

HEALTH AND LIVING CONDITIONS AFTER FLOOD IN PAKISTAN, 2022; EXPERIENCE OF ONE UNION COUNCIL

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ABSTRACT

Background: Despite being a disaster-prone country Pakistan has a low priority for disaster prevention in budget allocation, poor infrastructure for prevention and lack of training managing a natural calamity. In recent floods, many people lost their lives and shelters, exposing survivors to various diseases.

Objective: To assess the health and living conditions among flood affected union council of district Rajanpur Punjab, Pakistan.

Design: Cross sectional study.

Place and Duration of Study: BMY Health Research Unit, 4 months.

Materials and Methods: A survey was conducted on 12th post flood day in a medical camp in one selected union council of district Rajanpur Punjab, Pakistan. Individuals reaching the camp were included in study, if mentally stable and giving consent for data collection. Questions were asked to see prevalence of various diseases, access to health care and other life facilities. Descriptive analysis was done using SPSS version 20.

Results: Total of 116 individuals arrived in camp and out of them 71 individuals fulfilling criteria gave complete data. Many of them were suffering from acute illnesses including acute diarrheal illness (33.8%), respiratory illness (22.5%) and were coming from faraway distance with delay in treatment due to unavailable services. Almost half participants reported living in open space. Majority (79%) received their full meal only once a day.

Conclusion: Majority of the flood survivors reported poor health conditions with unavailability of timely treatment. Moreover, access to food, shelter, water and sanitation services was limited which highlights the ineffective flood relief services.

Key words: : Health condition, water and sanitation, shelter, health services

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INTRODUCTION

In recent years, natural disasters have caused major damage to entire well-being of the people in the world. Of all these disasters, floods have contributed most to the destruction and disruption of routine livelihood. Floods have killed more than 160,000 people around the world and 2.3 billion have already been affected severely in recent past¹. Various international organisations reported that floods have pushed young children out of their houses on a massive scale, making them prone to several waterborne diseases, limiting their access to health facilities and contaminating the food supplies².

It is a common notion that the current situation of floods

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in Pakistan is generally a combination of mismanagement, widespread corruption and climate change. Various government institutions have at various times failed to measure the scale of floods and do appropriate planning. International communities at different platforms highlighted the fact that Pakistan lacks infrastructure that is resilient to floods³.

Massive flooding is considered to be a result of global warming. This fact is now being seriously considered locally and internationally. Due to global warming, Pakistan has suffered the most damage as the glaciers have started melting more rapidly and the frequency of rains in the recent years have almost doubled. This increased frequency has led to massive destruction throughout the country. In recent flood since July 2022, many people have lost their valuables and are waiting for help⁴. Most districts of South Punjab, Khyber Pakhtunkhwa and Sindh are majorly affected due to massive rainfall episodes throughout the country⁵. United nations have repeatedly given warning for outbreaks of water borne diseases during the floods like malaria, dengue, diarrhoea, scabies etc. A large number of mortalities have occurred while many are suffering from comorbidities. According to UN children agency, 3.4 million children need immediate lifesaving assistance⁶.

This study has mainly focused on health conditions and life situation in Pakistan after floods 2022 within one union council in South Punjab. The selected union council of district Rajanpur is located in southwestern part of Punjab, to the west of Indus River. This region due to its geographical position close to a river, has been always vulnerable to damage by floods⁷. Floods affect regular livelihood of people, infrastructure gets collapse, crops are destroyed, and fertile agriculture lands are turned into barren land leading to a major economic crisis for the local people as their major source of income has been cultivation of crops. Currently, this region has been damaged to a great extent by the calamity⁸. The common health impacts of flooding are complex, including acute stress, malaria and cholera, depression, anxiety, and posttraumatic stress disorder (PTSD), loss of the existing health system and healthcare delivery services, damage to water and sewage systems and disruption to existing public health care programs⁹. During 2022 flood, health reports were published from areas of Sindh and Baluchistan, showing high number of gastrointestinal, respiratory, skin infections, but provision of treatment and other facilities regarding food, temporary residence and availability of sanitary products were not discussed¹⁰.

This study aims to assess the health and living conditions reflecting the post-disaster relief of survivors in Pakistan flood 2022. This survey will provide information for policy makers and stakeholders on effects of flood on living condition of local people for rehabilitation of people.

