Individual’s sanitation and hygiene: Awareness, perception and practice of behavioural theory-based research

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Abstract
The purpose of the study was to investigate the awareness, perception and practice related to sanitation and hygiene in Debre Tabor town. The study is based on the descriptive research design and the simple random sampling technique was applied to select 200 participants. Questionnaires were used to collect data and mean score; one sample t-test was employed to analyse the data. The findings indicated that the participants had poor awareness, perception and practice. Age was negatively and significantly correlated with the study variables, whereas education was positively and significantly correlated with the study variables. Perception was positively and significantly correlated with practice, while awareness was not significantly correlated with perception and practice. The researcher concluded that the communities were highly susceptible to mortality and morbidity. It is recommended that sanitation and hygiene issues in the study area strongly need the government’s due attention to alleviate the situation.

Keywords: Sanitation, hygiene, behaviour, awareness, perception, practices;

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1. Introduction

Sanitation can be defined as safe collection, storage, treatment and disposal/recycling of human and animal excreta. The management of solid and liquid wastes/rubbish or industrial waste products and hazardous wastes is the key secret to environmental sanitation, which has positive impacts on the society’s health and well-being. On the other hand, hygiene can be defined as accurate water storage, safe personal cleanliness practices and safe treatment of foodstuff (Tearfund, 2007). Moreover, the WHO confirms that the provision of a good drinking water supply alone is insufficient to ensure health, but there are many stages in the collection, storage and handling of food, and maintaining appropriate personal cleanliness and safety (Pittet, Allegranzi, Boyce, & World Health Organization World Alliance for Patient Safety First Global Patient Safety Challenge Core Group of Experts, 2009).

The challenges in environmental management are the fundamental concerns of political leadership. If leaders can communicate in words and action that the community has shared interests, then there will be possibilities for shared futures; if it is not, then there will be tendencies for fragmentation and polarisation, particularly within metropolitan areas, which will grow and become reflected in physical and spatial structures. These will, in turn, reinforce differences beyond the power of public policy to change them (Freire & Stren, 2001).

According to Nair, Hanumantappa, Hiremath, Siraj, and Raghunath (2014), participants had better practice of hand washing but moderate awareness and poor perception towards the same, and noted that it is widely accepted that the provision of new wash services will only bring benefits if the people are willing to recognise their own role and responsibilities. The community should also be able to participate in/or at least be aware of the planning, design and management of wash services. Wash technicians and other employees of service providers and local bureaus need to have a good understanding of social, cultural, financial and institutional issues at the local level. Leaders also have the responsibility to ensure that the beneficiaries are aware of their rights and responsibilities, such as how they may influence decision-makers, and ensure the service providers are accountable to their customers.

According to Graf, Meierhofer, Wegelin, and Mosler (2008), as cited in OpenWASH (2016), children have a lower risk of being infected by diarrhoea when they consume high percentages of safe drinking water and live in households with good sanitation and hygiene. Ibid (2008) found that biomedical knowledge of children’s diarrhoea as well as the perceived social norm for treating water was associated with the use of solar water disinfection and good hygiene.

Virtually, the entire population in developed regions use improved facilities, but in developing regions only around half of the population use improved sanitation and hygiene. There are also disparities in progress since 1990. Notable increments in the use of improved sanitation have been made in northern Africa, south-eastern Asia and eastern Asia, whereas there has been no progress in the Commonwealth of Independent States and a decline in Oceania. Among the 2.6 billion people in the world who do not use improved sanitation facilities, by far the greatest number are in southern Asia, but there are also large numbers in eastern Asia and sub-Saharan Africa (WHO, 2011).
According to Kamau (2014), over 95% of neonatal deaths occur in developing countries, with about half of them occurring at home. In Africa, diarrhoeal disease is the single largest cause of death among children under 5 years of age and a major cause of childhood illness. Some of the risk factors for children’s death in sub-Saharan Africa are poor nutrition, early introduction of complementary foods and poor sanitation and hygiene at the household level. Unfortunately, there is a paucity of information on the impact of hand washing practices by birth attendants or caretakers on neonatal mortality prevention.

