

An assessment of government interventions in water sanitation and hygiene in rural district Peshawar, KPK, Pakistan

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Abstract

The present study entitled an analysis of government interventions and community satisfaction in WASH Program in district Peshawar. A total of 359 respondents' were proportionally allocated to each village and then, selected through simple random sampling techniques. Data were collected on a three-level Likert scale interview schedule encompassing all study variables. Chi-square test was used to test the association amount of study variable. Finding regarding the government intervention, volunteer community practices and community satisfaction showed significant association with message delivered to respondents families regarding health hygiene ($p = 0.000$), remembrance of message related to hygiene which they participated ($p = 0.000$), selection for assistance ($p < 0.008$), reason of selection for the support ($p = 0.000$), respectively, the study found that people had high degree of satisfaction with regards to the initiation, execution and deliverance of the project. As a strong follow-up mechanism, maximum participation of community and intervention of public sector were recommended.

Keywords: Water sanitation and hygiene, government intervention for upbringing positive change in material and non-material culture, community satisfaction.

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1. Introduction

In the report of PACOSAN (2009), water contamination stems out from the approach of locals achieving water as a God's gift; seldom strive for its judicious use, making it free from pollution rather considering it as the sole responsibility of state. Such arguments over water distribution have long been diverted to the state. This is most obvious from the oblivious attitude of the locals that only one filtration plant out of 12 is functional (PACOSAN, 2009). Health initiatives, conspicuously revolving around access to safe and clean drinking water with proper sanitation practices from general public irrespective of their social economic background can ensure a success against the contamination of water borne diseases. Perhaps, a policy bond on the assumption of a 'some for all' instead 'all for some' could lead to mitigation safe drinking water provision with maximum involvement of community by making them master of this vital resource with practical training on sustainable basis, it could safeguard millions of children from diarrhoea, which engulf the lives of 1.6 million every 5 years on universal basis (UNICEF, 2008). The financial advantages of enhanced hygiene and sanitation have solid relationship between livelihoods and improved gentle water provisions, whether for drinking or domestic use. Moreover, in better-off states, past expenditure in water provision as well as the volume to put more in the contemporary expands water reservation and, apparently, success in well-being (Pan American Health Organization, 2001). The study conducted in Nigeria suggests that unhygienic materials, for instance, toilet/tissue paper and pieces of clothing might harbour contaminating administrators that frequently flourish under blood society medium, and reusing of these stuffs may along these lines establish a wellspring of genital disorder. However, it is obvious of proper disposing off these used toilet/tissue paper (Adinma & Adinma, 2008). As one of beneficial attribute hygiene practices are being prescribed hard on sustainable basis by one of the leading international NGO in WASH sector, however, its effectiveness is vivid only during its operational period and soon disappears after the culmination of its formal operation. The outcome pertaining to healthcare in water distribution services have been at stake, when even no maintenance or poor maintenance leads to affect water quality, the smooth provision of green drinking water meet at eventuality either by defaaction or break up in water supply practices with complete focus on its treatments. Such scenario may take back the beneficiaries to rely on the earlier situation, which contained the use of uncleaned water resulting into the wastage of time and money. Reduction in property embodies in the continuation of smooth sanitation water services and health standard are improved, which proved fruitful in attainment of education leading to broad-based economic activities at regional and national level and longer period of time and positively coping the climate change dynamics (Water Aid, 2012). Maximum achievement and deliverance of improved services are visible across the globe. It could easily be envisaged from millennium development goal, initiated by WHO and UNICEF (2012). However, it could not meet the required target. In case of Africa, despite 322 million African succeeded in having access to pure drinking water during the period from 1990 to 2010. Gram themselves 65 million is still lagging behind with reference to this vital commodity of life, In addition, some 2.5 billion across the globe are with no access to clean drinking water, which constituted almost one-third, 1/3, of the total world population despite having annual cost over clean water supply and sanitation up to 260 billion US\$ on annual basis. It is therefore to mention that 2015 is about to meet for almost quarter century for development of Millennium Development Goals (MDGs) approach, which has accelerated the debate regarding appropriateness of goal achievement for the next quarter century dynamics, which is essential as nearby 1.6 million kids below 5 years, which is almost 15% of the total population of world, have witnessed death (Pan American Health Organization, 2001). National strategies in view of the standard of 'some for all' as opposed to 'all for some' have been the way to enhancements in numerous nations. What's more, at the neighborhood level, assets requisite for retargeting to incorporate the vulnerable groups, with local government in line with private sector co-operating to bring up reasonable arrangements. Consumable water being the premise of all life, yet for a great many kids, the water they drink can likewise be a source of persistent illness, tireless disease, prompting an early grave. It has been concluded that low income countries population is frequently subjected to water borne diseases due to widening income gap due to lacking of a sound paradigm of sanitation and hygiene promotion as effective intervention curtailing the water borne

