**DESIGN BEHAVIORAL CHANGE ON MOTHERS OF CHILDREN 0 – 59 MONTHS WASHES THEIR HANDS WITH SOAP AT THE FIVE CRITICAL TIMES EACH DAY.**

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**Acronyms**

ADP- Area development program

AP- Area project

BA- barrier analysis

CBO- Community based organization

DBC- Design behavioral change

FBO –Faith based organization

HDA- Health development army

HEW- Health extension worker

I WaSH-Integrated wash sanitation and hygiene

WHO- world health organization

1. **INTRODUCTION:**

**1.1 Back ground**

The disease burden from water, sanitation, and hygiene is estimated to be 4.0% of all deaths and 5.7% of the total disease burden occurs worldwide [1].The WHO estimated that globally, approximately 1.7 billion cases of childhood diarrhea occur each year. Of the leading infectious causes of death, diarrhea was the second responsible for 578,000 deaths among children under 5 years of age in 2013. In Sub-Saharan Africa, diarrhea accounted for 25 to 75 % childhood morbidity and 50 % childhood mortality. In Ethiopia diarrheal disease was the first leading cause for 31% of child illness among children of under 5 years old, [2, 3].

To reduce diarrhea, hand washing habit with soap before feeding child was significantly associated with infant mortality [4]. Especially Lack of hand washing of mothers who are closest to their children at the five critical times .In particular, hand contact with ready-to-eat represents a potentially important mechanism by which diarrhea-causing pathogens contaminate food and water . low maternal education mothers and Households with low economic status and may lack basic infrastructure for proper hygiene practices leads to risk of excreta handling by mothers, caregivers and children and this significantly associated with diarrhea [5,6,7].

 Washing of hands with soap at these critical events have reduce diarrheal morbidity by 44% and respiratory infections by 23% and 27% fewer school absences due to illness, and 46% fewer eye infections due to hand washing. However, globally, the rates at which hands are washed with soap range from only 0-34% of the time [8,9,10,11]. But measuring hand washing behavior can be quite difficult. The gold standard in hand washing behavior measurement is direct observation, in which trained observer watches and records household members’ or health workers’ hand washing at key times over 3 to 24 hours [12].

 Thus, Hand washing is like a "do-it-yourself" vaccine. Regular hand washing, particularly before and after certain activities. It's quick, it's simple, and it can keep us all from getting sick. Hand washing is a win for everyone, except the germs. Hence, it is one of the most important cost-effective measures from the public health point of view [10].Based on this, it is crucial to study on the barrier of hand washing at critical time especially on mothers of under five children.

 **2. Obejective of the study**

* 1. **General objective**

1. To identify the barrier of hand washing with soap at the five critical times each day of Mothers of children 0 – 59 months and implement on the gap identified.

 **2.2 Specific Objective**

1. To identify the difficult of hand washing practices among mothers of under-five children.

2. To identify the bottle neck on practices and the factors influencing hand washing amongst the mothers of under-five children.

3. To bring behavioral change on the identified gabs by giving training.

 **3. Methodology**

 **3.1 Study area**

The study area was limat Kebele which represents the whole Raya Alamata Woreda and then from the identified kebele and gots (walka,Adi bogolja and harele). We assessed on Mothers of children 0 – 59 months wash their hands with soap at the five critical times each day (Doer) and Mothers of children 0 – 59 months not wash their hands with soap at five critical times each day (None Doer).

 **3.2. Sampling**

 **3.2.1. Sample size**

As the DBC standard sampling [17], the sample size was forty seven (47) doers and forty seven (47) non doers totally 94. The priority groups were Mothers of children 0 – 59 months. In addition to, we use sample size greater than 45 Doers and 45 Non Doers, if less than 45 sample size, we may find that no responses show a p-value of less than 0.05. For that reason, we used greater than 45 Doers and 45 Non Doers (47 doers and 47 Non doers).

