

Two-way radio: Beliefs and practices of Somali citizens concerning immunisation

Findings from interactive radio programmes on immunisation aired during October 2016. Prepared by Africa's Voices Foundation for the Health section at UNICEF Somalia



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Photo: UNICEF Measles campaign in Mogadishu, UNICEF Somalia/2015/Riccardo

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EXECUTIVE SUMMARY

In October 2016, Africa's Voices deployed a communication for development and social research initiative in Somalia around the topic of immunisation. In partnership with Hargeisa-based MediaINK, radio shows were broadcast on 26 FM radio stations across Somalia, with a combined range estimated to cover 70% of the Somali population. Two interactive radio shows were specifically designed to elicit audience feedback around via toll-free SMS around three questions related to immunisation:

1. What are the differences (in terms of beliefs and demographic characteristics) between parents who bring their child to complete the full schedule of immunisation and those who do not?
2. What are the differences between parents (in terms of beliefs and demographic characteristics) who discriminate by gender in regards to immunisation uptake and those who do not?
3. How are different structures of household decision-making associated with uptake of immunisation?

A total of 6,981 people participated in the shows by SMS. 45.6% of the participants were female. 12,317 messages were received that could be used for in-depth multidisciplinary analysis. Our main findings and recommendations are:

1. **Most parents responded positively to whether children should complete the full schedule of immunisation.** There were, however, also a number of strong beliefs that opposed the idea (such as that it was bad for health, that children were protected for God, children were too young to receive vaccinations during their first year, or that vaccinations were a foreign idea). UNICEF's communication campaigning should be based on a careful study of these narratives to find ways to overcome them.
2. **A number of participants expressed the idea that children do not need a full schedule of immunisation because mother's milk is a natural protection against diseases.** This is a potentially dangerous misconception that could be the outcome of campaigning around breastfeeding and child nutrition. This suggests that UNICEF communications campaigning must be carefully integrated across sectors and narratives and tested for unintended consequences outside of the sector they are targeted towards.
3. **The majority of participants said that boys and girls require similar levels of immunisation.** The dominant reason for discriminating by gender was that girls were considered weaker, more vulnerable against diseases and, as a result, required more protection. Positive messaging campaigns should stress that there are no differences in the susceptibility of boys and girls to vaccine-preventable diseases.
4. **The data suggests that men and women who participated in the radio shows perceive household decision-making processes differently.** More women said that the mother made the decision about immunisation-related

issues in the household whereas more men said that fathers and other relatives were the ones who decided. However, as the results were not based on random sampling, we were not able to verify whether this belief was representative of larger trends in population in Somalia (or the outcome of some unknown confounding reason). Further research is suggested to understand whether similar patterns exist across broader audiences across Somalia.

This report reflects on findings as well as the suitability and efficacy of AVF's methods for researching topics related to immunisation as a:

- culturally-sensitive, flexible, and time-sensitive approach to social research;
- a complementary Communications for Development (C4D); intervention with in-built feedback and evidence gathering capability,
- and a remote monitoring and evaluation tool suitable for the Somali context.

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Acronyms used in this report include:

AVF	Africa's Voices Foundation	NWZ	North West Zone
C4D	Communications for Development	PESS	Population Estimate Survey of Somalia
FM	Frequency Modulation	SCZ	South-Central Zone
IDP	Internally Displaced Person	SMS	Short Message Service
MICS	Multiple Indicator Cluster Survey	UNFPA	United Nations Population Fund
NEZ	North East Zone	UNICEF	The United Nations Children's Fund

1. INTRODUCTION

1.1. Context: Immunisation in Somalia

During the past 20 years, repeated droughts and conflicts in Somalia have contributed to the country having some of the worst health indicators in the world. Women and children are the most affected; one in seven children will die before reaching five years old.

Many of the infectious diseases and epidemics that contribute to child mortality, however, could be prevented by comprehensive vaccination programmes. UNICEF and partners provide both fixed and campaign-type immunisation, including for polio, measles, rubella, diphtheria, and tetanus, to especially vulnerable groups such as children and women¹. In 2016 alone, UNICEF, WHO and in-county partners carried out five polio immunisation campaigns that reached 2.3 million children, as well as vaccinating over 773,000 children against measles².

Since 2012, many positive steps have been taken in terms of the political situation in Somalia and humanitarian access. To date, the country has been polio-free since 2014. Yet challenges endure and overall rates of immunisation coverage remain low in Somalia. Coverage for measles and DPT3 (diphtheria, pertussis (whooping cough), and tetanus) is estimated to be under 50 per cent (2014)³. A contributing factor to child mortality, alongside low immunisation coverage, is people's reluctance to seek treatment⁴.

To maintain progress and reduce vaccine-preventable illness and mortality, more research is needed to better understand Somali people's beliefs -- including the barriers and obstacles -- that facilitate or prevent the successful uptake of immunisation programmes. Such research will provide insights to inform behaviour change interventions, ensuring that they are evidence-based, tailored to socio-cultural realities of target populations, and effective in boosting demand for and uptake of immunisation campaigns.

1.2. Communication for development

Effective behavioural change interventions, such as Communications for Development (C4D) programmes, are more effective when they:

1. stem from theories that address change at individual, interpersonal, and community levels⁵;
2. are adapted to the socio-cultural context⁶ with a clear understanding of the target audience;⁷

¹ 'Somalia: WHO and UNICEF estimates of national immunisation coverage, 2016 revision'. July 4, 2017. http://www.who.int/immunization/monitoring_surveillance/data/som.pdf

² UNICEF Somalia Annual Report, 2016

³ The Situation Analysis of Children in Somalia, 2016

⁴ Ibid.

⁵ Aboud, F.E and Singla, D.R. (2012). "Challenges to changing health behaviours in developing countries: A critical overview." *Social Science and Medicine*. 75: 589-594

⁶ Campbell, C. (2003). 'Letting them die': Why HIV/AIDS programmes fail. Oxford: James Currey.

⁷ Joffe, H. Bettega, N. (2003). Social representations of AIDS among Zambian adolescents. *Journal of Health Psychology*, 8(5): 616-31.

3. involve the community in the planning, implementation, and ownership of interventions.⁸

It is therefore important to have a granular understanding of the target beneficiaries -- their beliefs, opinions, practices, and barriers to adoption around behaviours around health-related issues, and how these vary between different groups in the population -- through in-depth research that garners nuanced insights. However, because of poor infrastructure and political insecurity in Somalia, traditional, on-the-ground qualitative research is difficult to undertake and costly to reproduce at scale in the country.

