Socio-Demographic and Economic Factors Affecting Vitamin A Supplementation among Children in Yaqshid District Somalia

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Summary

BACKGROUND

Vitamin A supplementation is one of the robust interventions for vitamin A deficiency in developing and middle-income countries. However, despite the rollout of VAS over the last three decades, the uptake of vitamin A supplements in some countries including Somalia is still significantly low. There is therefore a need to understand the deterrent of the VAS program.

MATERIALS AND METHODS

The study employed a cross-sectional study design which aided in understanding the factors influencing VAS. Data were collected by research assistants using a semi-structured questionnaire from 324 caregivers. Data were analyzed using SPSS version 20 at a 95% confidence interval. The data were subjected to descriptive and regression analysis. All ethical considerations were adhered to in the study.

RESULTS

The rate of VAS among children aged 6 to 59 months in Yaqsgid district was significantly low as compared to the WHO recommendation. Socio-demographic factors that were found to significantly influence VAS were the caregiver's marital status, level of education and employment status.

CONCLUSION

The community in Yaqshid district should be sensitized to the importance of educating girls as well as giving women the opportunity to work to improve the VAS rates. Additionally, the Somali government and partners in health should periodic health education for women and amplify the door-to-door supplementation program.

Keywords: *Vitamin A, Children Aged 6 to 59 months, Infants, Supplementation, VAS*

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Introduction

Vitamin A Supplementation (VAS) is very critical in ensuring normal vision, skeletal growth and integrity, proper immune system functioning and integrity of the epithelial tissues (1). Furthermore, VAS reduces the incidences of diarrhoea and measles in children and prevents the occurrence of blindness and loss of hearing among children. In addition, studies have documented that VAS can help improve the chances of child survival by 12 to 24 % (2). VAS remains the most robust intervention aimed at eliminating Vitamin A Deficiency and it's thus a critical public health strategy globally. Thus VAS is recommended in countries where the mortality rates among children under 5 years

exceed 70 deaths per 1000 live births (3). Currently, about 80 countries globally are implementing the universal VAS program targeting children aged 6 to 59 months through national campaigns. It's worth noting that VAS partly aids in eradicating VAD and thus strategies such as fortification, dietary diversity, nutrition education, prevention and control of infectious diseases needs to be implemented to curtail the occurrence of VAD (4). However, despite the benefits associated with VAS the rates of supplementation in 2020 were very low globally with only 41% of targeted children being supplemented. In Africa, the rates of VAS were much lower than the global rates with West and Central Africa recording the lowest rates (29%) of VAS (5).

The low rates of VAS in Africa have been associated with inequalities in access to health services and socioeconomic factors (6). Evidence also suggests that in developing countries VAS is significantly affected by awareness, access and resource limitations. Thus VAS is more prevalent in low and middle-income countries such as Somalia (6). In addition, studies also document that VAS programs are significantly affected by lack of donor support, political instability and natural calamities such as drought which causes frequent migration and thus reaching the targeted vulnerable groups becomes a significant challenge (7).

Studies suggest that to eliminate VAD in African countries needs to implement door-to-door supplementation (8). Other strategies that have been developed to enhance VAS in Africa are the creation of national immunization days and twice-yearly child health days (3). In addition, to ensure the success of the VAS programs adequate doses of vitamin A supplements need to be provided since the evidence shows that lower doses have less effect (9).

In Somalia, the VAS coverage has always been significantly low. For instance, in 2021 0.7 million children aged 6 to 59 months were targeted for vitamin A supplementation however only 0.2 million were reached (10). Due to the low VAS coverage in Somalia, it's estimated that close to a third of all children suffer from VAD (11). Evidence suggests that the survival of children aged 6 to 59 months in Somalia is further curtailed by the consumption of poor vitamin A diets (8). The VAS program in Somalia began in the 1990s and it's highly dependent on donor support. Despite over 3 decades of supplementation vitamin, A supplement uptake among children aged 6 to 59 months in Somalia is significantly low and it's within this backdrop that the present study aimed at investigating the factors influencing VAS in Yaqshid district Somalia.