METHODOLOGY

This was a descriptive cross-sectional study conducted at BMY Health in a period of four months, starting mid-August to mid-December, in one flood affected union council of district Rajanpur Punjab, Pakistan. For participants selection, purposive sampling method was chosen. After approval from BMY ethics committee (protocol number BMY-ERC-01-2022), data collector team was sent with the medical camp team. A total of 116 subjects were received at a one-day free medical camp on 11th September 2022, which marked the 12th day after the flood. Participants of both genders and all ages were included in study, if they were resident of selected union council who survived flood, having no cognitive dissonance, consciousness disturbance, significant disorder of physical or mental functions. Verbal consent was obtained from each person before obtaining information. A semi-structure proforma in English was used. Questions were asked by data collector in local language Saraiki and responses were recorded

on the proforma after translation in English. Variables noted include demographic details, presenting complaints, probable diagnosis, basic services available such as hygiene, safe drinking water, shelter, mosquito control services and food were also recorded in the questionnaire. Data record safety and confidentiality was maintained. Data was entered on SPSS v 20. Frequencies and percentages of variables were calculated.

CAPSULE SUMMARY

- The health and living conditions of flood survivors were assessed and following points were noted:
 - Overall health was affected.
 - A lack of appropriate preventive and curative services.
 - Food access was limited.
 - Poor access to drinking water, sanitation, and hygiene services.
- In light of the above it is recommended:
 - Funds be allocated from governmental and non-governmental sources prior to floods.
 - Funds to be directed towards training and construction of resilient infrastructures.

RESULTS

A total of 116 subjects were received at medical camp on 12th post flood day in one union council in South Punjab in the month of September 2022. Population of area of medical camp was 23 thousand and it was estimated to receive 1000 survivors atleast, with essential medicines available for 500 people. However almost one tenth of the expected number of visitors was reported in camp, showing a lack of coordination in disaster relief services. Visitors of the camp were physically and emotionally disturbed. It took 10 minutes on filling each proforma and there was little difficulty in comprehension and filling the form because of the language gap between the volunteers and the data collectors. Out of 116, 32 patients did not give consent to participate in the research and 14 forms were incomplete, therefore final analysis was performed on 71 forms. Mean age of the participants was 39.13+14.61 with

age ranging from 17-88. Among participants 28 (39.4%) were male and 43(60.6%) were females, with majority 47 (66.2%) as married. Among females 6 (13.9%) were pregnant, and 7(16.3) were in menopause. Frequency & percentages of demographic variables are presented in Table 1.

Table 1: Sociodemographic Variables (n=71)

	Variable	Result
Demographic	Age range	17-88 Years
	Male: Female ratio	1:1.5
	Married individuals	47(66.2%)
	Pregnant females	6(13.9%)
	Menopausal women	7(16.3%)
Education	Non-menopausal/ non-pregnant women	30(69.7%)
	Uneducated	26(36.6%)
	Primary	21(29.6%)
	Middle	2(2.8%)
	Secondary	13(18.3%)
	Higher Secondary & Above	9(12.7%)

I. Health Conditions

Majority of the individuals attending camp came for treatment of acute illnesses (91.5%) and most of them reported coming from faraway places (69%). Pregnant women were facing extreme difficulties in getting their antenatal monitoring. No laboratory investigations could be carried out. Frequency & percentages of health & health related services are presented in Table 2.

Table 2: Health condition on arriving camp (n=71)

Services	Response	Count (Percentage)
Purpose of visit	Acute Illness symptoms	65(91.5%)
	Routine Visit (antenatal)	6 (8.5%)
Distance from Health care facility	Far	49 (69%)
	Near	22 (31%)
Delay in seeking healthcare services	Yes	68(95.8%)
Reason for delay	Family Restriction	3(4.41%)
	Non-availability of services	65(95.5%)
Duration of symptoms	< 3 days	48(67.6%)
	3 to 6 days	15(21.1%)
	>6 days	8(11.3%)
Types of symptoms (presenting complaints)	Diarrheas	25(35.2%)
	Abdominal Pain	17(23.9%)
	Vomiting	23(32.4%)
	Red eye	3(4.2%)
	Skin lesions	2(2.8%)
	Increased urinary frequency	3(4.2%)
	Burning Micturition	2(2.8%)
	Sore Throat	1(1.4%)
	Cough	9(12.7%)
	Headache	18(25.4%)
	Fever	39(54.9%)
	Vaginal Itching	2(2.8%)

Upon examination, individuals were found to have different illnesses. Out of these 35, 24(33.8%) were diagnosed as a case of acute diarrhea and 11(15.4%) as gastritis. Other prevalent infections included malaria in 14(19.7%), respiratory infections in 16(22.5%) and 10(14.1%) were suffering from dengue, refer to figure 1.