diseases. In addition, lack of reliable data with respect to WASH including school, workplace and even healthcare facilities has led to the failure of WASH in accomplishing its task-oriented results (Klein, Smith & Laxminarayan, 2009). Keeping into consideration the lacking of any methodological determination of working dynamics, the present study would focus on highlighting the level of awareness, obstructing aspects while coming up with sound doable recommendations to be put forwarded to policy makers both in public and private sectors. Moreover, it will also try to bring into highlighting the general public satisfaction over health, hygiene and sanitation practices prevailing in study area (Kokotsis, 2014). Water supplies, their consumption either for drinking purposes or for domestic use along with health services in our national country Pakistan have several inadequacies, shortcomings and challenges. The complete access to better-quality towards drinking water source in Pakistan estimated for urban is 95% and for rural area is 87%. Approach to developed sanitation services is estimated at 72% in urban areas while for rural areas it ranges to 29% (UNICEF, 2010). Municipalities does not play their role properly. However, in urban settlements, the town committee workers are dutiful in VIP's residency zone. Moreover, municipality services should focus on certain township and also, should continue to focus with attention to remove all WASH-related issues. Furthermore, they should select a certain locality launched WASH program fully equipped with WASH perspective and replicate that model to other villages/slums. The non-governmental organizations ought to distinguish their particular regions for intervention on need prioritisation based (Chambers, 2012). The general awareness campaign is conducted through capacity building trainings regarding healthy practices. Information in participatory approaches is a benefit as well as sensitising them through dummy characters and cartoons by showing them the drama script. The teaching manual guideline will be the essential manuscript to start the hygiene education training and is clearly laid out and can be followed by instructors used in participatory methods and training on sanitation. The training handbook is helpful in pointing out potential weaknesses and the do's and don'ts of capacity building workshop, facilitation and community approach (WHO & UNICEF, 2014). In MDGs, the issue of WASH did not resolved until now, however, half of the world population is going for open defaecation. Moreover, the WASH services need to be continued for more time. However, 2.5 billion individuals still need access to improved sanitation practices (Rheingans, Constenla, Antil, Innis & Breuer, 2007). The major portion of family money spends on faeco-orally transmitted disease in developing countries. However, some studies focused on unawareness rising of these deprived nations on non-vaccination practices to neonatal (Rheingans, Constenla, Antil, Innis & Breuer, 2007). Cities are expanding day by day due to rural-urban migration. This city scattering resulted in establishment of new urban slums. The government is not incorporating the lesson learnt from last failure. Moreover, that undersigned structure of housing resulting in open defaecation and bad sewerage system, which ultimately resulting in life loses of own as well as neighbours life at stake (Carney, 1998). Developing countries government is formulating policies for WASH in the result of research work and reports of world health organization. Furthermore, study reveals that human development is only possible, when the life expectancy at birth is high. Moreover, without intense focus on WASH sector, the human development measures are not possible (Hutton, Haller & Bartram, 2007). Hygiene and Sanitation programmes are only sources of fight against diarrhoea and other related diseases, Furthermore, it is said that instead of curing diarrhoea, it is very easy to prevent it before occurrence. As per an estimation (around US\$3 per DALY diverted for hygiene instruction program and US\$11 for sanitation development), moreover, finding developed on this reason than whatsoever other sort health intervention, for instance, battling against malarial fever, tuberculosis and human safe infection/AIDS. It is only possible under one programme that id capacity building on hygiene and sanitation (Laxminarayan et al., 2006). The challenge towards permanency and sustainable access to WASH services, it is vital that existing services are maintained properly. Therefore, the maintenance of the services needs to be practiced; otherwise it will have many negative consequences on both, design and delivery of the services. However, in developing countries, the deprived communities in the absence of WASH services, people get back to their old practices (Montgomery, Bartram & Elimelech, 2009). Working on hygiene and sanitation from decades and due to occasional failure in the services of water supply source maintenance or filtering water or even hand washing with chemicals due to proper or poor maintenance may leads to reverse back these efforts can

