independent T test

				T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence level Lower	Upper
KAP of WASH	Equal variances assumed	0.310	0.578	0.772	248	0.441	0.44000	0.56982	0.68231	1.56231
	Equal variances not assumed			0.772	245.622	0.441	0.44000	0.56982	0.68236	1.56236

In the above table 7 and 7.1, highlighted the results of independent sample t-test regarding KAP and WASH in gender perceptive. The results presented significance difference among male and female with the KAP regarding WASH in day to day life.

Table 8: Group Statistics (Cultural background)

	Cultural Background	N	Mean	Std. Deviation	Std. Error Mean
KAP of WASH	Urban	128	32.4063	4.54104	.40138
	Rural	122	31.5328	4.43350	.40139

Table 8.1: Independent T Test

				T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence level Lower	Upper
KAP of WASH	variances assumed	0.310	0.578	0.772	248	0.441	0.44000	0.56982	-0.68231	1.56231
	Variances not assumed			0.772	245.622	0.441	0.44000	0.56982	-0.68236	1.56236

Table 8 and 8.1 highlighted the significant gap has been found. Group Statistics table urban (U = 32.4 and SD =4.5) and for rural (R =31.5 and SD =4.6). The data from independent sample test table showed Df (247.854), t = -1.538 and p=0.125 (2-tailed). The results of the T-test indicate that urban community has no difference in attitude and practice than rural community.

Table 9: Group Statistics (Educational Status)

	Educational Status	N	Mean	Std. Deviation	Std. Error Mean
KAP of WASH	Illiterate	122	31.7541	4.11671	.37271
	Literate	128	32.1953	4.84574	.42831

Table 9.1: Independent Samples Test

				t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence level Lower	Upper
KAP of WASH	Equal variances assumed	3.250	0.073	0.774	248	0.440	0.44121	0.56998	1.56384	0.68141
	Equal variances not assumed			0.777	244.819	0.438	0.44121	0.56777	1.55955	0.67712

Table 9 and 9.1 indicated that no significant difference in scores for respondents taken from Group Statistics table literate (L = 32.1and SD =4.8) and for illiterate (Illiterate =31.7 and SD =4.1). The data from Independent Sample Test table showed df (244.8), t = -0.777.and p=0.438 (2-tailed). The results of the T-test indicates that literate people have not more Knowledge attitude and practice (KAP) about WASH than illiterate people.

4. Discussion

This study tries to understand the KAP regarding WASH among community dwellers of district Sargodha. For this purpose, a sample of 250 respondents was taken from district Sargodha. Out of total 50% were males while remaining were females. Respondents were also selected from urban and rural backgrounds, and the urban respondents were 51.2%, and the rural respondent was 48.8%. The respondent's average age was 37.09% years, and 51.2% respondents were literate. More than half 64.05% respondents lived in a joint family system, and the average family size of the respondent was six members. When the respondents asked about their understanding regarding WASH the following answer were reported.

4.1. Knowledge, Attitude and, Practice of Community Dweller Regarding "Water"

Majority of respondents, 77.6% were aware regarding WASH try to adopt improve facilities by most of the householder. More than half 52% respondents have understanding regarding contamination of water during storage process. The prevalence of the waterborne disease is extending swiftly because of contaminated water. Moreover, among those who had awareness about safe water were conscious about distribution of water. They reported that they have to face difficulties to reach contamination free water due to the irregular or non-availability of filter water in their communities.

Similar findings were reported in another study conducted in semi-urban community of Karachi by (Farooq, Parpio, Ali, Dhalvani, & Ather, 2011). It revealed that the enhancement of community awareness and long held habits can lead to improve quality of life. To encourage healthy behaviors, including water sanitation, effective community interventions relating their education and empowerment are required. These results are in line with the previous literature (Armah et al., 2018; Joshi, Prasad, Kasav, Segan, & Singh, 2014; Salman, 2021).

The study's outcome about the causes of infectious diseases is also in aligning with the analysis performed in 2014 by Abedin and colleagues. This study revealed that skin; intestinal, fever and diarrhea are the common diseases being spread in society. In case of contamination of water, there is arsenic in the water of Sargodha. The availability of arsenic in the water of Sargodha was also reported alarmingly high in another study (Soomro, Khokhar, Hussain, & Hussain, 2011).

