EdinBurg Peer-Reviewed Journals and Books Publishers
Journal of Medicine, Nursing and Public Health
Vol. 6||Issue 3||pp 10-21||March||2026
Email: info@edinburgjournals.org||ISSN: 3105-3394

Socio-Cultural Factors Influencing Male Involvement in Routine Child Immunization in An Urban Dispensary in a Limited-Resource City Setting

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Accepted: 16 March 2026 || Published: 24 March 2026

Abstract

Routine child immunization is one of the most cost-effective public health strategies for preventing common childhood illnesses, with higher percentages in developing countries. This study assessed the level of male involvement and socio-cultural factors influencing males' involvement in routine child immunization at Silanga dispensary in Kibra, Nairobi County. This study adopted a descriptive research design. A structured interviewer-administered questionnaire was used to collect quantitative data from 36 male caregivers seeking routine child immunization services at Silanga dispensary. Completed questionnaires were analyzed using Statistical Package for Social Sciences software version 24, then described and presented using tables and graphs. All ethical procedures were observed. The majority of men (38.9%, n=14) were aged 18-25 years, with 44.4% (n=16) having secondary education as their highest level of education, and more than half (55.5%, n=20) were unemployed. The respondents found to be lowly involved in child immunization were 41.6% (n=15). On assessing socio-cultural practices influencing their involvement, half (50%, n=18) of them reported cultural practices, including child immunization, being solely a woman's affair (72.2%, n=13) and participation of men being a sign of weakness (61.1%, n=11). In addition, more than half (58.3%, n=21) reported misconceptions about male involvement in routine child immunization. However, the majority (80.6%, n=29) reported that no religious teachings or beliefs influenced their involvement in child immunization. Almost three-quarters (72.2%, n=26) of them reported that the decision on child immunization was made by both husband and wife. Male involvement in child immunization was sub-optimal. Socio-cultural practices influenced their involvement, including child immunization being solely a woman's affair and male participation being a sign of weakness. Furthermore, various misconceptions were reported. This calls for increased regular health messages on child immunization among men attending all health services to eliminate these misconceptions.

Keywords: *Male involvement, socio-cultural factors, routine, child immunization*

How to Cite: Makori, D. N., & Kamau, M. W. (2026). Socio-Cultural Factors Influencing Male Involvement in Routine Child Immunization in An Urban Dispensary in a Limited-Resource City Setting. *Journal of Medicine, Nursing and Public Health, 6*(3), 10-21.

1. Introduction

Immunizations are among the most cost-effective and successful public health strategies for preventing common childhood diseases, especially in developing countries [1]. Childhood immunizations have led to significant reductions in morbidity and mortality, and they are estimated to save the lives of more than 3 million children annually [2].

Globally, inadequate completion of routine immunization resulted in 1.5 million deaths due to vaccine-preventable diseases (VPDs) and accounted for about a third of deaths and disabilities among children under five years of age by the year 2015 [2]. Previous studies indicate that individual, community, and health system factors underlie failure to complete immunization schedules in developing settings [3]. In addition, the lack of male involvement in immunization and reproductive health issues has contributed to inadequate routine immunization among children below the age of 5 years [3, 4]. One-fifth of the world's children, which is about 22.4 million infants, are not immunized against VPD, and 70 percent of these children come from 10 countries, Kenya being one of them [5].

In Africa, men are the major decision-makers in their families [1]. Their role has recently become a growing concern with respect to reproductive health issues in terms of decision-making and practice. The influence of men in the areas of childbirth and deciding on when women should visit the clinic for immunization for their children has posed a great concern due to their lack of participation [1]. In sub-Saharan Africa, interventions that generate demand for immunization services have traditionally targeted women, largely neglecting men, mainly because the general belief is that women are typically responsible for child immunization [1]. However, a lack of male involvement has been shown to reduce immunization uptake and increase dropout, as well as to delay and shorten routine child vaccination schedules. In addition, male involvement is particularly emphasized in maternal health care with little attention to child vaccination, one of the world's most cost-effective child survival strategies [6].