rapidly turn around a few of the hard increased general health benefits (Hunter, Zmirou-Navier & Hartemann, 2009). Water supply, with some concentrating on may be important. The consideration which is more important should be focused on the gatherings and families which require the longest travel particularly spend over 30 minutes for accumulation of water through vessels. However, in hilly areas of Pakistan, women are assigned the duty to get the water from springs for family use (Hrudey & Hrudey, 2004). Lack of access to needed water and public health assets has been associated with psychosocial apprehension in low- and middle-income countries, for instance Ethiopia and Bolivia, Moreover, with expanded hazard and fear of brutality in schools in South Africa, and danger of sexual wildness in the ghettos of Delhi, and Kampala, Uganda. However, women going outside for defaecation in nature increase the chances of sexual violence (Pickering & Davis, 2012). Ministry of Environment again reported that for sustainability, it is very much essential to continue with these WASH services in current decade. However, the end goal to encounter the water quantity MDG focus on, an additional 260,000 individuals for every single day till 2015 have to access enhanced sources of water. The planner should revise end date of MDGs and expand the services and time to achieve the desired goal (Mukherjee & Shatifan, 2010). Comparatively, adults took care for hygiene and sanitation inside low-income nations. However, the extraordinarily deprived experience on the evil impacts of the hygiene and sanitation found in children. Furthermore, it is the prime responsibility of the state and voluntariness of elders of the community and WASH practitioners to sensitise kids towards health and hygiene practices. Moreover, school going children must be ensured with C2C approach practiced by teacher in school about various excreta-related pathogens that cause free entrails besides debilitate intestinal ingestion, both of which add to weak health (Kelkar & Bhadwal, 2007). Unavailability of toilet specifically in low-income urban regions rises challenges for ladies'. Government should stresses over the availability, however, for women, going outside for defaecation is a big challenge that destroys their feeling of pride and their reputation in society (i.e. open taking off in daylight). Moreover, for women, going out for defaecation maximises the chances of sexual assault (Oswald et al., 2008). During sensitising, the community group health promoter should facilitate the whole process and provide support, Furthermore, hygiene promoters would not let them construct latrine or prevent them from open faeces, they would sensitise towards health issues, Moreover, those decisions should be from that group and community to construct toilet or stop open defaecation (Mutisya & Yarime, 2011). The expenditure in the social sectors as of current year made by the state, NGOs, sponsor offices and private sector. Furthermore, the condition of access to shelter plus sufficient provisions of safe drinking water, although public health issues are miserable in Pakistan. Moreover, absence of good supremacy plus polished methodology, combined with money related necessities contributed vitally to the present circumstance (Ismail, de La Parra, Temmink & Van Lier, 2010).

2. Methodology

The nature of the research study is descriptive to explore the behaviour changed in relation to effective outcomes, in result of WASH Program been initiated in last decade either by government or non-governmental development organizations. The research study was conducted in district Peshawar Khyber Pakhtunkhwa, the data were collected from mass community of target union council.

2.1. Sampling design

A simple random sampling methodology was used to select the respondents for the purpose of data collection. The formulae of proportional allocation used for the sample size to be drawn out from the total number of population size were 5714. The total sample size of the respondents was 359 and was randomly drawn out on the basis of criteria mentioned by Sekaran (2003).

Variables of the study	
Independent variables	Government interventions
Dependent variable	Behaviour change/community satisfaction in WASH program

2.2. Data analysis

The collected data was analysed by using the computer software i.e. statistical Package for social sciences (SPSS, 20 version). The collected data was then transferred on that program, frequencies and percentages were drawn on the basis of data entered in the data base of SPSS.

2.3. Chi square test (χ^2)

Chi-square test is of the great importance amongst the several test of implication established by statistics. Therefore, the Chi-square test is appropriate in large number of problems (Kothari, 2004). Through the test, it is possible for all researchers to test the significance of association between dependent and independent variables; Chi-Square test (χ^2) statistics was used for qualitative data finding association between variables (Independent and dependent variables). The Chi-square test (χ^2) was used while implementing the technique drawn by McCall (1975).