 **3.2.2 Data process and Analysis**

Data was collected for five days (from 27/02/2017 to 2/3/2017) by Alamata ADP I WaSH project with continues supervision with integration of Quality assurance and I WaSH specialist. The Data collectors are well experienced on survey data collection and they were eight (8) in Number. Six of them were male and two were female.The data collection was done from the selected Limat kebele and gots (walka,Adi bogolja and harele). Data analysis was done with SPSS version 21 and from www.caregroupinfo.org/docs/BA\_Tab\_Table\_Latest.xlsx). If the p-value is not less than 0.05, we ignored the determinant. Regardless of, what the estimated risk ratio is. In that case, there is probably no real difference between Doers and Non Doers. However, if the p-value is less than 0.05, there is a real difference between Doers and Non Doers.

* 1. **Search terms**

Key words used in searching relevant were

Hand washing AND diarrhea, Hand washing and globally, sub-sahran Africa, Ethiopia

Hand washing AND mothers, Hand washing AND under five mothers

* 1. **Inclusive criteria’s**
* Literature were published in English
* Literature were published in the last six years ( 2011-2017)
* Articles which are relevant to the topic and with free access
	1. **Exclusive criteria’s**
* Literatures published before the last six years
* Articles which are not relevant to the topic

 **4. Findings and Discussions**

* 1. **. Result**

**Self –Efficacy:**

With regard to self efficacy, this study has employed a total of 94 (47 non doers and 47 doers) mothers of under five children were interviewed. Out of these mothers 50 % not wash their hand with soap at five critical time (non- doers) and 50% wash their hands wash their hand with soap at five critical times.

The response of none doers and doer make them easier to wash their hand were access to water (45% and 32 %) and have money (47% and 46%) respectively. And make them difficult for non-doer and doers are not access to soap (23% &9%), not access water (6% &30%) and shortage of money (40% & 6%) respectively.

 **Perceived positive consequences**

On the view of perceived positive consequences, both doer and non-doer provided an equal amounting to 68% in order to keep personal hygiene and to prevent from disease. . In addition, out of the total respondents of doers, 26% of them responded to perceive positive consequences of preventing from disease. While non doer response only 13%.

**Perceived negative consequences**

94% and 81% of doer and non-doers said that no disadvantage respectively. But 17% of non-doers said that Wastage of water, money and soap.

**Perceived social norms**

From the interviewed mothers 68% doers and 19% non-doers said most people approved them washing their hand at five critical times with soap. Similarly, 4% doers and 64% non-doers not approved by most peoples47% doers and 83% non-doers said most people disapproved them washing their hand at five critical times with soap. In addition 19% doers and 74% non-doers response no one approved us.On the other hand 32% doers and 6% non-doers approved by their neighbor and family .47%,21%,11% doers were not disapproved by any one ,disapproved by far community from them and disapproved by kebele leader, HEW,&HDA respectively. In the same manner, 83%, 6% and 2% non-doers are not disapproved by any one, disapproved by far community from them and disapproved by kebele leader, HEW, & HDA respectively.

Fig.1 **Social Norms: Indicates who approves to mothers wash their hands at five critical times every day.**

 **Access**

The non-doers and doer replied it is difficult to get the soap need to wash their hands with soap at the five critical times each day 51% and 2% respectively. Similarly the non-doers and doer replied it is not difficult at all to get the soap you need to wash their hands at the five critical times each day 6% and 68% respectively.

 **Perceived Cues for Action / Reminders) efficacy:**

Non Doers are 27.2 more likely to reply; it is somewhat difficult to remember to wash their hands with soap at the five critical times each day than Doers. However, Doers are 23.7 times more likely to replied it is not difficult at all to remember to wash their hands with soap at the five critical times each day than Non Doers.

49% non-doer they believe that their children will suffer from diarrhea if they wash their hands with soap at the five critical times each day. But, 28% only doers believe that their children will suffer from diarrhea if they wash their hands with soap at the five critical times each day.47% non-doers and 68% Doers not believe at all. As the interviewed people replied 47% non-doers and 19% believe that children get diarrhea because of God willing. But 53% non-doer and 81% not believe on divine will.