In East Africa, since the launch of the Global Vaccine Action Plan for 2011 to 2020, efforts are underway to strengthen routine immunization to meet vaccination coverage targets and to introduce new vaccines [7]. In addition, 20 percent of children do not have access to immunization each year, while 1 out of 7 children die before reaching their 5th birthday from causes that are vaccine-preventable, which has been linked to inadequate male participation in immunization programs [8].

One of the causes of high mortality rates in Kenya is vaccine-preventable diseases. Despite the continued commitment by the government of Kenya to the promotion and provision of immunization services, low male involvement is a key compounding factor preventing full utilization of these services. Previous studies have explored factors associated with the implementation of childhood immunization programs; however, most have not examined male involvement in these programs. It is not clear why male involvement in routine child immunization is low. There are relatively few studies on factors influencing male involvement in childhood immunization programs in the Kenyan context, particularly in Nairobi. There is limited data on socio-cultural practices and beliefs that influence male involvement in child immunization.

At Silanga Dispensary, male involvement is low despite free immunization services offered at the facility, a concern because it affects immunization uptake. Moreover, this leads to missed opportunities, cases of vaccine-preventable diseases, and poor health among children aged below the age of 5 years. This study thus aimed to fill this gap. Involving men in routine child immunization has the potential to improve immunization uptake, thereby reducing missed immunization opportunities and the incidence of vaccine-preventable diseases. The specific objectives of this study, therefore, were to assess male involvement in routine child immunization and to examine socio-cultural factors affecting male involvement, including religious beliefs about male involvement in immunization, who makes the decision about child immunization, and cultural beliefs and misconceptions such as immunization being a woman's affair.

2. Materials and Methods

2.1 Study site and design

A descriptive cross-sectional design was used in this study to assess male involvement in routine child immunization at Silanga dispensary in Kibra, Nairobi County. Silanga dispensary is a government-owned facility that provides various health services, including outpatient care, maternal and child health, family planning, referral services, laboratory services, and HIV counselling and testing. The facility is open for business on weekdays from 8:00 am to 5:00 pm. Kibra is the largest slum in the country and both East and Central Africa.

2.2 Study population and sampling

The target population was all caregivers seeking routine immunization services for their children at Silanga Dispensary. The study population comprised males aged 18 years and older who accompanied their spouses for immunization services. Data collection took an average of 28 days spread across two months: October and November 2019.

A convenience (non-probability) sampling technique was used in this study, in which all male partners who escorted their spouses to their child's immunization were recruited until the desired sample size was achieved. The target population was all men aged 18 years and above who attended routine child immunization at Silanga Dispensary.

2.3 Sample size determination

Sample size was calculated using Fisher's formula [9].

$$N = \frac{Z^2 P(1-P)}{d^2} \quad (1)$$

Where N=required sample size, Z=confidence level at 95% (standard value of 1.96), P=prevalence of male involvement (50%), and d=level of precision at 5%.

$$N = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384$$

The desired sample size was then calculated using the finite population correction for proportion for a population of fewer than 10,000 respondents, which came to 36.

$$nf = \frac{n}{1+n/N} = 36 \quad (2)$$

Where nf = desired sample size, n=calculated sample size (384), and N is the accessible population at the end of the study (40 male participants).

2.4 Data collection tools and methods

Data were collected using structured interviewer-administered questionnaires with both open- and closed-ended questions. The questionnaire had two sections: Section A assessed participants' demographic characteristics, and Section B assessed socio-cultural factors influencing male involvement in routine children's immunization. The study evaluated religious beliefs associated with males' involvement in routine immunization, the decision-making role on routine immunization, cultural practices associated with male involvement in routine immunization, and misconceptions about male involvement in routine child immunization.

To assess the reliability of the study questionnaire, pretesting was conducted using 10% of the desired sample size (n=4) at Langata Health Centre. After pretesting, the tool had a Cronbach's alpha reliability coefficient of 0.84, which was accepted for the study. To ensure validity, the tool was shared and discussed with senior nurses and immunization experts from the Ministry of Health, as well as the study supervisors. The obtained feedback was used to refine the tool to ensure it tested what was intended.