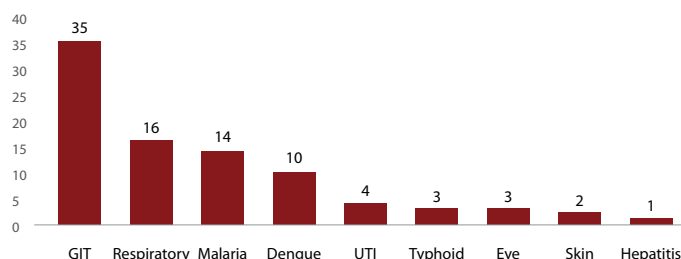


Figure 1: Probable Diagnosis for type of infections (n=71)

II. Basic Life Necessities

Among respondents only half of the flood survivors 34(47.9%) were living under some shelter like tent, building or house as shown in figure2.

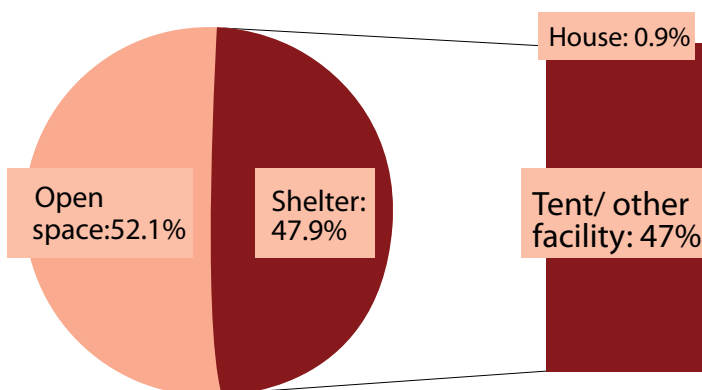


Figure 2: Type of living arrangement (n=71)

Those living in tent reported sharing room with >4 persons. Out of 31 persons using tent, 11 were sharing room with 4-6 persons, 19 were sharing with 7-10 persons while 1 was living with >10 persons in a room.

Water need was fulfilled by only 2 (2.8%) individuals. Only 1(1.4%) subject reported site cleanliness by garbage collection and others reported unclean living space. Stagnant water in surroundings was reported by 27(38%). Toilet facility was mostly available outdoors for 67 (94.3%) individuals. Bathing facility was available for only 14 (19.7%) people.

Regarding food 56 (78.9%) subjects mentioned that they received full meal once daily whereas 15(21.1%) mentioned they received twice daily. All of them reported that they received carbohydrates in some form, some received proteins and fruits, but none consumed nuts.

When subjects were asked about overall satisfaction with provision of the services 1(1.4%) were partially satisfied, 17(23.9%) were satisfied, 42(59.2%) were partially dissatisfied & 11(15.5%) were totally dissatisfied.

Table 3: WASH (Water, Sanitation and Hygiene Services) status (n=71)

Service	Type	Need fulfilled (n)	Unmet need (n)	Total (n%)
Drinking Water		Enough amount	Not enough	
	Bottled water	2	22	24 (33.8%)
	Boiled water	0	1	1 (1.4%)
	Other sources	2	44	46 (64.7%)
Toilet facility		Proper facility	No proper facility	
	Indoor	4	0	4 (5.6%)
	Outdoor	24	43	67 (94.3%)
Waste management facility		Cleanliness maintained	No cleanliness maintained	
	Routine Garbage collection	1	1	2 (2.8%)
	No Garbage collection	0	69	69 (97%)
	Clearance of stagnant water	1	43	44 (62%)
	No clearance of water	0	27	27 (38%)

Table 4: Availability of Necessary Commodities (n=71, for sanitary pads n=43)

Variables		n (%)
Meal frequency	Once	56
	Twice	15
Food sources	Carbohydrates (Roti, chawal, Dalia, etc.)	71
	Proteins (chicken, mutton, beef, egg)	7 (9.9%)
	Fruits	1(1.4%)
	Vegetables	38(53.5%)
	Milk	20(28.2%)
	Nuts	0
Mosquito Prevention services	Nets	3(4.2%)
	Mosquito coils/ lamps	10(14.1%)
	Mosquito repellent lotions	15(21.1%)
Sanitary pads	Need fulfilled	0
	Unmet need	30
	Not applicable	13

DISCUSSION

This study aimed to assess the health conditions and living situation after floods of 2022 in Pakistan. The survey was conducted in a flood affected union council of district Rajanpur

Punjab, Pakistan. This study included both males and females. Among respondents 47.9% were living in some form of shelter like tent, building or house and 52.1% were living in open space. Clean site was reported scarcely. Majority (95.8%) of respondents were delayed in seeking medical attention. Stagnant water in surroundings was reported by many. Regarding food subjects mentioned that they received full meal once daily whereas some mentioned they received twice daily. All of them reported that they received carbohydrates in some form. Some received proteins (animal sources), few consumed fruit, vegetables, and milk but no one consumed nuts.