Africa's Voices Foundation (AVF) has a growing track record of overcoming such obstacles by leveraging the popularity of radio and mobile phones in Somalia. Interactive radio broadcasts disseminate key health-related messages and spark inclusive discussions to gather audiences opinions via SMS. Combined with follow-up SMS questions on health practices and demographic information, these text messages create a large dataset on Somali people's beliefs, opinions, and practices. Using unique multi-disciplinary analysis of this Somali dataset, we are able to provide insights that help meet UNICEF's data and knowledge needs regarding topics such as immunisation.

In 2015, we completed an 8-week pilot project with UNICEF Somalia that recruited interactive radio as a research tool to understand socio-cultural beliefs related to polio and routine immunisations, as well as child and maternal health. [Key insights](#) included that parents' perceived risk of polio is associated with their children receiving the vaccination, and that younger parents are less likely to get their children vaccinated⁹. This report focuses on two radio shows, which were broadcast on the 14th and the 21st of October, 2016, on the topics of immunisation. The present study builds upon the pilot study in 2015, as well as our growing analysis assets from a sustained radio series over 2016 and early 2017.

⁸ Cornish, F., Priego-Hernandez, J., Campbell, C., Mburu, G., McLean, S. (2014). The impact of community mobilisation on HIV prevention in middle and low income countries: A systematic review and critique. *Aids and Behaviour*, 18(11): 2110-34.

⁹ 'Two-way radio: Using radio and mobile phones to engage with Somali women and youth'. Africa's Voices Foundation, March 2016.



2. METHOD

2.1. Research design

AVF worked with the UNICEF Somalia to devise the following research questions:

1. **What are the differences (in terms of beliefs and demographic characteristics) between parents who bring their child to complete the full schedule of immunisation and those who do not?**
2. **What are the differences between parents (in terms of beliefs and demographic characteristics) who discriminate by gender in regards to immunisation uptake and those who do not?**
3. **How are different structures of household decision-making associated with uptake of immunisation?**

These research questions guided the following questions to be broadcast to radio audiences, as part of the radio programmes, and through SMS questionnaires:

Table 1: Wordings of Radio and SMS questions	
 Radio Question (To gather data about beliefs)	 SMS Question (To gather data about practices)
Radio Q1: Do you believe children need to be vaccinated on multiple occasions during the first year of their life? Yes or no? Why?	SMS Q1. Have you taken your children to complete their whole schedule of immunisations? If not, why not
Radio Q2: Do you believe boys and girls should always receive the same level of immunisation? Yes or No? Why?	SMS Q2. Who in your household decides whether to bring children to health facilities for immunisation?

The questions were designed with attention to socio-cognitive theories that consider how questions are processed and, in turn, answered by audiences in a specific cultural context,¹⁰ and to elicit responses through which audience members could express their beliefs. The SMS questions, in turn, were geared towards gathering insight into individual practices.¹¹ Specific wordings were discussed and decided together with the MediaINK team, AVF's media partner based in Hargeisa, Somalia.

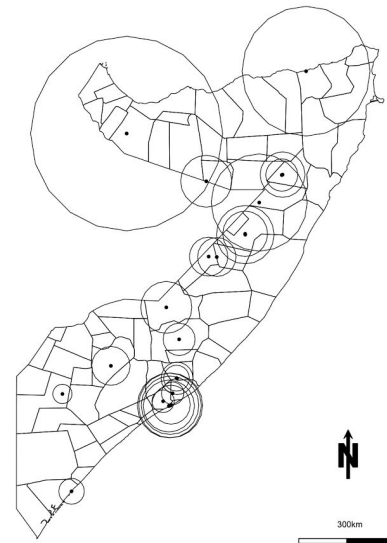
¹⁰ Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology*. San Francisco, CA: Jossey-Bass.

¹¹ Lopes, C. and Srinivasan, S. (2014). *Africa's Voices: Using mobile phones and radio to foster mediated public discussion and gather public opinions in Africa*. Centre of Governance and Human Rights, Working Paper 9. Cambridge: University of Cambridge.

2.2. Data collection: Radio & SMS

In partnership with MedialNK, our Hargeisa-based media partner, AVF deployed interactive radio programmes across a network of 26 FM radio stations covering all three zones of Somalia. Our own estimates put this range to be 49% of Somali territory, and 70% of the population (see circles indicating radio broadcast coverage, fig.1). The use of radio and mobile phone technology in tandem allows for the shaping and gathering of digital data from collective discussions, uninhibited by the barriers of poor infrastructure and insecurity.

Ahead of the radio shows, the radio questions were broadcast in short promos on all of the radio stations. Two 30-minute shows incorporated audience responses to these questions and were broadcast on Friday 14th October and Friday 21st October -- encouraging further participation from audiences. To those who participated, AVF sent follow-up SMS questions using UNICEF's RapidPro platform. These asked for demographic information (e.g., age, gender, and district) and their health practices (see Table 1, above)



2.3. Data analysis

AVF's research allows it to gain insights from conversations held in local languages and on a scale otherwise difficult for qualitative methods. AVF achieves this scope and depth of research through using a mixed method approach combining qualitative and quantitative approaches.

The collective beliefs that emerge from the SMS data allow us to identify ideas shared among demographic groups (geographies, age, gender) as well as differences between them. While this type of data always reflects the social reality of radio discussions and their participants -- and thus cannot be representative of the entire population of radio audiences -- when the group of participants is heterogeneous and inclusive, and the opinions are diversified, it nonetheless allows us to capture particular sets of beliefs that are prevalent in different groups. Contrary to surveys, this approach gathers opinions in cultural context and through a conversational mode, more aligned to the socio-cognitive processes that generate and shape these opinions.

To achieve this, the raw audience data first undergoes pre-processing to remove noise and non-relevant messages as well as to structure the data for analysis. Once the dataset is prepared for analysis, a thematic analysis is undertaken to discover and organise beliefs expressed in the messages, resulting in a coding frame that is applied to the data with manual and automatic techniques. The resulting dataset consists of text messages labelled with one or more themes. This dataset is then analysed for associations with geographical and socio-demographic groups and health practices, complemented with further qualitative interrogation, and illustrated by a selection of translated text messages.

2.4. Limits of the approach

We employed an ex-post facto design to allow AVF to identify health beliefs that were associated with groups based on health practices. Because there was neither manipulation of causes nor random assignment of participants into groups, it was not possible to isolate beliefs as the causes of behaviour. Therefore our theoretical framework assumes that the relationship between beliefs and behaviour is bi-directional.¹²

The coverage error¹³ -- the difference between the target population (Somali population) and the accessible population (listeners of radio shows) -- is also substantial due to the fact that roughly 30% of the Somali population lives in a geographical area not reached by the radio shows. Among those reached, a limited group listened to the show depending on their media habits, availability, and interest in the topic. The participants are thus self-selected and non-representative of the population of listeners of the radio shows. Factors related to access to mobile phones, literacy, gender roles, and dynamics of participation also influence participation.