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - e_{ij})^2}{e_{ij}} \quad (\text{Chaudry \& Kamal, 1996})$$

Where ' O_{jk} ' was the observed frequency in the cell corresponding to the intersection of ' J_{th} ' row and ' K_{th} ' column ' r ' the number of rows and ' c ' the number of columns. The formula basically guides one to take the formed origination of the frequencies for each cell, divided by the expected frequency. The resulting value is distributed as Chi square with relevant degrees of freedom, calculated as follows. $d.f = (r - 1)(c - 1)$ (Mac Call, 1975). Whenever the frequencies in the cell were less than five, Fisher's exact test was used instead of simple Chi Square, by taking the procedures of Baily (1982). In addition, it is requisite that the sample size must be objectively huge such that no expected frequency is less than 5, for r and $c > 2$, or < 10 if $r = c = 2$. However, this hypothesis was violated several times in the data and therefore, Fisher exact test (also known as exact Chi-square test) was used instead of simple Chi square. The relationship developed by Fisher is given in equation-II (Baily, 1982);

$$\text{Fisher Exact Test Probability} = p = \frac{(a+b)!(c+d)!(a+c)!(b+d)!}{n!a!b!c!d!}$$

where a , b , c and d are the observed numbers in four cells of contingency table and ' n ' is the total number of observations. SPSS 20, computer software was used for all data analysis, including frequencies, percentage, proportion and Chi-Square.

3. Result and discussion

3.1. Government intervention and behaviour change/community satisfaction in WASH

Water distribution practices are also related to the government interventions. Public health department plays a key role in determining the water distribution practices in the healthcare, along with institutions. There is a relation between the community satisfaction and government intervention with respect to water distribution and sanitation practices. To assess these relations, a few statements were developed, and reproduced below; included in Table 1 with the responded attitudes of the respondents. The results illustrates that 89.7% of the respondents thought that government does invest enough in hygiene and sanitation in their community, 5.8% did not, while 4.5% of the respondents were uncertain. Branch and bound integer linear programming technique for optimum design of municipal

water distribution networks. The constraints include pipe sizes, reservoir levels, pipe flow velocities and nodal pressures. This procedure helped to design a water distribution network that satisfies all required constraints with a minimum total cost (Hooda & Damani, 2017). Sources in respect to the information, they disclosed that hygiene training in past years, 22.8% were of the response that radio/TV, poster/picture were the main source, while 46.5% of them negated the statement and argued that NGO/Agency/Health worker were the sources they received the information as the main channel of knowledge of healthy practices and 30.7% of the respondents identified that school teachers/religious leaders were the key sources. They attained and accessed for the safe purpose of receiving information. It is evident for these findings, that only government were not but others aligned agencies were the source of provision of information and training pertaining to water sanitation. A strong relationship of the awareness of households and willingness to pay them also see the strong effect of communication channels like print and electronic media on the water purification behaviour of the households. In addition to above 35.4% opined that the message delivered to them and their family members regarding health hygiene was at household level session, 38.4% of respondent said that message delivered to them and their family members regarding health hygiene was at cluster level while 26.2% of the respondents indicated the child to child procedure of message deliverance. These informations revealed the different approaches used for sanitation from these organisations. It could be either based on convenience as per situational demand (Biswas et al., 2015). Cholera outbreak explored local views about cholera and the diffusion of health messages, and assessed whether the messages contributed to behaviour change. Radio was the most common source of information⁴³. A majority of 44.0% of the respondents agreed that they when asked the question about recalling of their memories regarding hygiene message about hand washing with soap at critical timings, while 9.2% of the respondents were recalled about to treat drinking water before its use, 46.8% explored their memories of adopting personal hygiene. Notwithstanding, a high proportion of 96.9% respondents revealed that they agreed on being received some kind of assistance, while 1.4% negated and 1.7% of the respondents had no idea of the assistance received. It could be deduced from the information that the respondents only received training and not any assistance in kind or cash. Similarly, 2.8% of the respondents disclosed the selection source as land lord, while 91.9% of the respondents disagreed and said that project staff has selected them for assistance and 5.3% did not reveal their information. The local involvement at community level makes intervention as success. Moreover, political approach of the intervention and dislike makes such efforts vague in terms of transparency. Likewise, 88.0% of the respondents were satisfied and said that they had qualified the selection criteria for getting assistance, while 10.9% of them were not satisfied rather being sought favour of village committees, 1.1% of the respondents were forcefully given the latrine materials by project staff. Most of the deliverance from these organisations was formed to be on merit. However, instances of forcefully provision also discovered but in extreme scenarios of 'denial' from the respondents. Who profits by open spending is a profoundly political question that goes to the way of force relations inside a general public. An imperative part of these political economy issues is the so-called 'paradox of targeting' whereby better focusing on may serve to undermine more extensive political support for a programme (Gunnlaugsson et al., 1998). All the intervention have some positive or negative effects on environment, this section showed that 95.8% of the respondents said that intervention was environment friendly in nature, 3.3% of the respondents were not satisfied of the intervention that it not was environment friendly in nature and 0.8% of them had no idea. In almost all interventions started special emphasis is made on making them environment friendly, by little negative impacts. The present intervention was also found with little lethal effects for the local environment. In Peshawar, that demand for environmental goods including safe drinking water could be higher if income levels are high and if people have access to information and awareness regarding the health risks associated with inferior environmental quality (Bibi, Khan & Khan, 2014). A majority, 97.2% of the respondents, expressed that (NGOs) co-operating to bring affordable solutions to hygiene and sanitation problems, while 2.2% of the respondents were not satisfied of the intervention project initiated by NGOs and 0.6% of them were uncertain. It could be attributed to the efforts of these organisations, shoulder to shoulder with government for providing assistance knowledge pertaining to everyday life. This was perhaps the government ignorance on lack of finance,