The survey also showed that most of the flood survivors were suffering from acute diarrheal illness (33.8%) due to questionable sanitation and hygiene. The frequency of infectious disease was almost similar in floods of 2011, August in Rajanpur, Punjab with 30% gastrointestinal infections, respiratory tract infection (21%), eye infections (7%), malaria (4%), ENT infections (5%) and skin infection (33%)¹¹. However, in 2011 study of the same district, skin infections were far more frequent (33%) as compared to 2022 study (2.8%). Difference maybe because of different timing of floods, and lower sample size in present study. Usually, acute diarrheal diseases remain prevalent in the flood prone areas even after months. Floods leave immediate and long-lasting effects on health¹. Acute respiratory infections (25%) were also reported as many people were living in closed spaces at the same time. As big percentage of our respondents were sharing closed space, they can be considered three times prone to transmission of respiratory tract infections. The risk of spread of respiratory infections depends on multiple factors such as time of exposure, number of people in same space, and intensity of mixing¹².

Skin and eye infections such as conjunctivitis, red eye and skin lesions of different etiologies were frequently caused by direct contact with contaminated water. Due to unavailability of proper toilet facilities, several cases of urinary tract infections were received. Availability of clean water was an issue leading to improper personal hygiene. Only 33.8% of respondents were getting bottled water while only 1% used boil water. 14.1% respondents were using mosquito coils and 21.1% were using repellents as a prevention to mosquito borne diseases. Only 4.2% had access to mosquito nets. These measures are somehow effective in combating infections¹³. Similar study in recent flood showed stagnant water, and lack of facilities leading to the risk of malaria, dengue, and other water-borne disease epidemics¹⁴.

Pakistan has been blessed by immense amount of water resources which are especially tributaries of Indus River. Northern parts of the province receive good amount of rainfall throughout the year, while southern part mostly relies on monsoon rainfall (July to August) that enhance the crop capacity of these areas and can have torrential rains¹⁵. Due to poor planning and mitigation strategies, a large population is always at risk for floods⁹⁻¹⁶. To assess the vulnerability, a household study was conducted in Pakistan which showed 95% of population did not have any access to any emergency plans or awareness regarding measures in case of flood. Nearly half of population did not receive any warning signs due to official negligence¹⁷. Individuals approached in our survey were emotionally disturbed and only 71 gave data. Out of these 71, mostly were not satisfied with the relief services and expressed lack of attention by government authorities. This endorses what has been reported by many reporters including surveyors of district Rajanpur where flood victims kept calling for help¹⁸.

This study has managed to overcome the scarcity of quantitative data to identify issues of flood survivors for future disaster planning. The problems faced by the individuals were thoroughly inquired. This article however doesn't highlight those people who couldn't reach medical camp on that specific day when the research was conducted. Due to this, the factual results of the research might not be generalizable over all district. Moreover, as a result of inability to access, incapacitated patients suffering from major diseases might have gone unrecorded on that day at the medical camp. Another weakness of this article is that it was mainly a one-time study. A lot of cases might have not been reported to the camp due to lack of access and awareness about the camp. Also, the number of respondents were limited. Due to limited resources study was conducted at only one union council. Situations of different union councils that are affected from flood can vary according to the availability of facilities, management and according to community response.

CONCLUSION AND RECOMMENDATIONS

This study showed that health of flood survivors was badly affected and the lack of appropriate preventive and curative services added up to the misery of affected. Food access was limited and there was poor access to drinking water, sanitation and hygiene services for majority of the people.

To break the cycle of disaster, respond, recovery, and relief, we need funds for the preparation and planning before disaster. Government should allocate the funds before disaster so that the effects of disaster can be minimized by directing these resources towards training of the people and resilient infrastructures that will not only save lives and disabilities but will also reduce the expenditure on rescue and relief. Although Pakistan is a disaster prone country but unfortunately no funds were allocated to natural calamities in financial plan for the fiscal year 2022-23 but after the flood, 5 billion Rs. were granted for National Disaster Management Authority (NDMA) for rescue, relief and compensation for death and injuries to affectees of the floods. Funding for disaster risk reduction can be enhanced by aligning public and private, domestic and international investment with national and local disaster risk reduction strategies.

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AUTHORS' CONTRIBUTION

Nafeesa Naveed	Conception and design, Drafting the Article
Noor us Saba	Conception and design, Drafting the Article
Musa Nadeem	Drafting the Article
Dr.Fariha Salman	Conception and design, Analysis and interpretation of data, Drafting the Article, Critical revision
Dr.Faiza Raheem Paracha	Acquisition of data
Dr.Hamna Khan	Drafting the Article, Critical revision

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