¹⁴

These methodological limitations restrict the external validity of results (generalisation to the population of Somalia and to the group of radio listeners) based on prevalence of health beliefs and practices in the group of participants. Nonetheless, the insights about collective beliefs and social norms contained in this report can be used for UNICEF programming decisions that involve groups of the population that share the same social, demographic, and geographical characteristics/identities with participants of the radio shows.

Finally, a note on the challenge of parsing and analysing Somali text-based data, which has extended the timeframe for delivery of this report. Somali is a low-resource language (a language for which tools and assets for computational and automated analysis are very limited) and much of the data that this and other AVF reports are based on is rich in detail and contextual nuance. In this report, we have not relied on computational techniques but rather examined, using qualitative analysis, a subset of the messages received to unearth key patterns for further interpretation and research.

¹² Joffe, H. (2002), Social Representations and Health Psychology. *Social Science Information*, 41(4), 559-580.

¹³ Groves, R. M., Fowler, F. J., Couper, M. P., (2009). *Survey Methodology*. New Jersey: John Wiley and Sons.

¹⁴ Srinivasan, S., and Lopes, C. (2016). Africa's Voices Versus Big Data? The Value of Citizen Engagement through Interactive Radio. In Oscar Hemer, Thomas Tufte (eds.), *Voice & Matter: Communication, Development and the Cultural Return* (pp.157-171), Publisher: NORDICOM.

3. RESULTS

3.1. Participants

A total of **6,981 people** participated in the radio shows around immunisation sending a total of **12,317 text messages** that could be used for analysis.

- 45.6% of the participants were female (response rate for gender was 66.4%);
- 4.9% were nomads (response rate for nomads was 62.9%);
- 45.7% came from major urban centres (Mogadishu, Hargeisa, Bossaso and Garowe) (response rate for location information was 65.3%);
- 63.4% of the participants were parents (response rate for parents was 42.9%).

Participants came from all age groups (overall response rate was 56.1%):¹⁸

- 3.7% of participants were 10-14 years
- 37.0% of participants were 15-19 years
- 41.3% were 20-29 years
- 11.5% were 30-39 years
- 6.6% were aged over 40 years.

As Fig 2. shows there is an association between gender and age with the women who responded being generally younger than men.

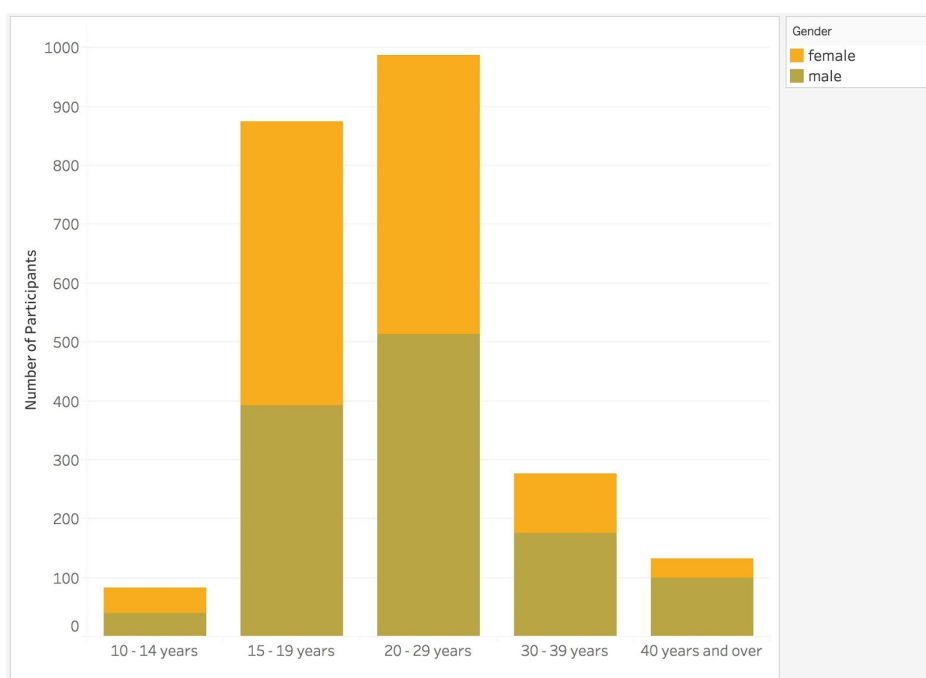


Figure 2. Gender and age of participants to radio shows

3.2. Beliefs and practices

To analyse messages about beliefs sent in response to the radio questions, we carried out a thematic analysis of the responses. Based on this, we developed a coding frame that helped

categorise the relevant beliefs into themes and subtheme. The coding frame was then used to label the most frequent codes across the entire dataset (both Q1 and Q2).

3.2.1. Beliefs related to vaccinating children

Radio Q1. Do you believe children need to be vaccinated on multiple occasions during the first year of their life? Yes or no? Why?

6236 messages were sent in response to radio *Q1*. **2615** (86.4%) responded positively and **411** (13.6%) responded negatively to Q1. Tables 2 and 3 present the coding frame used to categorise answers for this question and a breakdown of the messages (for both reasons supporting and opposing multiple vaccinations).¹⁵

Reasons for multiple vaccinations	Includes
Protection against diseases	Multiple immunisations help protect against diseases
Important during the child's first year (including because they are vulnerable)	Children are especially vulnerable when young

Reasons for multiple vaccinations

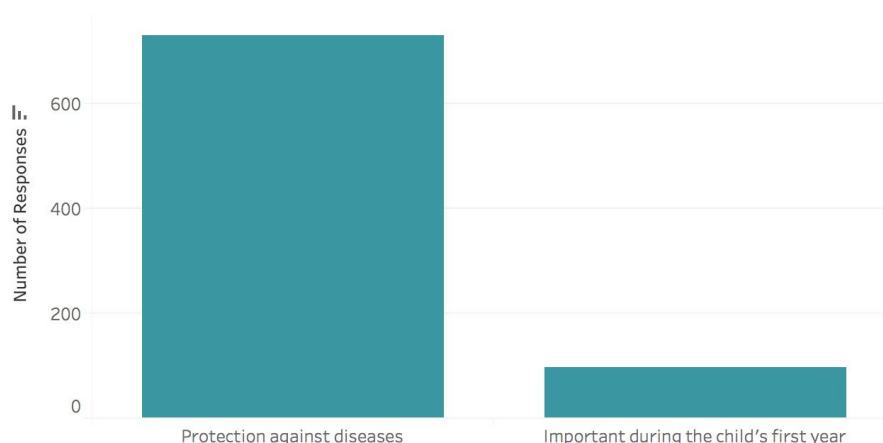


Figure 3. Positive beliefs about giving multiple vaccinations during the first year

¹⁵ All our data undergoes rigorous quality checks, especially in regards to the validity of the machine learning algorithms we use to label beliefs. As we could not get these to perform well enough for all the immunisation-related coding frames, we decided to instead manually label 3,000 randomly sampled messages for analysis. The figures presented here for the breakdown of beliefs are thus *not* from the total count of messages but rather from a random sample of 3000 that were manually labelled.