The project conducted by Duncker (2001) identifies high-risk sanitation and hygiene practices that exist in the community within the physical context and cultural beliefs. Presenting these facts to the community will lead to a discussion of what needs to be done to remedy the situation, moving the emphasis from data collection to implementing the findings. It is very important that community members identify the solutions and follow-up action plans because community members will have to undergo behavioural change to improve their hygiene situation. Community participation is very important in facilitating behavioural change towards a higher level of sanitation and hygiene behaviour.

The study by Mohd and Malik (2017) concluded that the existing knowledge of the respondents regarding sanitation and hygiene was satisfactory, but there was a clear gap between knowledge and actual practices. Hence, implementation of an effective behaviour change in communication strategy is a prerequisite to translate knowledge into actual practice. Similarly, Teh, Hamid, Asmawi, and Nor (2016) concluded the importance of applying the multimodal training programme by addressing providers about the awareness of sanitation and hand hygiene, as well as strategies for emotional and behavioural methods, such as victims engagement in hand sanitation and hygiene behaviour interventions.

According to the WHO (1948), as cited in Hossain and Mazharul (2012), health is defined as a state of complete physical, mental and social well-being and not merely the absence of a disease or infirmity. The WHO (2011) found that there is a high significant association between personal hygiene practices which keeps the body healthy among participants who maintain hygiene practices than who does not maintain hygiene practices. Attention to personal hygiene will help a person look their best, feel their best and can even help in avoiding disease. The awareness and practice of personal hygiene are vital in all people’s everyday activities. Failure to maintain a standard of hygiene can have many implications; not only is there an increased risk of getting an infection or illness but there are also many social and psychological aspects that can be affected.

1.1. Theoretical perspective of Health and Psychology
1.1.1. Social cognitive theory

According to Bandura’s (1981) social cognitive theory, as cited in Abraham, Conner, Jones, and O’Connor (2016), behaviour is determined by three factors, such as goals, outcome expectancies and self-efficacy. Outcome expectancy is the same as behavioural beliefs in the theory of planned behaviour, but there are physical, social or self-evaluative expectation relying on the nature of the consequences. Self-efficacy is the belief of whether the behaviour is under the individual’s control or not. It is always understood as the degree of confidence that individuals are able to show in the face of challenges. Furthermore, Bandura elaborated on the sociocultural factors that facilitate or inhibit new behaviour with the association of the social and environmental system, including health issues.
1.1.2. The theory of reasoned action

The theory of reasoned action, developed by Ajzen and Fishbein (1970) and Fishbein (1967), as cited in Morrison and Bennett (2009), is one of theories of health and psychology, including sanitation and hygiene behaviour of the community. Human’s psychological elements highly affect their health conditions. The theory of reasoned action assumes that individuals take action in a goal-directed manner with the implication of their outcome expectations. As regards the theory, psychological processes integrate attitude and behaviour in the wider social influences and the necessity of intention formation. Morrison and Bennett (2009) further elaborated that behaviour is thought to be determined by intention which gains influence by an individual’s attitude towards objective behavioural belief and their perception of social pressure concerning the behaviour which Ajzen and Fishbein (1970) and Fishbein (1967) termed as subjective norms. The extent to which individuals wish to comply or fall into line with the preferences or norms of others is known as motivation to comply.

1.1.3. Transtheoretical model

The transtheoretical model of behaviour change, developed by Prochaska and DiClemente (1984), as cited in Abraham et al. (2016), found that the pre-contemplation, contemplation, preparation and cues to action are the stages of recycling behaviour change processes.

1.2. Background

Professionals promote the four sanitation and hygiene practices with the greatest demonstrated impact on health: (1) Hand washing with soap at critical times; (2) safe disposal and management of excreta; (3) proper food sanitation and hygiene; and (4) safe household water storage, handling and treatment. It also includes working with a broad range of hygiene products and service providers, including government extension agents and local entrepreneurs, to provide household water treatment, water and food storage technologies, and other products to facilitate optimal hygiene behaviours (Berne, 2015).

In Ethiopia, although urban sanitation and hygiene figures generally far outstrip rural access, it is widely known that the poor, unplanned, densely populated areas are badly underserved. This density, therefore, poses a greater risk of contamination than thinly populated rural areas. Limited sanitation and hygiene options and high demand are compounded by poverty and limited space, creating a major challenge. Mobile urinals and communal latrines meet only a fraction of the unmet excreta disposal needs of the urban area who resort to high-risk disposal practices (FDMOH, 2005).