To recruit respondents, the men were approached at the child welfare clinic, where immunization services are provided, and informed of the study's purpose. Those who consented to participate were asked to sign an informed consent form. The questionnaires were then administered to all men who met the inclusion criteria and consented to participate after being informed about the study. The questionnaires were checked for completeness before releasing the respondent.

2.5 Data analysis

Questionnaire contents were systematically organized, checked for completeness, edited for errors, and then coded and analyzed using SPSS version 24. Descriptive statistics, including frequency distributions and proportions, were computed for the following groups: age, highest level of education, employment status, and participants' socio-cultural practices.

A male's level of involvement in routine immunization was based on the frequency of a man accompanying or taking his child for immunization. The level of male involvement was measured against Focused Antenatal Care (FAC), which recommends six clinics: at six weeks, ten weeks, fourteen weeks, six months, nine months, and 18 months. Those who had accompanied their spouses to the clinic for immunization at all clinics were considered highly involved; those who missed accompanying their spouses for one or two clinics were considered averagely involved; and those who missed accompanying their spouses for more than two clinics were considered lowly involved.

2.6 Ethical considerations

Approval to conduct the study was obtained from the University of Nairobi ethics and review committee. Permission to conduct the study was obtained from the nursing officer in charge at Silanga Dispensary and the nursing officer in charge of the Maternal and Child Health (MCH) department. Participation in the study was purely voluntary. The questionnaires were administered to the respondents upon obtaining verbal and written informed consent. Anonymity concerning the respondents was observed. Privacy and confidentiality were maintained throughout the study; the respondents' names and other identifiers were not used

during data collection. The information obtained during the study remained confidential and was used only for the study.

3. Results

3.1 Demographic characteristics of the respondents and level of male involvement in child immunization

A total of 36 men accompanying their wives during the child's clinic visit for immunization participated in the study. The respondents' ages ranged from 18 to 49 years. The mean age of the study participants was 22.8 (SD ± 4), of which 38.9% (n=14) were aged 18–25 years. Regarding the highest level of education, the highest proportion (44.4%, n=16) of respondents had secondary education, while 5.6% (n=2) had no formal education. Regarding employment status, more than half of the respondents (55.5%, n=20) were unemployed, followed by those on formal employment (33.4%, n=12). These results are summarized in Table 1.

The male partner involved in the study was asked how often he had accompanied his spouse to the clinic. Those who accompanied their spouses to the clinic for immunization at all clinics were considered highly involved; those who missed accompanying their spouses for one or two clinics were considered moderately involved, while those who missed accompanying their spouses for more than two clinics were considered lowly involved. After measuring the males' level of involvement, there was low male involvement in routine child immunization at 41.6% (n=15).

Table 1: Demographic characteristics

Demographic characteristic		**Frequency (n=36)**	**Percentage**
Age in years	18-25	14	38.9
	26-35	12	33.4
	Above 36 years	10	27.7
	Total	**36**	**100**
Highest level of education	No formal education	2	5.6
	Primary	14	38.9
	Secondary	16	44.4
	Tertiary	4	11.1
	Total	**36**	**100**
Employment status	Self employed	1	2.8
	Formal employment	12	33.4
	Informal employment	3	8.3
	Unemployed	20	55.5
	Total	**36**	**100**

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Email: info@edinburgjournals.org||ISSN: 3105-3394

3.2 Male's religious beliefs on routine child immunization

When the men were asked about their religious beliefs regarding routine child immunization, the majority (80.6%, n=29) reported that no religious beliefs influenced their involvement in child immunization. Among those who reported having some religious beliefs (19.4%, n=7), more than half (57.1%, n=4) said it was against their religious moral teachings, while 42.9% (n=3) said it was not safe. These results are summarized in Figure 1.