Table 3: Coding frame for reasons against multiple vaccinations

Reasons against multiple vaccinations	Includes
Multiple vaccinations are bad for health	Too much vaccination is unhealthy May have detrimental impact on health Diseases are actually caused by vaccinations
Mother's milk is adequate protection	Mother's milk is sufficient after first vaccination Mother's milk is enough
Children are protected by god	Only God decides if children get diseases No, because God is the only one that can protect children from diseases No, because anyone that has put their trust in God they are not affected by diseases
Children don't need vaccinations when they are young	Children are too young to receive vaccination in first year Children don't need vaccination in first year
Vaccination is a foreign thing	Vaccination was invented by non-muslims Origin of vaccinations is unknown Government lacks capacity to test vaccinations
Personal experience suggests vaccinations are not needed	My health is good despite lack of vaccinations Many children are healthy without vaccinations

Reasons against multiple vaccinations

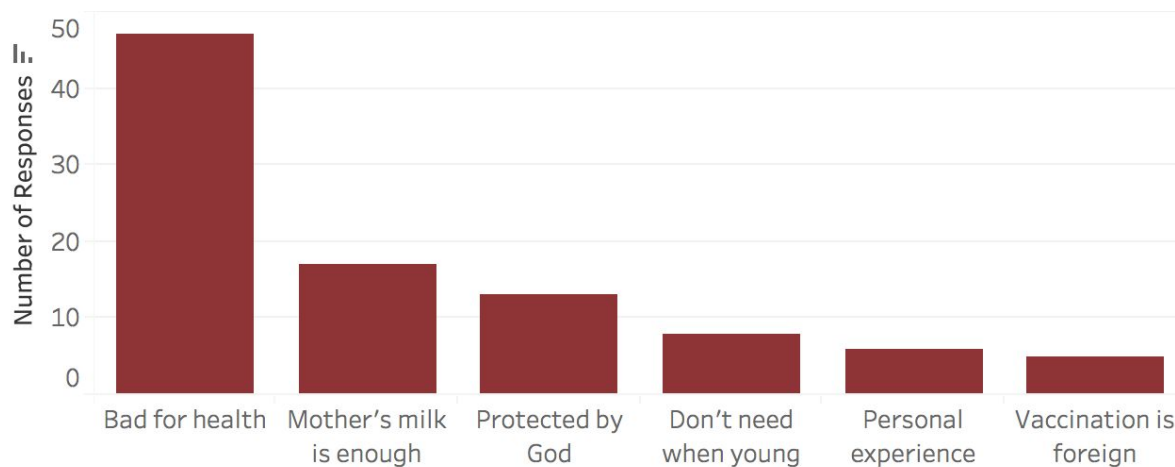


Figure 4. Negative beliefs about giving multiple vaccinations during the first year

We now interrogate these beliefs in more detail. The most prevalent belief supporting immunisation was **protection against diseases** (729 responses). The reasons expressed in support of this belief were, for instance, that multiple vaccinations were needed to provide an

adequate defense mechanisms for children against diseases or that vaccinations are necessary to protect especially young children. This belief also stressed the fact that children are vulnerable and need protection as well as the idea that vaccinations are effective in protecting them.

“Yes they need vaccination because it acts as defense mechanism against many diseases that most children are vulnerable towards” - Mogadishu, Female

“Yes they need vaccination until they reach 9 months because it is a protection for children” - Burco, Female 18

Similar to this, a related belief was that vaccinations are especially **important during the child's first year** (97 responses). Some of the reasons given for this belief included the belief that multiple vaccinations were relevant because it protected against diseases and young children were especially vulnerable, stressing the importance of giving them early to children.

“Yes they should be vaccinated during their first year because they might be affected by some diseases like polio and TB” - Baidoa, Male

“Yes they need multiple vaccinations during their life because it acts as a protection against killer diseases and for that it's important for the children during their first year” - Cadaado, female 19

“Yes it's important they are vaccinated in their first year because they are vulnerable towards diseases and when they are vaccinated it will help a lot in their health” - Hargeisa, Female 18

Conversely, a frequent reason given against multiple vaccinations was that **vaccinations bring disease and cause side effects**. The explanations for this included that vaccinations are bad for children's health and they cause diseases.

“No it might affect their brain function or affect their health” - Dhuusamareeb, Female

“No because most diseases are caused by vaccination” - Mogadishu, Male 28

“No because healthwise it is not good for them” - Ceerigaabo, Male

Another popular belief was the notion that **mother's milk is enough for children**. This included the belief that mother's milk contained all the necessary ingredients children needed to stay healthy so vaccinations were not necessary.

“No they do not need to be vaccinated multiple times because the mother's milk is enough for them” - Gabiley, Female

“No children are vaccinated when they are born and after that they get everything from the mother's milk” - Burco, Female

Another set of beliefs were related to **religion**, and that children are protected by God, God decides who gets diseases, and that the faithful are protected.

“No because every disease comes from God” - Bulo burto, Male

"No because God is the only one that can protect children from diseases" - Wanla weyne, NA

A number of messages also expressed the idea that **children don't need vaccinations when they are infants** (8 responses) but should be vaccinated when they are older.

"No because they have not reached vaccination as it is supposed to be given to them when they reach 2 years and above" - NA, Male

Others responses suggested that their **personal experience** (6 responses) had shown that children do not need to be vaccinated multiple times as children who had not been vaccinated were nonetheless healthy.

"No i do not believe if vaccination has any particular significance towards children because i am 20 years and i have never been vaccinated and I am not lacking anything" - Bosaso, Male 31

"No because there are so many children that have not been vaccinated and nothing has happened to them" - Cadaado, Male

The final belief expressed in the messages was the idea **vaccination is a foreign thing** (5 responses). Because of its foreign nature, it was uncertain where vaccinations originated from or whether they came from non-muslims.