The sanitation and hygiene coverage is far from the Millennium Development Goal target and the majority of population, mainly the urban site which is living in a polluted environment, are exposed to water and sanitation-related diseases. The sanitation and hygiene coverage estimates might be even lower if proper utilisation, regular emptying and faecal sludge management of dry pit latrines were considered indicators (Beyene, Hailu, Faris, & Kloos, 2015). Adane, Mengistie, Kloos, Medhin, and Mulat (2017) concluded that the slum environment is a high risk for diarrhoea due to the close proximity of sanitation and hygiene facilities to homes, sharing of sanitation facilities, poor hygiene of the sanitation facilities and housing compounds. The development of a comprehensive diarrhoeal disease prevention programme that focuses on improving the cleanliness of the sanitation and hygiene facilities and housing compounds was recommended. Increasing the number of
Improved sanitation and hygiene facilities at an appropriate distance from houses is also essential in order to reduce the number of households that share one latrine.

The researcher has observed that all of the above-mentioned sanitation and hygiene strategies still could not bring about the required change, which may be because of sanitation and hygiene behavioural factors related to awareness, perception and practice. People in urban areas, including those in the study area, still seem to have low sanitation and hygiene behaviour which is associated with awareness, perception and practice. Undesirable sanitation and hygiene behaviour (awareness, perception and practices) in urban areas which is highly populated in Ethiopia, including the study area, may be attributed to the consciousness, perceptual and action challenges and it may also be associated with lack of attention to the advantages and disadvantages of sanitation and hygiene issues. Furthermore, there was no study conducted on this area in Ethiopia, including the urban setting. For instance, open defecation and urination at night in urban areas in Ethiopia is very common and is a call for the biggest concern.

1.3. Aim of the study

The main objective of the study was to evaluate the awareness, perception and practices of the sampled households in the study area. Specifically, the study was able to:

1. Identify the awareness, perception and practice level of individual household participants.
2. Investigate how sanitation and hygiene, awareness, perception and practices relate one to another.
3. Examine how related demographic factors affect the sanitation and hygiene, awareness, perception and practices.

2. Methods

2.1. Research design

In this study, the descriptive research design was employed due to the fact that it can provide important information regarding the average member of a group. Specifically, by gathering data on a large group of people, the researcher can describe the average member, or the average performance of a member, of the particular group being studied (Ling, n.d.). The study was conducted in Amhara Region, West Gonder Zone, Debre Tabor Town.

2.2. Participants

Based on the 2007 national census report, the town had 22,455 people living in 4,700 households, out of which 10,564 were men and 11,891 were women.

2.3. Sampling technique

The simple random sampling technique was employed to select the household heads to participate in the study. In doing so, 200 household heads were selected as the study participants from 4,700 household heads in the town.

2.4. Instruments
A questionnaire was used to collect relevant data from the selected participants on their sanitation and hygiene behaviour regarding awareness, perception and practice dimensions.

2.5. Validation of the instrument

2.5.1. Rateability and expert judgment

In order to assure content validity, the data collection instrument was reviewed by professionals to check the reliability of the items. A pilot test was conducted on 50 household heads in the town who were not included as research participants in the actual study. Table 1.

Table 1. Reliability indices of the pilot study (N = 50)

| No. | Subscale   | Cronbach’s alpha | Number of items |
|-----|------------|------------------|-----------------|
| 1   | Awareness  | 0.765            | 15              |
| 2   | Perception | 0.693            | 15              |
| 3   | Practice   | 0.754            | 15              |

2.5.2. Socio-demographic characteristics of the respondents

The major socio-demographic characteristics of the respondents were sex, age and education. These socio-demographic characteristics are very important in identifying priorities for intervention regarding sanitation and hygiene behaviour focusing on awareness, perception and practices. Table 2. Socio-demographic variables of the respondents (N = 200)

| Variables          | Groups                  | Frequency | Percent |
|--------------------|-------------------------|-----------|---------|
| Sex                | Male                    | 85        | 42.5    |
|                    | Female                  | 115       | 57.5    |
| Age in year        | Minimum = 30            |           |         |
|                    | Maximum = 50            |           |         |
|                    | Mean = 40.00            |           |         |
| Education          | Diploma and above       | 95        | 47.5    |
|                    | Primary and above       | 64        | 32.5    |
|                    | Cannot read and write   | 41        | 20.5    |

The data summarised on Table 2 indicate that the mean age of the respondents was 40 years and that about 57.5% of the respondents were male; nearly 50% had formal education, 32.5% had primary education and above and 20.5% cannot read and write.
2.7. Data analysis

Quantitative data were analysed using SPSS 20. Mean scores and one sample t-test were used to determine the respondents’ awareness, perception and practices status, while correlation was used to see the relationship among the socio-demographic variables and the dependent variables.