which left rooms for NGOs to intervene. Help to water and sanitation focused on areas most needing better access to water and sanitation: Sub-Saharan Africa got 26% of aggregate guide to the division, and South and Central Asia 21%. The poorest nations got 40% of the aggregate. Bilateral, multilateral and NGO money has been channeled into this sector throughout this period and this most serious of development concerns persists (Ekane, Kjellen, Noel & Fogde, 2012). Similarly, a majority 93.3% of the respondents said that WASH services continue to work while 4.5% of the respondents were not satisfied of the WASH services and 2.2% of them had no idea either WASH services should continue or suspend. A proper evaluation study could through light on the success and failure of an activity. The present activity ought to be Google of evaluation, while taking in view the reservations of the locals. It is likely that hygiene promotion activities need to be repeated from time to time say, every 5 years (Cairncross & Valdmanis, 2006).

Table 1. Perception of the sample respondents about government intervention

Statements	Yes (%)	No (%)	Uncertain (%)
Does government invests enough on hygiene and sanitation in your community?	5.8	89.7	4.5
From which of the following sources have you heard about hygiene advice in the past year? (A). Radio/TV, Poster/Picture, (B). NGO/Agency Health Worker and (C). School teachers/religious leaders	22.8	46.5	30.6
How were the message delivered to you and your family members regarding health hygiene? (A). HH Level sessions, (B). Group/cluster level sessions and (C). C2C	35.4	38.4	26.2
Do you still remember any message related to hygiene which you participated in the session (Check if he/she remembers any message from list)? (A). Hand washing with soap at critical timings, (B). Treatment of drinking water and (C). Personal hygiene	44.0	9.2	46.8
Did you receive any kind of assistance?	96.9	1.4	1.7
Who selected you for assistance? (A). Land Lord, (B). Project Staff, (C). Opinion Leader	2.8	91.9	5.3
What was the reason of selection, why were you selected for the support? (A). Qualified the selection criteria (B). Favoured by village committee and (C). Forcefully given the latrine materials by project staff	88.0	10.9	1.1
Do you think it was environment friendly in nature?	95.8	3.3	0.8
Does (NGO, agency, government) co-operating to bring affordable solutions to hygiene and sanitation problems?	97.2	2.2	0.6
Do WASH services continue to work?	93.3	4.5	2.2

3.2. Association between government interventions and hygiene and sanitation/behaviour change in WASH

Table 2 shows a highly-significant association ($p = 0.000$) existed between the type of toilet facility in household use with community satisfaction. Disposition of waste like stool preservation was appropriate with the coded procedures. All these could be the resultant contribution of the project initiation, its deliverance and proper implementation. These findings were similar to (Briscoe, 1984; Kolsky, 1993) who found that though the problem stays uncertain, the agreement about large amounts of stool presentation frequently show intensely debased situations (Cave & Kolsky, 1999). Moreover, a highly-significant association ($p = 0.000$) was found between sharing of toilet by more than one households. It could be the obvious factor associated to huge population size at the household level. Further, a limited number of toilets not up to the requirements of the number of household members could not also be ruled out. Likewise, a high-significant association ($p = 0.000$) was found between the place where babies' faeces are usually disposed with community satisfaction. Likewise, a highly-significant association ($p = 0.000$) was found between the place where adults in HH usually go to