"No it comes from non Muslims" - Hargeisa,21

"No because we do not know where it's coming from" - NA

3.2.2. Beliefs related to boys and girls receiving the same level of immunisation

Radio Q2: Do you believe boys and girls should always receive the same level of immunisation? Yes or No? Why?

In turn, **6081 messages** were sent in response to radio Q2. **2137** (80%) responses were positive to and **549** (20%) responses were negative to Q2. Table 4 and 5 present the coding frame used to categorise beliefs about the same or different levels of immunisation that should be given to boys and girls.¹⁶

Reasons for same level of immunisation	Includes
Same level of risk	Immunisation supports disease-prevention regardless of gender Both genders have the same susceptibility to disease
Gender equality	Everyone has the right to the same health care regardless of gender
Religion	Both genders are servants of God and so they should receive the same support

Reasons for same level of immunisation

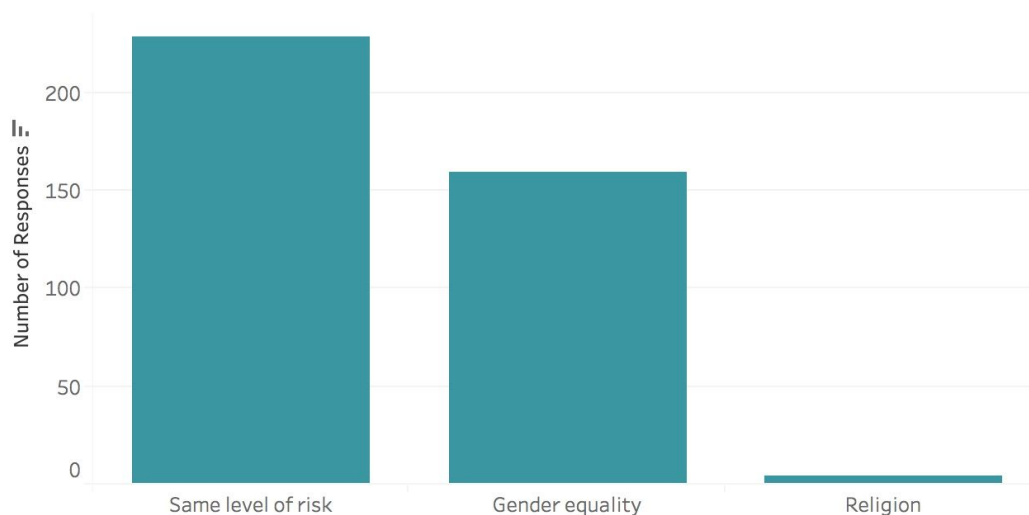


Figure 5. Positive and beliefs about whether boys and girls should receive the same level of vaccination

¹⁶ All our data undergoes rigorous quality checks, especially in regards to the validity of the machine learning algorithms we use to label beliefs. As we could not get these to perform well enough for all the immunisation-related coding frames, we decided to instead manually label 3,000 randomly sampled messages for analysis. The figures presented here for the breakdown of beliefs are thus *not* from the total count of messages but rather from a random sample of 3000 that were manually labelled.

Table 5: Coding frame against same level of immunisations

Reasons against the same level of immunisation	Includes
Girls are weaker/more vulnerable than boys (stressing vulnerability)	Girls are more vulnerable and weaker than boys and therefore require more immunisation Girls are less able and thus require more protection
Bad for health	Immunisation is bad for health Immunisation actually causes diseases
Religious beliefs	Religion does not allow treatment of boys and girls as equal Boys and girls were not created equally
Boys need less vaccines because they are smarter / stronger / healthier	Boys need less because they are smarter than girls
Girls need more vaccines than boys (stressing gender differences)	Girls must go through menstruation, childbirth and pregnancy and therefore require more immunisation
Culture	In Somali culture it's not good to treat boys and girls equally

Reasons for different level of immunisation

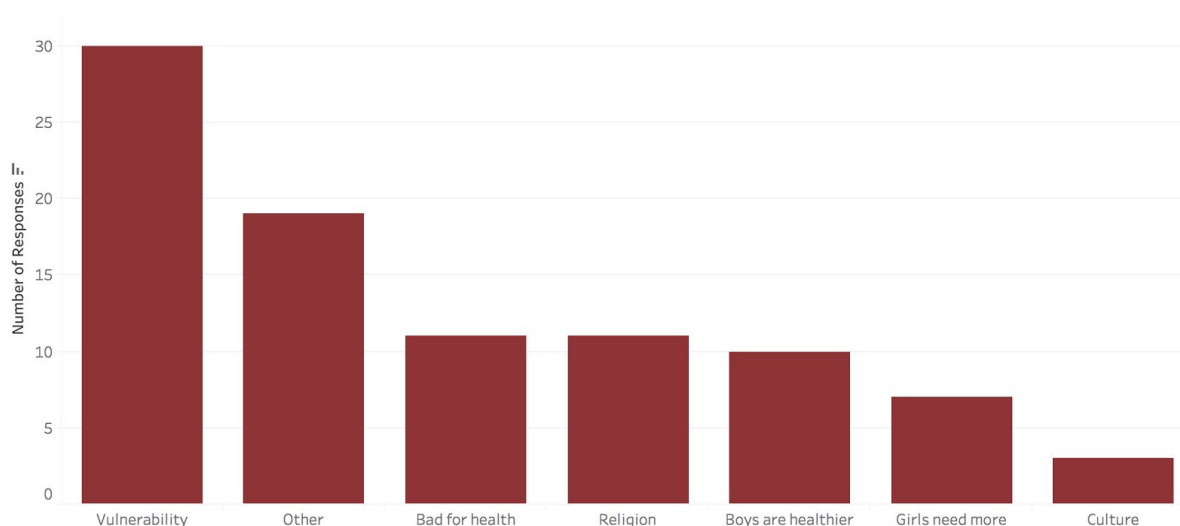


Figure 6. Negative beliefs about whether boys and girls should receive the same level of vaccination

Exploring these beliefs further, the most popular belief supporting the idea that boys and girls need the same level of immunisation was that they both faced the **same level of risk** by diseases (228 responses). This is because both girls and boys are equally vulnerable to diseases.