Materials and Methods

Study site

The study was carried out in Yaqshid district in Mogadishu Somalia. Yaqshid district is one of the seventeen districts that constitute the Banadiir region. Yaqshid district has an estimated population size of 203,111 with about 27420 of the total population being children aged 6 to 59 months. The main economic activity in Yaqshid district is business with the district having the second biggest market in Somalia. The inhabitants of the Yaqshid district are Somalis. The district experiences hot and dry climatic conditions almost the entire year with inadequate rainfall in the range of 64.64 mm – 82.88mm annually and temperatures ranging from 24.9°c – 30.9°c.

Study design

The study employed a descriptive cross-sectional study design which helped in determining factors influencing uptake of vitamin A supplements among children aged 6-59 months.

Experimental procedure

Data were collected by research assistants using a semi-structured questionnaire from 324 caregivers. A multistage sampling technique was used. Firstly, the Yaqshid district was first clustered into 10 administrative regions then simple random sampling was used to identify study participants in each of the administrative regions. Before commencement of the study ethical approval of the study was sought from the University of Eastern Africa Baraton. Furthermore, permission was sought from the administrative leadership of the Yaqshid district and finally, consent was sought from the study participants.

Data analysis and presentation

Data were analyzed using Statistical Package for Social Scientists (SPSS version 20). Descriptive analysis was done to establish rates of vitamin A uptake among children aged 6 to 59 months. Binomial regression analysis was done to determine socio-demographic and socio-economic factors influencing vitamin A uptake. The analysis was done at a 95% confidence interval. Data were presented using tables and charts.

Results

Rates of vitamin A supplementation

Evidence from the MCH clinic card indicated that close to two-thirds (63%) of children aged 6 to 59 months in the Yaqshid district had taken vitamin A supplements.

Factors influencing vitamin A supplementation

The sociodemographic factors that influenced adherence to vitamin A supplementation were marital status, Level of education, and Average monthly income. Married women were 2.7 times more likely to ensure their children received Vitamin A supplementation as scheduled by WHO in the child health clinic booklet (OR=2.767, 95%CI of OR=1.444-5.299, P<0.05). Women with formal education (Primary, secondary and tertiary levels) were 5 times more likely to take their children for vitamin A supplementation as required (OR=5.408, 95%CI of OR=3.127-9.3522, P<0.05).

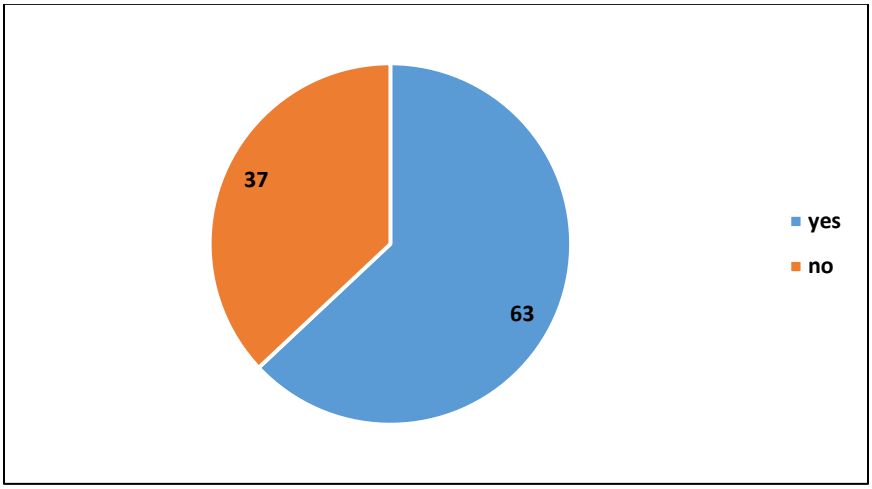

Figure 1:
Levels of Vitamin A supplementation among Children Aged 6 to 59 Months

Women who reported to have any form of employment, (self-employed or formal employment) were 3 times more likely to take their children for vitamin A supplementation (OR=3.284, 95%CI of OR=2.427-4.442, P<0.05). The summary of the results is found in the following table (Table 4.3).