2.8. Ethical considerations

To conduct the study, some requirements were carried out. Consent was obtained from the study participants and they were informed about the objectives of the study. They were also informed that there was no need of writing their name and their responses would remain confidential, and there was no obligation involved in the study.

3. Results

This section presents the major findings of the three measures of sanitation and hygiene behaviour (awareness, perception and practice). The major findings would be essential to conclude the study and suggest recommendations to experts in the area to take appropriate intervention actions.

3.1. Sanitation and hygiene awareness of the respondents

Attempts were made to measure the sanitation and hygiene behaviour of respondents; firstly, focusing on the awareness dimension, participants were required to respond to the items with ‘well known’ or ‘a little known’ or ‘not known’. Responses were scored in such a way that a high score means high awareness. Correct or keyed responses were given a score of 3, followed by a score of 2 and 1 for incorrect response, positively stated items and reversed for negatively stated items.

Table 3. Responses on awareness items (N = 200)

| No | Awareness items taken from social cognitive theory with some modification | Responses |
|----|--------------------------------------------------------------------------------|-----------|
|    |                                                                               | Not known | A little known | Well known | Mean   |
| 1  | Good hygiene behaviour is a means for good physical health and well-being     | 155       | 30             | 15         | 1.01   |
| 2  | Good hygiene behaviour is a means for good social health and well-being       | 28        | 42             | 166        | 1.03   |
| 3  | Good self-evaluation of hygiene is a means to enhance healthy behaviour       | 9         | 25             | 150        | 1.01   |
| 4  | Setting goals to have good hygiene behaviour leads to good health and well-being | 169       | 20             | 11         | 1.02   |
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Knowing and identifying hygiene facilities are a signal of paying more attention to be healthy

|   | Perception items taken from the theory of reasoned action with some modification | Response |
|---|---|---|---|---|
| 5 | Knowing and identifying hygiene facilities are a signal of paying more attention to be healthy | 165 | 30 | 5 | 1.0 |

Identifying and trying to minimise the impediments of hygiene is a life priority

|   | Perception items taken from the theory of reasoned action with some modification | Response |
|---|---|---|---|---|
| 6 | Identifying and trying to minimise the impediments of hygiene is a life priority | 175 | 19 | 6 | 1.0 |

Grand mean 1.01

The summary of responses presented in Table 3 indicates that the mean ratings were less than 1.00 for almost all the items, and accordingly the total rating was 1.01. This suggests that their awareness level seems to be closer to the rating point for not known responses. Attempts were made next to determine the statistical significance of this value (Table 3).

Table 4. Respondents’ response on awareness items: one sample t-test analysis

| Subscales | Mean | SD | t | df | p (two-tailed) |
|-----------|------|----|---|----|----------------|
| Awareness | 6.06 | 1.27 | −28 | 199 | 0.000* |

*Significant at α = 0.05.

One sample t-test was carried out to see whether the mean score of the sample is significant or not. The summary presented in Table 4 shows that the observed mean is significantly different from the test value 12, i.e., the number of items times the average rating (12 > 6.06) at t (199); p = (0.000 < 0.05). The t-value indicated that respondents had scored on awareness of sanitation and hygiene less than the expected mean. This indicates that the community in the study area had a low level of awareness towards sanitation and hygiene (Table 4).

3.2. Respondents’ response on perception items

Attempts were made to measure the sanitation and hygiene behaviour of respondents focusing on the perception dimension. The study respondents were required to respond to the items with ‘always believe’, ‘sometimes believe’ and ‘do not believe’. Responses were scored in such a way that high score means good perception. In doing so, respondents’ responses was 3 for always believe, 2 for sometimes believe and 1 for do not believe of positively stated items and reserved for negative stated items.