defaecate with community satisfaction. This is perhaps due to the reason that awareness of hygienic practices need to led healthy life achieved through practicing these messages. In fact utilising healthy practices can play a role in healthy physique. In India, 66% of the population lives with unbothered sanitation and a usual 600 million individual's crap outside, speaking to 60% of the worldwide populace honing open defaecation (Coffey et al., 2014). However, a non-significant association ($p = 0.901$) was observed between latrine provided in this project meeting household needs with community satisfaction. It could be associated to cultural practices in which men consider using latrine as losing respect and prestige in the household members. The use of latrine was probably dependent on cultural constraints due to non-using of latrine by male family. It is only confined to children and women in certain cases. Furthermore, a non-significant association ($p = 0.140$) was found between the benefits they see in using the latrine with community satisfaction. They used latrine, however, they did not know little about its effects on the family life. There could be the low level of awareness on just considering these latrines as routine life event, having no profound effects in terms of its usage. Over late decades, persuading affirmation has been aggregated that basic and important prosperity impacts are associated with overhauls in access to basic sanitation and hand washing in workplaces (Freeman et al., 2014). Unlikely, a highly-significant association ($p = 0.000$) was found between the latrine that help them improving lifestyle including privacy with community satisfaction and a significant association ($p = 0.022$) between the drainage facility of household latrine had with community satisfaction. Surface drains contaminated water source and when there was no drain flies and mosquitoes transfer open defaecated faeces particles into their food and made them contaminated through their legs, feathers and body as a source of quick transferring of contamination of open or no drain. Unlikely, a non-significant association ($p = 0.597$) was found between washing of hands after defaecating with community satisfaction to avoid inhaling of impurities and dust, open defaecated faeces particles. People were found opting for washing hands in the initial operationalisation of project. However, they were found pretending of not washing hands due to non-availability of soaps and other cleansing instruments. Kamal and Chambers (2008) found as soon as no compost stays transparently visible of the air, in this manner, an uncluttered control pit restroom will be best ODF whether secured by a lit, and the lit must be secured from flies. Furthermore, a high-significant association ($p = 0.000$) was found between the cleaning of teeth, cutting nail, taking bath etc., with community satisfaction. These results depicted the exercise of certain practices which had led to bringing cleaning. These included were cleaning of teeth, cutting nail, taking bath etc. All these were found in the teaching of Islam as well, which were often preached by the religion shows at various sermons as well (Kamal & Chambers, 2008). Approach examinations on sanitation have concentrated on wellbeing impacts among youngsters under 5 years old, there is developing acknowledgment of the one of a kind wellbeing dangers that ladies and young ladies confront because of insufficient sanitation, including expanded maternal mortality hazard from unhygienic birth practices and poor contamination control. However, a non-significant association ($p = 0.617$) was found between the knowledge about Operation and Maintenance (O & M) Committee trained for water source maintenance with community satisfaction. These findings depicted about the presence of such a facility. The existence of such facility had contributed to the sustainable preservation of cleaning practices and awareness over the issue (Cheng, Schuster-Wallace, Watt, Newbold & Mente, 2012). O & M is a fundamental segment of sustainability, and a ceaseless purpose behind dissatisfaction of water supply and sanitation advantage workplaces some time recently. Various disillusionments are not specific ones. They may occur on account of absence of judgment skills, insufficient cost recovery or the exertion inadequacies of united workplaces. The above findings concluded that sanitation practices were in practice as resultant factors based on awareness and operationalisation of the practices from the project (Bakker, 2003).

Table 2. Association between government interventions and behaviour change in WASH