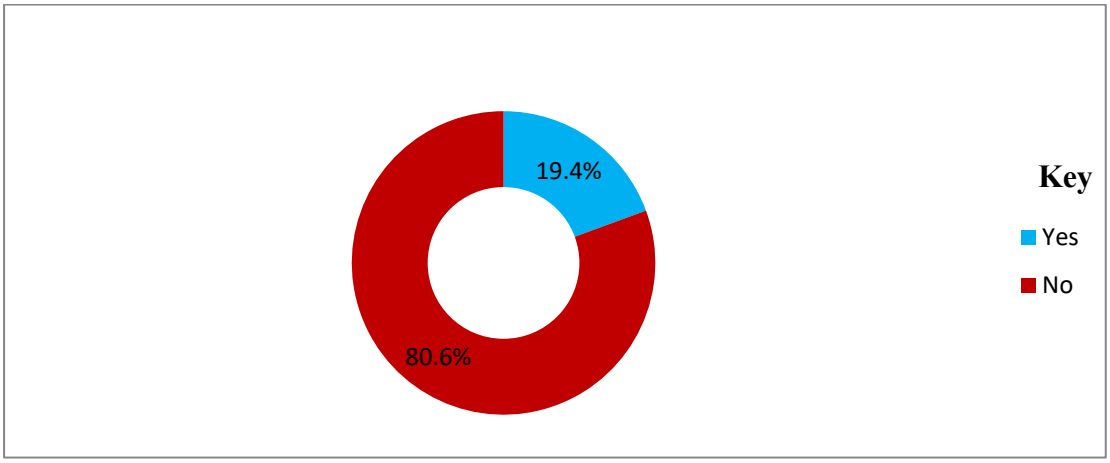

Figure 1: Religious beliefs influence males' involvement in routine child immunization

3.3 Decision maker on routine child immunization

The study sought to determine the predominant decision maker in the family regarding routine child immunization. Whereas the majority (72.2%, n=26) reported that it was both husband and wife, 16.7% (n=6) reported it was the wife, and 11.1% (n=4) reported that it was the husband. These results are summarized in Figure 2.

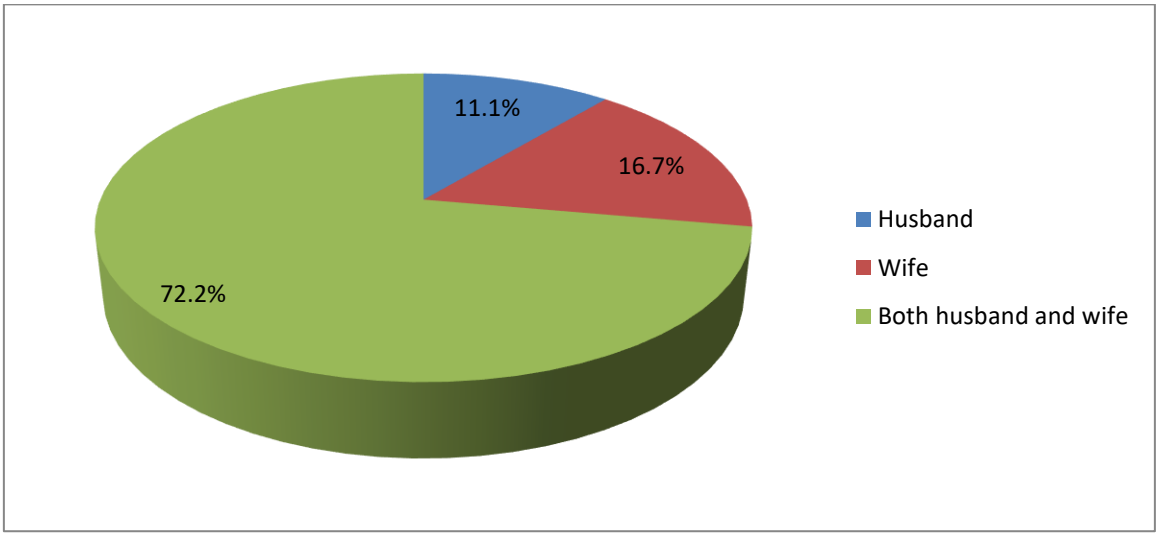

Figure 2: Family's decision maker regarding child immunization

3.4 Cultural practices influencing routine child immunization

The study assessed cultural practices among the men that influenced their involvement in routine child immunization. Half (50%) of the respondents reported being influenced by some cultural practices. The cultural practices reported were: child immunization being solely a woman's affair (72.2%, n=13) and participation of men being a sign of weakness (61.1%, n=11). These results are summarized in Table 2.