"Yes both the boy and the girl are human beings and they are both vulnerable towards the same diseases and because of that they can receive the same level of immunisation"

- Jowhar, Female

"Yes because in terms of health they are both equal and they are in need of their health being checked and none of them can do without the immunisation against diseases"

- Mogadishu, Male 25

Another popular belief supporting equal levels of vaccinations argued that **genders are equal** (159 responses). This belief stressed the idea of gender equality as a reason for this.

"Yes because the girls and boys need immunisation because health is needed by everyone and they are the same"

- Mogadishu, Male

"Yes there is no difference between the boys and the girls or anything the boys have more of than the girls and health is needed by both equally"

- Buuhoodle, Male 26

A related belief was the idea that the male and female children are equally **servants of God** and for that reason should receive same level of immunisation (4 responses).

"Yes because both boys and girls are the servants of God"

- Buur hakaba, Female 15

On the other hand, out of the responses that argued for different levels of immunisation between boys and girls, the most popular belief was that **girls are more vulnerable** (37 responses). This belief stressed that women's bodies are weaker than boys and, as a result, some diseases affect women more than men. This also included the beliefs that girls need more immunisation so that they can remain healthy during menstruation, pregnancy and childbirth.

"No because it might be that their defense mechanism towards diseases is different"

- Belet Weyne, Male 19

"No because women's bodies are weak and they are affected by a lot of things and for that they can't be the on the same level of immunisation"

- Mogadishu, Female 20

"No because girls need more immunisation than boys so that she can be healthy during menstruation, pregnancy and childbirth"

- Mogadishu, Female 16

"No in my opinion girls and boys can not take the same immunisation because there are some diseases that women are immunised against that don't affect men"

- Cadaado, Male

Related to the belief that girls are more vulnerable than boys, was also the idea that boys are girls require different levels of immunisation because **boys are smarter and healthier** than girls (10 responses). Because boys thinking and knowledge were not the same they also did not require the same level of protection.

"No boys and girls can not be the same because their thinking is not the same"

- Hargeisa, Female 21

"No because girls and boys do not have the same knowledge as they are not equal and for that they can not take the same level of immunisation"

- NA, 25

Religious reasons were also given for different levels of immunisation (11 responses): god (or sharia) did not make genders equal.

"No they should not receive the same level of immunisation because even God did not make them equal" - Mogadishu

"No the islamic sharia does not allow us to make them equal" - Belet weyne, Male 19

Other responses included the idea that **immunisation itself was poisonous** (8 responses) and that it could have a **detrimental health impact** on both girls and boys (3 responses).

"No, I don't allow the whole immunisation for my children as it is poisonous" - Mogadishu, Female 22

"No, we don't need the immunisation as it is not healthy but a disease"- Saakow, Male 47

"No because if the boy and the girl receive the same level of immunisation it can lead to a lot of things going wrong" - NA, male

Finally, some of the respondents also believed that they can not receive the same level of immunisation for **cultural reasons** that ban against genders being similar. This idea was seen to be against Somali culture and a part of bad (non-muslim) culture.

"No because with somalis it's a shame to give the boy and the girl the same thing" - Cabudwaaq, Male

"No that is a bad culture happening in our community from the non-muslims and it will stop God willing" - NA

3.2.3. Practices related to children receiving multiple vaccinations during their first year

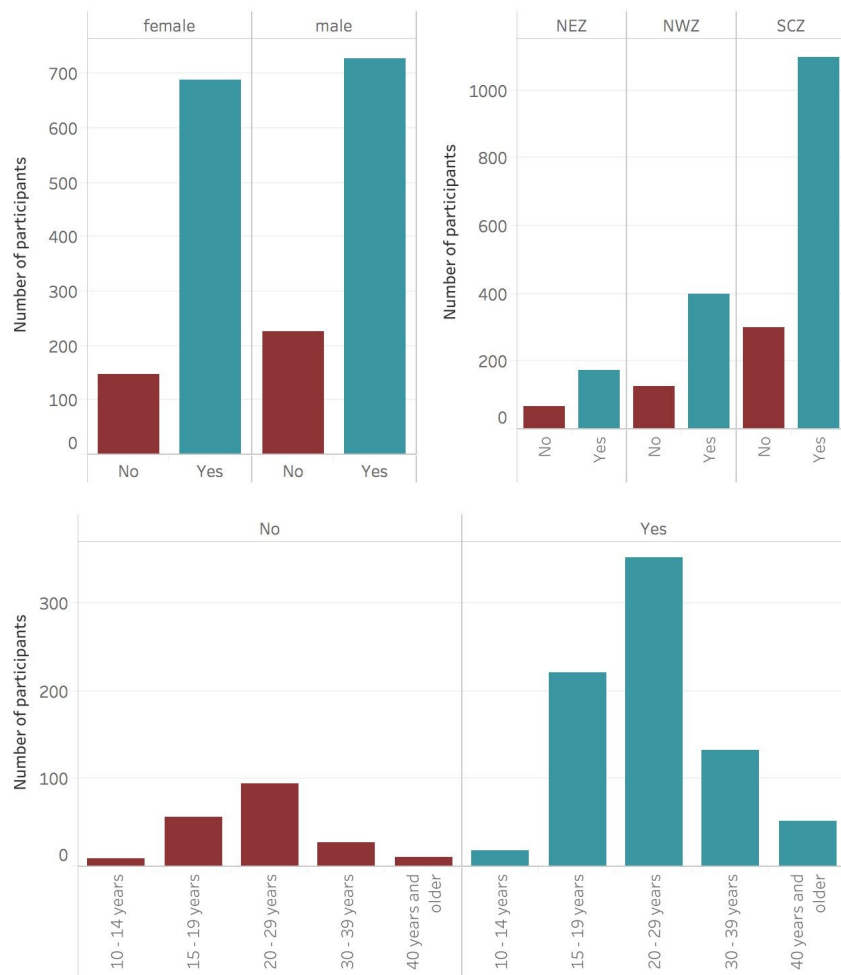
SMS Q2. Have you taken your children to complete their whole schedule of immunisations? If not, why not?

A total of **2224** parents responded to the first SMS question (SMS Q1). Out of these, a total of **1714** (77.1%) parents responded yes to the question and **510** (26.9%) responded negatively. Reasons given for not having the children complete the full schedule were further subdivided the following way:

- 79 parents argued that there was was no perceived need;
- 38 parents said distance to facility affected this decision
- 34 parents mentioned side effects of immunisation as the reason
- 31 parents mentioned lack of services as the reason
- 17 parents mentioned lack of knowledge as the reason
- 16 parents mentioned cost of immunisation;
- 8 parents mentioned lack of experienced staff
- 4 parents gave other reasons

There was also no major demographic variation between the participants who responded positively or negatively to this question. Figure 5. shows the breakdown of the responses according to age, gender and zone.