Statements	Perception	Community satisfaction			Total (%)	Chi-square (P-value)
		Yes (%)	No (%)	Uncertain (%)		
Type of toilet facility does this household use	Flush to pipe sewer system	44.6	55.3	0	100	$\chi^2 = 105.339$ ($P = 0.000$)
	Bucket latrine	14.0	85.9	0	100	
	Filed/bushes	2.7	79.7	17.5	100	
	Total	24.5	71.8	3.6	100	
How many households share this toilet?	Not shared	26.2	70.9	2.8	100	$\chi^2 = 33.074$ ($P = 0.000$)
	Shared	10.5	81.5	7.8	100	
	Communal	0	0	100	100	
	Total	24.5	71.8	3.6	100	
Place where babies' faeces are usually disposed	Kids use toilet	13.6	86.3	0	100	$\chi^2 = 29.000$ ($P = 0.000$)
	Put into toilet	25.1	71.3	3.5	100	
	Left it open	26.0	65.2	8.6	100	
	Total	24.5	71.8	3.6	100	
Place where adults in HH usually go to defaecate	H latrine	31.1	68.8	0	100	$\chi^2 = 71.478$ ($P = 0.000$)
	Other latrine	26.6	73.3	0	100	
	OD/field/forests/bushes	1.3	82.6	7.3	100	
	Total	24.5	71.8	3.6	100	
Latrine provided in this project meeting your HH need	Yes	24.9	71.5	2.5	100	$\chi^2 = 0.209$ ($P = 0.901$)
	No	22	74	4	100	
	Uncertain	0	0	0	100	
	Total	24.5	71.8	3.6	100	
What benefits do you see in using the latrine	Reduce smell	24.0	71.7	4.2	100	$\chi^2 = 6.923$ ($P = 0.140$)
	Privacy	33.3	64.8	1.8	100	
	Uncertain	9.0	90.9	0	100	
	Total	24.5	71.8	3.6	100	
Latrine help you improving your lifestyle including privacy	Yes	25.8	72.9	1.4	100	$\chi^2 = 88.308$ ($P = 0.000$)
	No	0	66.6	33.3	100	
	Uncertain	0	56.2	43.7	100	
	Total	24.5	71.8	3.6	100	
Type of drainage facility your latrine have	Underground	36.5	63.4	0	100	$\chi^2 = 51.179$ ($P = 0.000$)
	Kacha	15.5	79.5	4.9	100	
	No drainage	1.9	84.3	13.7	100	
	Total	24.5	71.8	3.6	100	
What do you use to wash your hands after defaecation	Soap	43.1	67.8	0	100	$\chi^2 = 11.478$ ($P = 0.022$)
	Ash/sand	33.3	66.6	0	100	
	Water only	20.5	73.9	5.4	100	
	Total	24.5	71.8	3.6	100	
Do you clean your teeth, cutting nail, taking bath etc.	Yes	24.6	71.4	3.8	100	$\chi^2 = 2.769$ ($P = 0.597$)
	No	28.5	68.5	2.8	100	
	Uncertain	8.3	91.6	0	100	
	Total	24.5	71.8	3.6	100	
Do you know if there is any O & M committee trained for water source maintenance	Yes	28.4	71.5	0	100	$\chi^2 = 99.181$ ($P = 0.000$)
	No	2.1	70.2	27.6	100	
	Uncertain	10	90	0	100	
	Total	24.5	71.8	3.6	100	

4. Conclusion

Government investment over water and sanitation in rural area also led towards community satisfaction. In addition, running hygiene campaign through radio, TV, poster/picture, NGO, agency, health worker, school teachers, religious leaders disseminated information and learnt on part of community had boosted the community satisfaction level. Selection of families as per vulnerability criteria made the progress more effective and goal oriented, explicitly reflecting a strong impetus of NGOs intervention, parallel to public sector interventions. Hygiene education entails the provision of knowledge and skills in order to safeguard the community from vulnerability to diseases, in order to achieve maximum results. Disseminate the forementioned progress with proper follow-up procedures. Hygiene related products like soap, sanitiser, ladies all types of panties, sanitary cloth and other personal care items are easily available through supply chain, and provision of these items could work as catalyst in mitigating the chances eruption of any contaminated diseases. Developed documentaries showing the state of WASH services and their effect on city life, dramas on WASH themes, talk shows with local leaders and notables, and news by journalist air through local cable channel could be an effective way to change people's attitude towards the WASH practices. Mobile SMS services could be useful in disseminating information, provided that they are in native language. These services should assume the shape package i.e., disseminating to service availability and point of availability of various items help in containment of diseases. WASH services providers should provide preventative health services as an additional standard in order to increase the chances of healthy practices. Moreover, it ought to encourage the local community for maximum participation. Government should provide opportunities and services for vulnerable households and to support those who live in rural communities i.e., behaviour change communication. Moreover, the model declaring local as the real owner would serve towards maximum sustainability of such interventions. After the execution of any programme, the procedure of proper follow up with new innovative ideas and cover of finances civil strength could add more strength and sustainability. Government need to initiate such programme through public sector, initiation of such programme through public sector along with NGOs would generate a sense of competition; this race of competition had to deliver it maximum results with more transparency and local participation as competitive ground.

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