**Table1. Result on design behavioral change Barrier Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
|  **Mothers of children 0 – 59 months wash their hands with soap  at the five critical times each day.**  |  |  |  |
| **Total Doers** | **47** |  |  |  |  |
| **Total NonDoers** | **47** |  |  |  |  |  |  |
| **Determinants** | **Doers: +Exp.(A)** | **Non-doers: +Exp.(B)** | **Doers %** | **Non-doers %**  | **Odds ratio** | **Estim. Relative Risk** | **p-value** |
|  |  |  |  |  |  |  |  |
| **1. Self-Efficacy :** With your current knowledge, skills and resources do you think you can wash your hands with soap at the five critical times**?**  |  |  |   |   |  |  |  |
| Yes | **47** | **0** | **100%** | **0%** |  |  | ***0.000*** |
| Possibly | **0** | **5** | **0%** | **11%** | **0.00** | **0.00** | ***0.028*** |
| No | **0** | **42** | **0%** | **89%** | **0.00** | **0.00** | ***0.000*** |
| Don't know |  |  | **0%** | **0%** |  |  | **1.000** |
| ***2. Self - Efficacy : What makes it easier?*** |  |  |  |  |  |  |  |
| *Access to soap* | **5** | **4** | **11%** | **9%** | **1.246** | **1.246** | **0.500** |
| *access to water* | **15** | **21** | **32%** | **45%** | **0.611** | **0.611** | **0.144** |
| *access to soap and water* | **16** | **13** | **34%** | **28%** | **1.308** | **1.308** | **0.328** |
| *access to soap,water and hand washing facilities* | **8** | **5** | **17%** | **11%** | **1.614** | **1.614** | **0.276** |
| *Access to water and have money* | **2** | **2** | **4%** | **4%** | **1.000** | **1.000** | **0.692** |
| *access to water and shop* | **1** | **1** | **2%** | **2%** | **1.000** | **1.000** | **0.753** |
| *Have money* | **0** | **1** | **0%** | **2%** | **0.000** | **0.000** | **0.500** |
| **3. Self - Efficacy: Makes it Difficult:**  |  |  |  |  |  |  |  |
| *No problem at all* | **20** | **1** | **43%** | **2%** | **34.07** | **11.264** | ***0.000*** |
| *shortage of money and no access to water* | **4** | **4** | **9%** | **9%** | **1.00** | **1.000** | **0.643** |
| *Shortag of money* | **3** | **19** | **6%** | **40%** | **0.10** | **0.116** | ***0.000*** |
| *No access to water* | **14** | **3** | **30%** | **6%** | **6.22** | **4.439** | ***0.003*** |
| *No access to soap* | **4** | **11** | **9%** | **23%** | **0.30** | **0.331** | ***0.044*** |
| *Not access to water,soap , shop and expensive* | **1** |  | **2%** | **0%** |  | **10.196** | **0.500** |
| *No access to water and soap* | **1** | **6** | **2%** | **13%** | **0.15** | **0.164** | **0.055** |
| *No acess to soap and money* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| *No access to water and money* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| *bad smell of soap* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| **4. Positive Consequences: What are the advantages?**  |  |  |  |  |  |  |  |
| *To keep personal hygiene and to prevent from disease* | **32** | **32** | **68%** | **68%** | **1.00** | **1.000** | **0.587** |
| *To prevent from disease* | **12** | **6** | **26%** | **13%** | **2.34** | **2.099** | **0.095** |
| *To keep personal hygiene*  | **2** | **7** | **4%** | **15%** | **0.25** | **0.277** | **0.079** |
| *To keep our health and decrese medical cost* | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| *Have no any advantage* | **0** | **2** | **0%** | **4%** | **0.00** | **0.000** | **0.247** |
| **5. Negative Consequences: What are the disadvantages?** |  |  |  |  |  |  |  |
| *No disadvantage* | **44** | **38** | **94%** | **81%** | **3.47** | **3.192** | **0.060** |
| *Wastage of water* | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| *Wastage of money* | **1** | **4** | **2%** | **9%** | **0.23** | **0.254** | **0.181** |