Figure 5: Demographic breakdown of responses to question 'Have you taken your children to complete their whole schedule of immunisations? If not, why not?'



3.2.4. Practices related to who decides on the immunisation-related practices in the household

SMS Q2. Who in your household decides whether to bring children to health facilities for immunisation?

Out of **1500 participants** that responded to the second SMS question (SMS Q2), the persons identified as the one who decides whether to bring children to the health facilities were given as the following:

- 518 participants said that the mother decided
- 457 participants said the father decides
- 421 participants said that other relatives decide
- 81 participants said parents decide
- 23 participants said that head of household decides

The data suggests that there is a discrepancy in answers to Q2 based on gender and age. Women (40.0%) were more likely to say that the “mother” decides whereas more men said that other relatives (35.9%) decide. The numbers saying that the father decides was around the same for women (29.7%) and for men (28.3%).

However, as the results are not based on random sampling (but rather consists of the self-selective sample of radio listeners) additional research is needed to verify whether this trend is indicative of trends in the population more broadly or the result of another unknown reason.

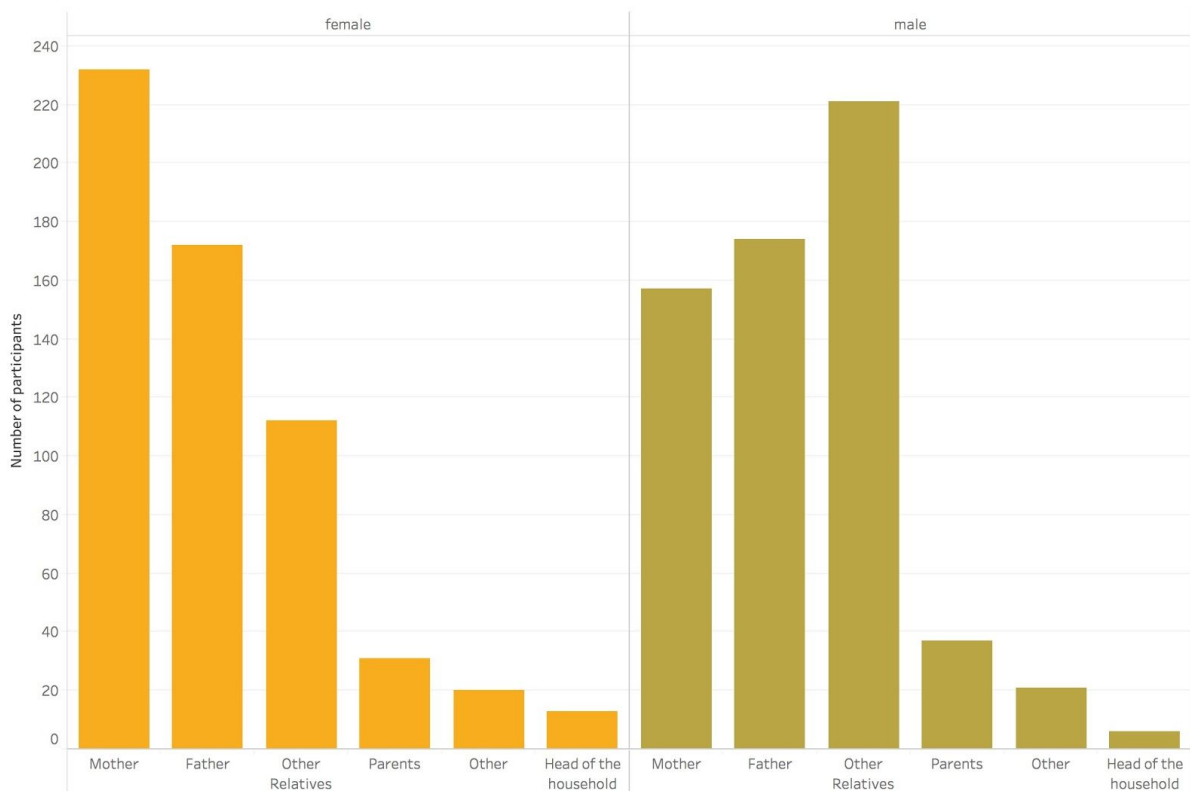
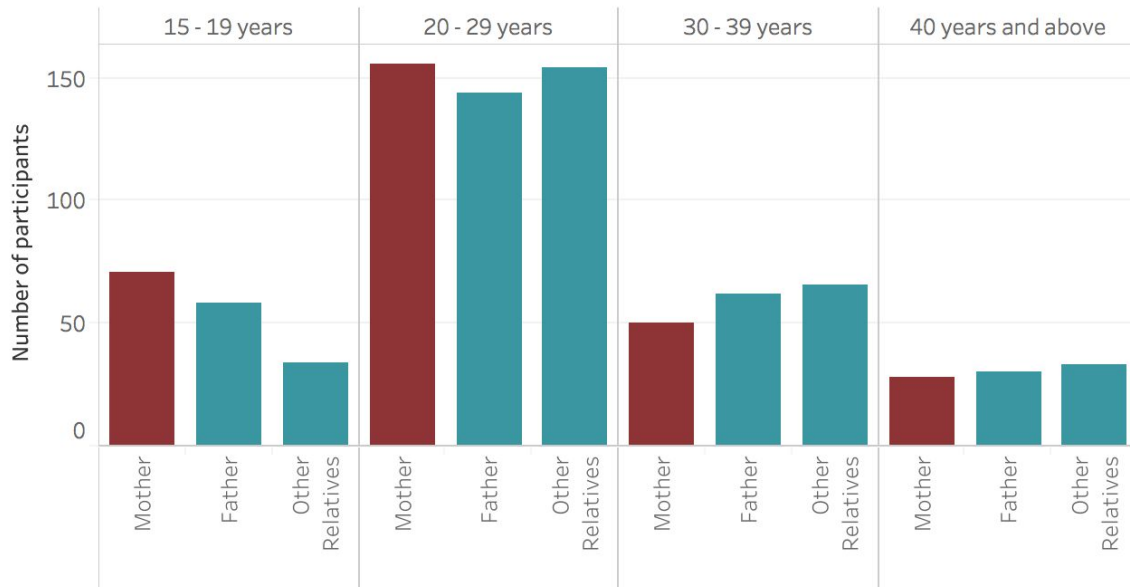


Figure 6: Gender breakdown of responses to question 'Who in your household decides whether to bring children to health facilities for immunisation?'