Table 5. Responses on perception items (N = 200)

| No. | Perception items taken from the theory of reasoned action with some modification | Response |
|-----|---|---|---|---|
|     | Do not believe | Sometimes believe | Always believe | Mean |
| 5   |                             |                 |                |     |
| 6   |                             |                 |                |     |
1. Believed about health outcomes of good hygiene behaviour
   - Mean: 20
   - SD: 7
   - df: 173
   - t: 1.1

2. Believed the evaluation of the health outcomes of hygiene behaviour
   - Mean: 168
   - SD: 17
   - df: 15
   - t: 1.0

3. Believed about normative thought about hygiene behaviour
   - Mean: 169
   - SD: 27
   - df: 3
   - t: 1.1

4. Motivation to comply good hygiene behaviour
   - Mean: 185
   - SD: 12
   - df: 3
   - t: 1.0

5. Perceived likelihood of occurrence of health problems due to poor hygiene behaviour
   - Mean: 161
   - SD: 30
   - df: 9
   - t: 1.2

6. Perceived facilitating or inhibiting power of good hygiene behaviour which causes good health or ill health respectively
   - Mean: 169
   - SD: 30
   - df: 11
   - t: 1.1

   Grand mean: 1.08

The summary of responses presented in Table 5 indicates that the mean ratings were less than 1.1 for almost all the items, and accordingly the total rating was 1.08. This suggests that participants’ perception towards sanitation and hygiene seems to be closer to the rating point for do not believe scores.

Table 6. Respondents’ response on perception: One sample t-test analysis (N = 200)

| Subscales                                                | Mean (n) | SD | t  | df | p(two-tailed) |
|----------------------------------------------------------|----------|----|----|----|---------------|
| Perception                                               | 17.0 (2) | 1.6 | -  | 19 | 0.000*        |

*Significant at α = 0.05.

One sample t-test was carried out to see the perception scores to see if the observed mean was significantly different from the test value of 12 > 5.65 at t (199); p = (0.000 < 0.05). The t-values indicate that respondents had scored less on the perception towards sanitation and hygiene (Table 6).

3.3. Respondents’ response on practice

Attempts were made to measure the sanitation and hygiene behaviour of respondents focusing on the practices dimension. The respondents were required to respond to the items with
‘never’, ‘sometimes’ and ‘always’. Responses with a high score mean high results. Positively stated items were rated as 3 for always, 2 for sometimes and 1 for never.

Table 7. Responses on practice items (N = 200)

| No. | Practice items taken from the trantheoretical model                                                                 | Never | Some times | Always | Mean |
|-----|------------------------------------------------------------------------------------------------------------------------|-------|------------|--------|------|
| 1   | Pre-contemplation: Not thinking about hygiene and sanitation behaviour change                                           | 4     | 18         | 178    | 1.01 |
| 2   | Contemplation: Seriously thinking about hygiene behaviour change                                                       | 8     | 11         | 183    | 1.02 |
| 3   | Preparation: Readiness about hygiene behaviour change                                                                   | 186   | 14         | 0      | 1.0  |
| 4   | Action: Performing some new hygiene behaviours                                                                        | 193   | 7          | 0      | 1.03 |
| 5   | Maintenance: Keeping in performing some hygiene behaviours for more than 6 months                                      | 169   | 31         | 0      | 1.1  |
| 6   | Relapse: Stopping practising the new hygiene behaviours after doing good hygiene practices for less than 6 months     | 167   | 24         | 9      | 1.02 |
|     | Grand mean                                                                                                             |       |            |        | 1.03 |

The summary of responses presented in Table 7 indicates that the mean ratings were less than 1.00 for almost all the items, and accordingly the total rating was 1.03. This suggests that the respondents’ responses of sanitation and hygiene practice seem to be closer to the rating point for ‘never’. Attempts were made to determine the statistical significance of this value.

Table 8. Respondents’ response on practice items: One sample t-test analysis (N = 200)

| Variable | Mean  | SD    | t      | df   | p (2 - tailed) |
|----------|-------|-------|--------|------|----------------|
| Practices| 17.71 | 2.35  | −42.3  | 199  | 0.000*         |

*Significant at α = 0.05.

The summary presented in Table 8 shows that the observed mean is significantly different from the test value 30, i.e., the number of items times the average rating (30 > 17.71) at t (199); p =
(0.000 < 0.05). The _t_-value indicated that respondents had scored less on practice of sanitation and hygiene (Table 8).