| *wastage of soap* | **1** | **2** | **2%** | **4%** | **0.49** | **0.516** | **0.500** |
| *Wastage of money, water and soap* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| *Wastage of water and money* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| *Make food spoilage* | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| **6. Social Norms: Do most people approve?**  |  |  |  |  |  |  |  |
| Yes | **32** | **9** | **68%** | **19%** | **9.01** | **6.740** | ***0.000*** |
| Possibly | **13** | **8** | **28%** | **17%** | **1.86** | **1.732** | **0.161** |
| No | **2** | **30** | **4%** | **64%** | **0.03** | **0.032** | ***0.000*** |
| **7. Social Norms: Who approves?**  |  |  |  |  |  |  |  |
| *No any one approves* | **9** | **35** | **19%** | **74%** | **0.08** | **0.107** | ***0.000*** |
| *My neighbour and HEW* | **4** | **0** | **9%** | **0%** |  | **10.837** | **0.058** |
| *My family and neighbour*  | **15** | **3** | **32%** | **6%** | **6.88** | **4.777** | ***0.002*** |
| *Health proffessionals and Health development army*  | **2** | **0** | **4%** | **0%** |  | **10.400** | **0.247** |
| *Health devolpment army and HEW* | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| *My family* | **9** | **6** | **19%** | **13%** | **1.62** | **1.530** | **0.287** |
| *My neighbour*  | **5** | **3** | **11%** | **6%** | **1.75** | **1.629** | **0.357** |
| *My family and HEW* | **2** | **0** | **4%** | **0%** |  | **10.400** | **0.247** |
| **8. Social Norms: Who disapproves** |  |  |  |  |  |  |  |
| *No one approved me* | **22** | **39** | **47%** | **83%** | **0.18** | **0.229** | ***0.000*** |
| *Agricultural professions*  | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| *Feath leaders* | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| *My family and neighbour*  |  | **2** | **0%** | **4%** | **0.00** | **0.000** | **0.247** |
|  *community far from us* | **10** | **3** | **21%** | **6%** | **3.96** | **3.163** | ***0.035*** |
| *Agricultural professions,far people and Kebele chairman* | **4** | **0** | **9%** | **0%** |  | **10.837** | **0.058** |
| *Kebele leaders ,HEW and HDA* | **5** | **1** | **11%** | **2%** | **5.48** | **3.878** | **0.102** |
| *Community and HEWs* |  | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| *Kebele leaders and far people* | **4** | **1** | **9%** | **2%** | **4.28** | **3.270** | **0.181** |
| **9. Access - how difficult is it to get what you get** the soap you need to wash your hands at the five critical times each day**?**  |  |  |  |  |  |  |  |
| Very difficult | **1** | **24** | **2%** | **51%** | **0.02** | **0.025** | ***0.000*** |
| Somewhat difficult | **14** | **20** | **30%** | **43%** | **0.57** | **0.604** | **0.142** |
| Not difficult at all | **32** | **3** | **68%** | **6%** | **31.29** | **14.861** | ***0.000*** |
| **10. Reminders - how difficult is it to remember?**  |  |  |  |  |  |  |  |
| Very difficult | **1** | **1** | **2%** | **2%** | **1.00** | **1.000** | **0.753** |
| Somewhat difficult | **4** | **37** | **9%** | **79%** | **0.03** | **0.037** | ***0.000*** |
| Not difficult at all | **42** | **9** | **89%** | **19%** | **35.47** | **23.698** | ***0.000*** |
| **11. Risk- How likely to get the problem?**  |  |  |  |  |  |  |  |
| Very likely | **1** | **1** | **2%** | **2%** | **1.00** | **1.000** | **0.753** |
| Somewhat likely | **35** | **41** | **74%** | **87%** | **0.43** | **0.476** | **0.095** |
| Not likely at all | **11** | **5** | **23%** | **11%** | **2.57** | **2.259** | **0.084** |
| **12. Severity - How serious is the problem?**  |  |  | **0%** | **0%** |  |  |  |
| Very serious | **10** | **8** | **21%** | **17%** | **1.32** | **1.279** | **0.397** |