Responses that said the mother was the person who made the decisions related to immunisation was also related to age and area type: 15-19 and 20-29 year olds were more likely

to say that the mother decides whereas respondents in the 30-39 and 40+ year age brackets were more likely to say the father and other relatives decide. Urban areas were also slightly more likely to say that the mother decides compared to rural areas (however, the numbers for comparison were small). Figure 7 shows the distribution of the answers by area and age.

Who decides (by age group)



Who decides (urban vs. rural)

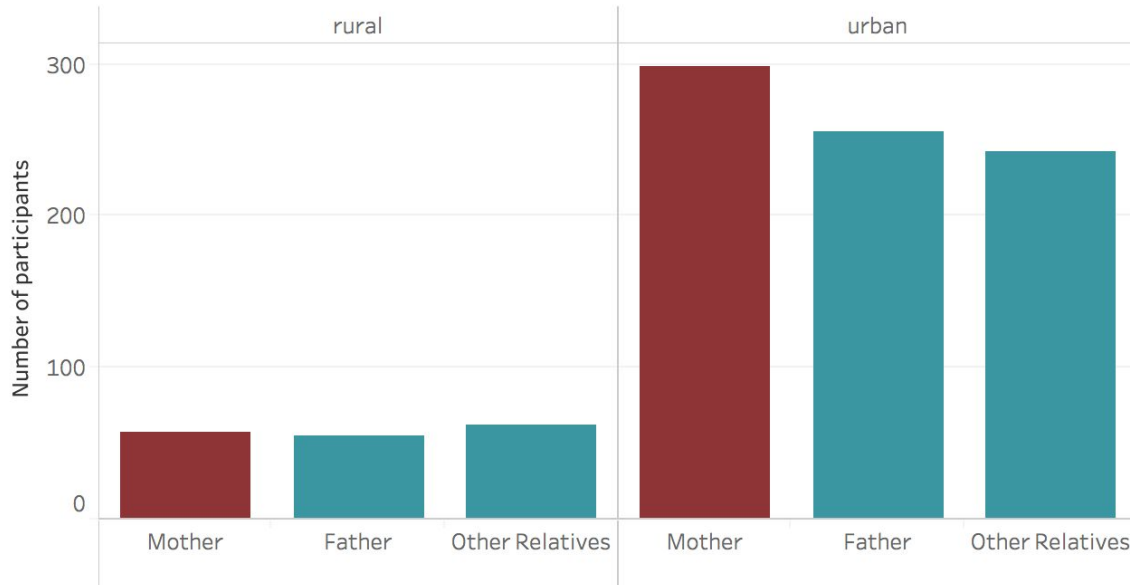


Figure 7: Age and area (urban vs. rural) breakdown of responses to question 'Who in your household decides whether to bring children to health facilities for immunisation?'

4. CONCLUSIONS

4.1. Key findings and recommendations

The final section looks at the key findings in relationship to the three research questions:

1. What are the differences (in terms of beliefs and demographic characteristics) between parents who bring their child to complete the full schedule of immunisation and those who do not?
2. What are the difference between parents (in terms of beliefs and demographic characteristics) who discriminate by gender in regard to immunisation uptake and those who do not?
3. How are different structures of household decision-making associated with uptake of immunisation?

Finding 1: Most parents responded positively to whether parents should complete the full schedule of immunisation (826 responded positively and 104 negatively). There were no major demographic differences among the respondents.

There were, however, a number of beliefs that were put forward to support the notion that children should not receive multiple vaccinations. The most common reason given for not completing the full immunisation schedule was that it is bad for health, but there were also ideas that children were protected by God, too young in their first year to receive vaccinations and that vaccination was a foreign idea.

Recommendation 1: UNICEF's communication campaigning should be based on a careful study of the beliefs that are not supportive of completing a full immunisation schedule in order to develop tailored messages to shift such beliefs towards more positive ones.

Finding 1.1: A number of participants said that their children did not need a full schedule of immunisation because mother's milk was believed to act as a natural protection against diseases. This is a potentially dangerous misconception that has likely emerged from campaigning around breastfeeding and child nutrition that has unintentionally sparked this belief.

Recommendation 1.1: Going forwards, UNICEF communications campaigning must be planned in an integrated way across different sectors. Behaviour change initiatives need to be carefully considered and tested for unintended consequences outside of the sector in which they are planned. More specifically, messaging should be formulated to differentiate the beneficial outcomes of different behaviours, such as breastfeeding and immunisation.

Finding 2: The majority of participants said that boys and girls require similar levels of immunisation (418 responses were positive and 91 were negative).

The most prevalent reason given for different levels of immunisation was the perception that girls are more vulnerable to diseases and, as a result, they require more immunisation to protect them than boys. On the other hand, some said that boys are stronger and thus in need of less immunisation.

Recommendation 2: Future messaging can stress that both genders require the same level of immunisation, appealing to beliefs found in our study that there is no inherent difference in the susceptibility of boys and girls to vaccine-preventable diseases, calls for gender equality, and supportive religious beliefs.

Finding 3: The data suggests that there were minor differences between how men and women perceive household decision-making around immunisation. More women indicated that the mother made the decisions related to immunisation in the household whereas more men indicated that fathers and other relatives decided. This suggests some level of dissonance among the participants about who they think decides on immunisation-related practices.

However, as the results were not based on random sampling we are unable to say whether this is representative of the participants. There was not enough data to make strong inferences between who decides in the household and how these family dynamics potentially inform beliefs about vaccinations.

Recommendation 3: Carrying out additional research is needed to better understand how kinship and family structures inform decision-making processes around important issues such as immunisation in different regions of Somalia. This in turn would help to support the targeting and tailoring of messages.

4.2. Future Directions

This research shows the capacity for AVF's approach to provide insight into issues around immunisation, confirming the ongoing relevance of the partnership with UNICEF that has been ongoing since the pilot in 2015. When deployed in a robust manner, research via interactive radio can track social change over time. Research can be designed in a way that it assesses progress amongst and between socio-demographic groups, changes in their practices, and associations between beliefs and practices. As the group of engaged radio audience members grows over time, these changes can be assessed using follow up SMS surveys, independent of radio shows, providing a channel to interact with hard-to-reach populations across Somalia.

While there are still challenges ahead with big data textual analysis in low-resource languages such as Somali, our methods have shown promise of extending manual coding to larger datasets, thereby offering a means to scale up and speed up analysis in the future. With each interactive radio research project in Somalia, Africa's Voices Foundation is able to build its language analysis assets. With time, accuracy grows and the process becomes more efficient. Each project is thus also an investment in the future towards a unique analytical capability of value to the wider development and governance community supporting human development in Somalia.