3.4. **Relationship among study variables**

A comparison was made to see the correlation of demographic variables and the three measures of sanitation and hygiene behaviour (awareness, perception and practice).

Table 9. Inter-correlation matrix among variables

| No. | Variables | Awareness | Perception | Practice |
|-----|-----------|-----------|------------|----------|
| 1   | Sex       | 0.031     | 0.022      | -0.011   |
| 2   | Age       | -0.542\(^b\) | -0.453\(^b\) | -0.612\(^b\) |
| 4   | Education | 0.327\(^b\) | 0.240\(^b\) | 0.412\(^b\) |
| 5   | Awareness | ---       | 0.078      | 0.055    |
| 6   | Perception| --        | --         | 0.101\(^b\) |
| 7   | Practice  | --        | --         | --       |

\(^b\) Correlation is significant at 0.05 (2-tailed). Coded as male = 1 and female = 2.

The data summarised in Table 10 indicate that age was found to be negatively and significantly correlated with awareness, apperception and practices of sanitation and hygiene (_r_ = -0.542, -0.453 and -0.612). The results indicate that the younger the respondents were, the better their awareness, perception and practice towards sanitation and hygiene. However, education was found to be positively and significantly correlated with all the three measures of sanitation and hygiene behaviour (awareness, perception and practices; _r_ = 0.327, 0.240 and 0.412, respectively). Apart from this, the correlation value yielded that only perception was positively and significantly correlated with practice (_r_ = 0.101), while awareness was not significantly correlated with perception and practice, and sex was not significantly correlated with any of the variables (Table 9).

4. **Discussion**

The findings presented in this study are discussed in relation to theory of reasoned action, social cognitive theory and transtheoretical model of behavioural change. It also discussed with general related literature reviews. The study investigated the sanitation and hygiene behaviour regarding awareness, perception and practices in Debre Tabor town administration household heads. The focus of the study was to check the status of the participants on sanitation and hygiene concerning awareness, perception and practice and to determine the relationship among the study variables with socio-demographic factors.

The findings of the study show that study subjects had unpromising sanitation and hygiene behaviour, which means there were statistical significance differences among awareness, perception and practice of sanitation and hygiene behaviour.

4.1. **Participants’ awareness of sanitation and hygiene behaviour**

Almost all respondents did not know that good hygiene and sanitation behaviour is a means for good physical and social health and well-being. Similarly, the majority of participants were not
aware that setting goals and self-evaluation of hygiene and sanitation is a means to enhance healthy behaviour. They were also unable to identify the signals of hygiene and sanitation behaviour as facilitators and impediments. According to Bandura’s social cognitive theory (1981), as cited in Abraham et al. (2016), behaviour is determined by three factors: goals, outcome expectancies and self-efficacy. This indicates that in this study participants did not have healthy life goals and expectations by maintaining good hygiene and sanitation awareness. The respondents also did not know Bandura’s sociocultural factors, which facilitate or inhibit a new behaviour with the association of social and environmental system. Therefore, the participants’ limited knowledge of sociocultural factors of hygiene and sanitation behaviour facilities and inhibitors causes to change undesirable their hygiene and sanitation behaviour. The participants’ undesirable hygiene and sanitation behaviour, in turn, permanently affects their social and physical health and psychological well-being.

The findings of the awareness dimension towards sanitation and hygiene behaviour contrast Nair et al. (2014) and Mohd and Malik’s (2017) findings, which state that participants had moderate awareness towards hand washing and existing awareness of respondents regarding sanitation and hygiene behaviour was satisfactory, respectively. Similarly, the study also contrasted with the findings of OpenWASH (2016), which noticed that it is widely accepted that the provision of new wash services will only bring benefits if the people using the services are willing to recognise their own role and responsibilities, for example, by adopting new methods of waste disposal. The users should also be able to participate in or at least be aware of the planning, design and management of wash services.

According to Graf et al. (2008), as cited in OpenWASH (2016), children have a lower risk of contracting diarrhoea when they consume high percentages of safe drinking water and live in households with good sanitation and hygiene. As regards beliefs, researchers found that biomedical awareness of children’s diarrhoea, as well as the perceived social norm for treating water, was associated with the use of solar water disinfection and good sanitation and hygiene behaviour.