| Somewhat serious | **29** | **35** | **62%** | **74%** | **0.55** | **0.590** | **0.134** |
| Not serious at all | **8** | **4** | **17%** | **9%** | **2.21** | **1.986** | **0.177** |
| **13. Action Efficacy -** How likely is it that your child will suffer from diarrhea if you wash your hands with soap at the five critical times each day**?**  |  |  |  |  |  |  |  |
| Very likely | **2** | **2** | **4%** | **4%** | **1.00** | **1.000** | **0.692** |
| Somewhat likely | **13** | **23** | **28%** | **49%** | **0.40** | **0.434** | ***0.028*** |
| Not likely at all | **32** | **22** | **68%** | **47%** | **2.42** | **2.226** | ***0.030*** |
| **14. Divine Will - God will** that children get diarrhea**?**  |  |  |  |  |  |  |  |
| Yes | **9** | **22** | **19%** | **47%** | **0.27** | **0.301** | ***0.004*** |
| No | **38** | **25** | **81%** | **53%** | **3.72** | **3.323** | ***0.004*** |
| Won't say/doesn't know | **0** | **0** | **0%** | **0%** |  |  | **1.000** |
| **15. Culture -** Are there any cultural rules or taboos against washing your hands with soap at the five critical times each day**?**  |  |  |  |  |  |  |  |
| Yes | **2** | **4** | **4%** | **9%** | **0.48** | **0.505** | **0.339** |
| No | **44** | **41** | **94%** | **87%** | **2.15** | **2.024** | **0.243** |
| Don't know/won't say | **1** | **2** | **2%** | **4%** | **0.49** | **0.516** | **0.500** |
| **16. Policy -** Are there any community laws or rules in place that make it more likely that you wash your hands with soap at the five critical times each day.  |  |  |  |  |  |  |  |
| Yes | **15** | **7** | **32%** | **15%** | **2.68** | **2.356** | ***0.043*** |
| No | **32** | **39** | **68%** | **83%** | **0.44** | **0.485** | **0.075** |
| Don't know/won't say | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |
| **17. Universal Motivators -** What is the one thing that you desire most in life**?**  |  |  |  |  |  |  |  |
| To work in agriculture, to become wealthy and educate my children | **3** | **2** | **6%** | **4%** | **1.53** | **1.458** | **0.500** |
| To continue my education and to be wealthy | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| To educate may children | **11** | **2** | **23%** | **4%** | **6.88** | **4.647** | ***0.007*** |
| Live in town | **1** | **1** | **2%** | **2%** | **1.00** | **1.000** | **0.753** |
| Bussiness man | **2** | **0** | **4%** | **0%** |  | **10.400** | **0.247** |
| Happy family  | **4** | **0** | **9%** | **0%** |  | **10.837** | **0.058** |
| To be rich and healthy | **9** | **7** | **19%** | **15%** | **1.35** | **1.309** | **0.392** |
| To be healthy | **3** | **0** | **6%** | **0%** |  | **10.614** | **0.121** |
| To go Areb  | **1** | **1** | **2%** | **2%** | **1.00** | **1.000** | **0.753** |
| To be rich and live in town | **3** | **3** | **6%** | **6%** | **1.00** | **1.000** | **0.661** |
| To be rich and educat my children | **3** | **5** | **6%** | **11%** | **0.57** | **0.599** | **0.357** |
| Happy family and educat my children | **2** | **1** | **4%** | **2%** | **2.04** | **1.855** | **0.500** |
| Healthy and to have electric power in my community  | **1** | **0** | **2%** | **0%** |  | **10.196** | **0.500** |
| To have access water at home level and live in town | **3** | **1** | **6%** | **2%** | **3.14** | **2.602** | **0.308** |
| To be riched and improved life | **0** | **18** | **0%** | **38%** | **0.00** | **0.000** | ***0.000*** |
| To be rich, healthy and educate my children | **0** | **5** | **0%** | **11%** | **0.00** | **0.000** | ***0.028*** |
| Access to latrine,water and electric power | **0** | **1** | **0%** | **2%** | **0.00** | **0.000** | **0.500** |