Table 2: Cultural practices influencing routine child immunization

Cultural practices influencing routine child immunization	**Frequency (n=36)**	**Percentage**
Having cultural practices Yes No	 18 18	 50 50
Cultural practices (n=18)		
Participation by men is a sign of weakness	11	61.1
Immunization is a woman's affair	13	72.2

3.5 Misconceptions about males' involvement in routine child immunization

This study also sought to assess men's misconceptions about their involvement in routine child immunization. When asked whether they thought men had any misconceptions about routine child immunization, the highest proportion (58.3%, n=21) reported no misconceptions, while almost half (41.7%, n=15) reported misconceptions. Among the reported misconceptions, the highest proportion (33.3%, n=5) indicated that immunization may cause long-term side effects; about a quarter (26.7%, n=4) indicated that immunization is not effective; and 20% (n=3) each indicated that immunization causes infertility and paralysis, respectively. These results are summarized in Table 3.

Table 3: Misconceptions about males' involvement in routine child immunization

Misconceptions towards routine child immunization	**Frequency (n=36)**	**Percentage**
Having misconceptions on routine child immunization: Yes No	 15 21	 41.7 58.3
Misconceptions on routine child immunization (n=15)		
Fear of long-term side effects	5	33.3
Routine child immunization is not effective	4	26.7
Routine child immunization may cause infertility	3	20
Routine child immunization may cause paralysis	3	20

4. Discussion

This study sought to assess the socio-cultural factors influencing it in routine child immunization. Findings from this study show that men's involvement in routine child immunization at Silanga Dispensary was suboptimal, with various socio-cultural practices and misconceptions influencing it.

Regarding the influence of religious beliefs on routine child immunization, the majority of the respondents reported that their religious beliefs and teachings allowed them to take their child for immunization. At the same time, the participants' religious teachings and beliefs did not determine who should be involved in routine child immunization and who should not. This disagrees with a study by Ali and Ushijima in rural Pakistan, where religion instigated different beliefs and norms surrounding child-rearing issues, including immunization. The Islamic religion was associated with vaccination refusal among children, which influenced male participation in routine child immunization among children under the age of 5 years [10]. Health education on the importance of couples' participation in immunization is important to dispel negative religious beliefs that influence men's participation in routine child immunization. In Uganda, Sileos' findings suggested that the mobilization of child immunization was made difficult by the involvement of religious leaders [11]. A study in Korea showed that religious barriers were evident in Africa: about 20% of the population was Catholic, whose doctrine emphasized the importance of certain vaccinations for children, whereas others emphasized the importance of other vaccinations [12]. Reports by Abdel and Amira in Sudan indicated that in sub-Saharan Africa, certain religions, such as the Protestants, were against hospital delivery, child immunization, and family planning, which influenced male involvement in routine child immunization [13]. Therefore, there is a need to explore the religious teachings across various denominations and their influence on male involvement in

routine child immunization, since the current study did not engage men from all denominations, and to then provide targeted health education to counter any negative teachings.

Decision-making within a family influences family members' participation in various chores. Africa is a predominantly patriarchal society where it is believed that men are the ones who make most decisions in the family. However, the current study showed that the decision to take the child for immunization was made jointly by both the husband and the wife. Despite a few participants reporting men as decision-makers in their families, these results differ from those reported in Nigeria, which found that while men did not dominate decision-making, they were still more powerful than women on matters of family and child rearing. The difference might be due to the area of residence: the current study involved men from a metropolitan city, while the study in Nigeria was conducted in rural Nigeria. In another study in Nigeria involving married men and women, participants were asked who decides matters such as immunization and routine clinic visits during the postnatal period; the majority indicated that the decision was made by a man [14]. The current study findings also differed from Greene's study, where men were reported to be the decision-makers about reproductive health and child rearing and contraceptive use [15]. In Ghana, Mbou et al. found that men dominated in reproductive decision-making, including matters related to routine child immunization. Their study recommended that promoting men's knowledge of child immunization through health messages can promote their participation in routine immunization [16]. In Malawi, Hossain found that men made decisions in the family. The role of men in the family is quite contradictory; thus, their decision-making role was detached from reproductive health issues, thereby posing immense challenges for their active involvement in routine child immunization. Women should be encouraged to involve their partners during pregnancy and delivery to promote men's active participation in immunization [17]. The results in the current study may differ due to the study site; Nairobi is a cosmopolitan city, and the men may have interacted with diverse cultural practices and may not be truly attached to their own culture. Urban life might have diluted the cultural practices and beliefs held by those men in the village (rural area).