4.2. Knowledge, Attitude and, Practice of Community Dweller Regarding "Sanitation"

Sanitation is another important and interlinked part of WASH. More than two-thirds (72.8%) of respondents reported being aware of sanitation. Having a latrine in the house is highly significant toward improved sanitation, and 58.0% of respondents stated it is essential to have a latrine. The expected explanation of these findings could be that open defection is unsafe for health and leads to many contagious and fatal diseases (Pachori, 2016).

More than half of the respondents 56.0% showed dissatisfaction with the sanitation system. Moreover, their views about general cleanliness of streets and surroundings were not satisfactory, as 59.2% were stated that our area stayed clean sometimes, and one forth reported that rarely clean their surroundings. In case of the discharge system of water and waste, 41.0% responded that there is open drainage and 46 % reported about the closed drainage system in the whole area. Almost half i.e. 49% disposed of all their wastage through the municipal committee, and 35 % throw garbage to nearby pile of filth that is directly hazardous for health.

4.3. Knowledge, Attitude and, Practice Of Community Dweller Regarding "Hygiene"

The importance of hand wash was also gainful for the household respondent; that's why 48.0% respondents stated that washing hands caused the prevention of disease. In case of wash critical time to wash hands, 70 % respondents reported that hand washing is necessary after the use of latrine whereas a small fraction felt need to wash hand before eating and feeding to children. These results are in line with the previously conducted studies. The results of a cross-sectional study conducted in primary school of Hussain Abad of Lahore, Pakistan indicates that regarding the necessity of maintaining personal cleanliness, 58% of youngsters in the current survey were aware of it, while 42% were not. While 45.4% of children lacked knowledge, 54.6% of them were aware of the value of washing their hands. When it came to brushing their teeth, 64.7% of kids knew how, whereas 35.3% didn't and used soap to clean their hands. Similar findings are consistent with a different study conducted in Bangladesh and Ethiopia

(Busse, Aboneh, & Tefera, 2014; Choudhury et al.; Parveen, Afzal, Hussain, & Gilani, 2018). Enthusiastic response on the research question when put in front of the respondents, 88.8% householder washed hand when needed and 78.8% also trimmed their fingernail and brush teeth while 21.2% wasn't habitual. Less than half 43.2% of householders took preventive measures against diarrhea and other disease and used boiled water.

The level of Knowledge, attitude and practice regarding water, sanitation and hygiene among community dweller of district Sargodha were also examined. As it indicates 6.0% lies in the lower level of KAP, 64% moderate and 30% were in the list of high level of KAP regarding WASH. The findings of the study indicate that most of our respondent had moderate level KAP regarding WASH. The t-test analysis was conducted to assess the variance in three groups i.e. between male and female, between urban and rural community and between literate and illiterate respondents on KAP about WASH among respondents. It indicates that there was no variation gender wise, community wise and literacy wise about the knowledge attitude and practice (KAP) regarding WASH.

The chi-square test results of various variables with knowledge/awareness about safe water indicated that age, gender, family system and perception about hand wash in routine matters had no association with awareness of safe water as the P- value is more than 0.05. Moreover, in case of other variables such as cultural background, benefits of safe drinking water, perception/opinion about quality of water has impact on health, knowledge about ingredients of water, purification of water, prevalence of kidney diseases, and hand washing practice after toilet use had significant relationship with knowledge of safe water.

5. Conclusion and Recommendations

As the results intimated that water contamination is a vital threat to people's health. Although people are aware of water contamination yet, they are compelled to use available resources. Therefore, Government should involve in the projects rather than depending on the NGOs and launch water plant

Water born disease is also prominent problem in Sargodha due to presence of Arsenic in water, as study findings also identified. Distribution of water and irregular supply of water is also familiar problem people went through. Unfortunately, Sargodha lacks a water and sanitation agency WASA, which should establish as soon as possible to monitor local water suppliers and arsenic in the drinking water and monitor distribution and water supply.

Local government should introduce projects, through WASH awareness would enhance. If we look at sanitation, the situation is not satisfactory. According to the study, respondents also expressed dissatisfaction with the sanitation situation. The study also highlighted the reason that people are not having serious behavior. They look after their house cleaning rather street and surroundings. Open sanitation is often seen. Instantly, the government should inaugurate WASA in exigency and launch a campaign to fix problems about people's behavior and educate people about etiquette regarding share latrine usage, using social and leading media can play a potent role.

Government should launch campaign aggressively such as corona and dengue and apply in the WASH scenario, which is also spreading many diseases. A campaign should launch by the NGOs and national organizations, especially hand washing and personal hygiene.

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