* 1. **Discussion**

Based on the result, the non doers and doers make them easy and difficult to washing their hand with soap at five critical time were depend on their income status and available of hand washing facilities. For the non-doer and doers Make them easier (45% and 32 %) and have money (47% and 46%) respectively. And make them difficult for non-doer and doers are not access to soap (23% &9%), not access water (6% &30%) and shortage of money (40% & 6%) respectively. This indicates hand washing with water only or with soap influenced by availability of water and soap and as well as substantial resources [7].

 In rural Amhara region of Ethiopia,Findings indicates that**,** only 21% of latrines had hand washing facilities, none of which contained soap, and less than 4% of households had access to adequate sanitation facilities. Even if knowledge of hygiene exists, water and soap were three times more likely affected to wash their hands before eating or after using the toilet [11].

 As the result indicated that both non doers and doer have the same awareness on hand washing is used for hygienic and to prevent disease. But the doer twice more aware on hand washes only for disease prevention. Because proper knowledge regarding the transmission of diseases through contaminated hands can bring about a behavioral change and improve hand washing practices at critical events [13].This indicated that there is lack was reported by other study done in Southwest Ethiopia. Hand washing with soap before feeding child was found to be significant in determining infant mortality. Infants whose mothers did not use soap for hand washing were more likely to die than whose mothers used soap **[4].**

 Even though 81% non-doers and 94% doer similarly said hand washing at critical time has no disadvantage. But 17% of non-doers said that Wastage of water, money and soap. Similarly, in other finding stated that the number of recommended times for hand washing with soap would often exceed 20 times per day. This frequently, especially if practiced by all family members, would affect household finances [14].

 As the result indicted, Doers are 6.7 times more likely to give most people approved them washing their hand at five critical times with soap than Non Doers. Similarly, non-doers were 30.9 more likely to give the response not approved by most people than Doers. In addition the non-doer needs approval from most peoples, community, families, neighbors, husbands, kebele leaders, health extension workers and health development armies to encourage the none doers to wash their hands at five critical time every day.

Low income generation and awareness can hindered practice hand washing of mothers at the five critical times each day. As the finding indicated when we compared the determinant of accessibility; Non Doers were 39.5 more likely to response it is difficult to get the soap need to wash their hands with soap at the five critical times each day than doers. Similarly, findings also indicated that, several sub-Saharan African countries (i.e. Kenya, Senegal, Tanzania, and Uganda) reported that 17% of participants washed their hands with soap after using the toilet, while 45% used only water due to Lack soap and water [11] .The barriers to washing hands with soap in low-income communities included the high cost of soap relative to household income [14].

 Hand washing with soap at five critical times each day for The Non doers are 27.2 more somewhat difficult to remember than doers. Similarly, Doers are 23.7 times more likely response that not difficult at all to remember to wash their hands at five critical times each day than non-doers. This indicated, it depends on the awareness of the community. Or as research conducted in rural Bangladesh stated that, Left out of soap in a convenient place would be wasted by children playing with it or stolen, and the time required and inconvenience of fetching soap or Soap was not observed with hand washing facility [14,15].

 As the result indicated, they believe diarrhea may cause by God willing. But hand washing habit with soap before feeding child was significantly associated with infant mortality [4]. In other study also stated that among children whose mothers not practiced hand were washing at critical time with soap were more likely to develop diarrhea when compared to children whose mothers were practiced hand washing at critical time with soap [16].Similarly, it was found that hand washing practice of child’s caregiver and environmental hygiene were important risk factors for diarrheal disease occurrence rather than willing of God [3].