This tells us that good household sanitation and hygiene behaviour prevents children from diarrhoea, and that poor household sanitation and hygiene is the cause of children’s diarrhoea. In this study, the participants had poor awareness towards sanitation and household hygiene; as a result, it is possible to say that the children in the study area have a high probability of getting diarrhoea and other health hazards due to the community’s poor awareness of sanitation and hygiene behaviour.

4.2. Participants’ perception of sanitation and hygiene

Regarding the participants’ perception concerning sanitation and hygiene, this study’s findings are in line with Nair et al.’s (2014) study, where participants had poor attitude towards hand washing disposal. According to Graf et al. (2008), as cited in OpenWASH (2016), children have a lower risk of contracting diarrhoea when they consume high percentages of safe drinks and live in households with good hygiene. As regards beliefs, researchers found that the biomedical knowledge of children’s diarrhoea, as well as the perceived social norm for treating water, was associated with the use of solar water disinfection and good hygiene.
This tells us that the perceived social norm regarding sanitation and hygiene behaviour is one of the influencing factors to the treatment and management of wastes in the environment and to keep our personal hygiene. In this study, participants had poor perception of sanitation and hygiene. Therefore, participants had disorganised treatment and management of waste in their environment and poor personal hygiene practices.

4.3. Participants’ practice of sanitation and hygiene behaviour

The majority of respondents did not think and some of them were thinking about hygiene and sanitation behaviour change. According to the transtheoretical model of behaviour change developed by Prochaska and DiClemente (1984), as cited in Abraham et al. (2016), the finding indicates that the majority of participants were at the pre-contemplation stage of behavioural change and some of the respondents were at the contemplation stage of behavioural change. Although some respondents were thinking about hygiene and sanitation behaviour change, almost all participants were not preparing to take action on their hygiene and sanitation behaviour. Thus, it was not possible to talk about the maintenance and relapse of the new hygiene and sanitation behaviour because the stages of change in maintenance and relapse came after some action was taking.

According to Kamau (2014), over 95% of neonatal deaths occur in developing countries with about half of them occurring at home. In Africa, diarrhoeal disease is the single largest cause of death among children under 5 years of age and a major cause of childhood illness. Some of the risk factors for death from diarrhoea in children in sub-Saharan Africa are poor nutrition and early introduction of complementary foods, followed by poor sanitation and hygiene actions at the household level. Little is known about the relative contributions of different diarrhoea-causing pathogens to diarrhoeal deaths. Unfortunately, there is a paucity of information on the impact of hand washing practices by birth attendants or caretakers on neonatal mortality prevention.

From the above paragraph, we can conclude that poor sanitation and hygiene practices leads to death, especially in children. In this study, since the participants had poor practices of sanitation and hygiene, there would be high probability of child death in the study area which calls big attention for intervention of sanitation and hygiene practices improvement of the community.

5. Conclusion and recommendations

5.1. Conclusion

It can be concluded that the participants had poor sanitation and hygiene behaviour regarding awareness, perception and practices. The communities in the study area have highly suitability to certain diseases which are caused by poor sanitation and hygiene behaviour concerning awareness, perception and practice, especially children are victims of communicable diseases due to poor sanitation and hygiene behaviour. There would be morbidity among individuals in the study area due to poor awareness, perception and practice towards sanitation and hygiene behaviour. There could be child mortality in the study area due to the lack of desirable sanitation and hygiene behaviour, especially older household heads with children, because they are highly and easily affected by communicable diseases caused by poor sanitation and hygiene behaviour.
5.2. Recommendations

Based on the results obtained, the following recommendations are suggested:

➢ The Amhara Regional State Health Bureau needs to design sanitation and hygiene change strategy which helps the community’s awareness, perception and practice enhancement.
➢ The Ethiopian Ministry of Health and the Amhara Regional State Health Bureau need to conduct more efforts on sanitation and hygiene behaviour issues by educating and promoting the community in the study area.
➢ Debre Tabor administrators may need to employ additional health experts and psychologists to change the sanitation and hygiene behaviour of the community.
➢ Debre Tabor Woreda Health Department personnel need to develop the community’s sense of ownership strategies towards good sanitation and hygiene behaviour which would improve the community’s awareness, perception and practices.
➢ Debre Tabor Health Department personnel need to carry out continuous and intensive sanitation and hygiene education and promotion at the village level to improve the people’s awareness, perception and practice.
➢ Further research needs be conducted in line with this area by including more variables and study participants.

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