Cultural practices and beliefs in Africa are known to shape the roles of men and women within families. The current study sought to establish if such beliefs and practices influenced male involvement in routine child immunization at Silanga Dispensary. The study found that, on average, cultural practices influenced routine child immunization, as child immunization was viewed as a woman's affair, and men who accompanied their spouses to the clinic were perceived as controlled by their spouses. This was consistent with Stenberg et al., in which most communities viewed men who participated in routine child immunization as weak in society [18]. According to a study conducted in Nepal by Nasreen, there exists a significant association between male involvement in child immunization and gender roles [19]. Therefore, it is important to engage men in a healthy discussion and educate them on the importance of their involvement in routine child immunization, taking into consideration their cultural beliefs.

Sometimes an individual can be doing some chores based on the information they have at hand. If the information is not factual, it is regarded as a misconception. Therefore, the current study sought to evaluate if there were any misconceptions among the men that influence their involvement in routine child immunization. Regarding misconceptions about routine child immunization, the study found few among the men who participated; men believed that taking

a child for immunization was a woman's affair, and those who took their children for immunization were ruled by their spouses or perceived as weak. This differs from Ankomah et al.'s study in Tanzania, where the majority of participants held myths about long-term side effects of immunization on children [20]. Similar results were documented by Mehta et al. in a study, which indicated that a lack of access to accurate information about male participation in routine child immunization, misperceptions, and fears may lead men to be unwilling to be involved in routine child immunization [21]. A study by Cook et al. reported that due to rumors and misconceptions that routine child immunization was not effective in protecting children against infectious diseases, many men expressed fear about the safety and performance of routine child immunization [22]. According to research done in Nigeria, the majority of men believed that routine child immunization was a family planning method that led to infertility among female children in the future [23]. Similarly, a study by Nzioka showed that some men in Guinea believed that immunization caused paralysis, especially among those who received injections during vaccination [24]. Effective information, education, and communication among men about immunization can dispel doubts and promote their involvement in routine immunization.

Although this study assessed males' socio-cultural practices and beliefs influencing routine child immunization, it had some limitations. The study relied heavily on respondents' verbal reports. This limitation was circumvented by the researcher collecting the data herself to identify any inconsistencies and ensure that the intended data were collected. Further, the study was carried out at Silanga Dispensary in Kibra with a small sample size, which may not provide a clear representation of the true situation of male involvement in routine child immunization across different settings. There is therefore a need for further, more generalizable studies with larger populations that include both rural and urban settings.

5. Conclusion

In conclusion, male involvement in child immunization was suboptimal. Socio-cultural beliefs influenced their involvement, including child immunization being solely a woman's affair and male participation being a sign of weakness. Further, various misconceptions were reported. This calls for increased regular health messages on child immunization among men attending all health services across all health facilities to eliminate these misconceptions and practices. In addition, the health sector managers should involve community health workers who can deliver information at the community level on the importance of male involvement in child immunization and dispel misconceptions on immunization so as to promote involvement of men in routine child immunization to improve immunization coverage, hence reduce vaccine-preventable diseases, and thus improve the health status of children.

Data availability

The data supporting the findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare they have no competing conflicts of interest.

Funding statement

This research was funded by the principal authors only. No grant or funding was provided by any financing body.

Acknowledgement

Our gratitude goes to all study participants at Silanga Dispensary for dedicating their time and for sharing their experiences of male involvement in routine child immunization. We thank the Silanga Dispensary management team, especially the Nursing Officer in charge. We are grateful to our families for their dedicated financial support, which made the study a success. We also acknowledge the data analysts who helped with the statistical analysis.

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