**Table2.Implementation of DBC based on the result found**

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| --- | --- | --- | --- | --- |
| **Behavior**  |  |  |  |  |

 | **Priority Group or Influencing Groups** | **Determinants** | **Bridges To Activities** | **Activities** |
| Mothers of children 0 – 59 months wash their hands with soap at the five critical times each day | Priority Group: Woreda Alamata limat kebele Mothers of children 0 – 59 months wash their hands with soap at the five critical times each day.  Live in rural setting  Go to church on Sunday morning  Are busy with daily household chores  Want to be perceived as good mothers and wives  Mothers with poor family  Mothers wash their hand at 1-4 times out of five critical time  Majority are in partial action stage Influencing Groups:  Husband and mother in low  | **Self –Efficacy** make it difficult for mothers to wash their hand at five critical times each day is shortage of money and no access to soap and water**Perceived positive consequences**Mothers believe that to keep personal hygiene and to prevent from disease.**Perceived negative consequences**Some mothers believe that it is wastage of money and soap.**Perceived social norms:**  Non doer Mothers believe that 9.4 more likely not approved by any one.And the doer mothers 4.8 more likely believe that approved by their husband and neighbor.**Access**The non-doer mothers have 39.5 likely very difficult to wash their hands more than doer mothers.**Perceived Cues for Action / Reminders) efficacy:** – None doer Mothers believe that somewhat difficult to remember washing their hand at Five critical times. And the mothers will believe that somewhat difficult from diarrhea. | 1. Decrease the perception that who wash their hand at five critical times each day cause economically crisis and wastage of water. 2. Increase the perception wash their hand at critical time each day make to have healthy life 3. Increase the perception wash their hands save money rather than wasted that expensed due to medical costs.4. Increase the perception that, husbands, religious leaders and mothers in low approve of wash their hands with soap at the five critical times each day and that their religious tradition is supportive of wash their hands with soap at the five critical times each day4. Decrease the perception that mothers seem to wash their hands as difficult activities5. Improve the availability of sanitation facilities (water and soap) at latrine.6. Reinforce the community that think themselves as they have not any ability to wash their hands and difficult to them for remember.  | 1. Select model mothers who wash their hands with soap at five critical times every day related with economically the same standard within the community with best testimony at meetings in the community/ health facilities (following child immunization sites and health promotion sessions).Create awareness on hand washing related with healthy life. 2. Discuss with community natural leaders and influential persons about the seriousness of communicable disease especially diarrhea related with hand washing of mothers and baby washing and make them to ignite on doing the activity.3. Give Kebele leaders, FBO,CBO training on hand washing at five critical time every day for under five mothers on their use. 4. Training of mothers that have close relationship with Mothers of children 0 – 59 months like HEW, kebele women affair ,health development army, five to one network group leaders and fistula healed mothers(ambassadors) |
| Outcome Indicator: Percentage of targeted Mothers of children 0 – 59 months wash their hands with soap at the five critical times each day. | Process Indicators: * Trained number of women who heard testimonials
* Trained Kebele leaders, FBO,CBO, HAD, HEW, kebele women affair ,health development army, five to one network group leaders and fistula healed mothers(ambassadors)
* Trained health experts work in immunization sites
 |  |

1. **Limitation**

There were several limitation in this research .some of the limitations were resources and time constraints. Especially there is limitation written articles on DBC to show the best direction through comparison of the recent findings and results with this research. The other limitation, also the most recent materials are not free to download from internet.

1. **Conclusion and recommendations**

  **6.1. Conclusion**

As the research indicated that Mothers of children 0 – 59 months wash their hands with soap at the five critical times each day was hindered due to lack of awareness, lack of hand washing facilities especially not accessed to water and soap. In addition, low income generation (resource) also barrier to hand washing practice to them. The community also needs approval from government, community leaders, Faith based organization and community based organizations.

 **6.2. Recommendations**

To improve lagging behind hygiene facilities need high integrity at national level on political commitment, priority on hygiene facilities, concrete follow up on implementation of hygienic practice till sustainable impact found.

Strengthen community leaders, faith leaders and community based organization to have them commitment on hand washing practice.

Launch of several initiatives, motivations and reward to alleviate inadequate hygiene services by investing appropriate technologies.

Motivate health extension to have great integration with local leader and community influential persons. Till the community adapt hand washing as culture and not washing hand at critical time as taboo.

Relevant and updated researches are needed to identify major bottle necks of hand washing.

Motivate active participant of professionals, private clinics, and hospitals on disease prevention and implement hand washing as their major duties.

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