Discussion

Every child has a right of having good health and thus children should not suffer from the consequences of VAD. VAS is one of the most cost-effective interventions aimed at reaching the most vulnerable children globally. UNICEF and WHO recommend that children be supplemented with a high dose of vitamin A bi-annually (12). In the present study, the rate of VAS among children aged 6 to 59 months was 63%. Similarly based on a study conducted in Badhan District the rate of VAS was 65.3% (13). The rate of VAS among children reported in the present study was significantly higher than the global rate and national rate of 20% and 28% reported in 2020 (5). However, the rate of VAS reported in the present study was significantly lower than the 80% threshold recommended by the WHO (3). The low vitamin A supplementation in the Yaqshid district could be attributed to a lack of information among caregivers on the importance of vitamin A as well as insecurity in the district which prevents caregivers from going to hospitals. Furthermore, Yaqshid is among the largest districts with very few medical health facilities providing free medical care thus causing inaccessibility of services such as vitamin A supplementation. The low rates of vitamin A supplementation is a precursor to vitamin A deficiency which has far-reaching negative impacts on the visual system, immune system, growth and development in children (14). According to the 2019 Somali micronutrient survey, the rate of vitamin A deficiency among children in Somalia is over 30% which makes it a significant public health problem (15). There is therefore a need to develop strategies that will enhance vitamin A supplementation among children aged 6 to 59 months in Somalia.

In the present study marital status was reported to significantly influence VAS among children aged 6 to 59 months in the Yaqshid district. Married women were 2.7 times more likely to ensure their children received Vitamin A supplementation as recommended by WHO potentially because of support from their spouses in terms of transport money.

Table 1:
Socio-Economic and Socio-Demographic Factors that Influence Utilization of vitamin A Among Children aged 6-59 Months in Yaqshid District.

Variables in the Equation	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Age of Respondent in Years	-.188	.196	.917	1	.338	.829	.564	1.217
Marital Status	1.018	.332	9.418	1	.002*	2.767	1.444	5.299
Level of Education	1.688	.279	36.473	1	.000*	5.408	3.127	9.352
Average Monthly Income	-.238	.184	1.685	1	.194	.788	.550	1.129
Employment Status	1.189	.154	59.498	1	.000*	3.284	2.427	4.442
Constant	1.148	.791	2.104	1	.147	3.152		

a. Variable(s) entered in step 1: Age of Respondent in Years, Marital Status, Level of Education, Average Monthly Income, Employment Status, Number of Children.

In the Somalia community, men have been reported to be the key decision-makers in the household and they thus influence their partners to adhere to the children's supplementation schedule. On the other hand, unmarried caregivers could be highly stressed due to the pressure of fending for their families and as a result, may not be in a position of ensuring that their children are supplemented with vitamin A. Similarly studies have documented that family structure has an impact on the health outcomes of children. For instance, children living with married biological parents have been shown to have better physical and emotional health (16).

Evidence suggests that lack of information due to low levels of education is significantly associated with poor VAS (6). In Somalia, the levels of education among women are still significantly low due to religious and cultural reasons and thus maternal education remains a major deterrent to VAS and other health-related programs. In the current study caregivers' level of education was reported to significantly influence VAS among children aged 6 to 59 months. Similarly based on a study conducted in India maternal level of education was cited as a key determinant of VAS where caregivers with high school and college education were 2.4 times more likely to subject their children to VAS as compared to illiterate mothers (17). Equally based on a study conducted in Bangladesh caregivers' level of knowledge was reported to significantly influence vitamin A supplementation among children below 5 years (18). Studies suggest that illiteracy among caregivers reduces their motivation to take their children for vitamin A supplementation because they are not aware of the health benefits of supplementation (8). Furthermore, evidence shows that illiterate caregivers may miss participating in supplementation campaigns due lack of understanding of campaign information relating to the venue and time (19). For instance, based on a study conducted in Kenya caregivers failed to participate in *the Malezi bora* program which is a VAS program since they lacked the time and also they didn't hear of the VAS event (20).

The employment status of caregivers was reported to significantly influence VAS among children aged 6 to 59 months in the Yaqshid district. Ideally employment status has a direct correlation with families' monthly income. In families where either of the spouses is employed the health needs of the children have a high possibility of being met. Families, where either of the spouses is employed, can even buy vitamin A supplements for their children in case of unavailability of vitamin A supplements in public health facilities. In Somalia, the unemployment status is considerably high (54%) which implies low monthly income among households (21). Consequently, this implies that a significant number of households may be incapacitated to meet the health needs of their children including VAS. Based on a study conducted in Nigeria maternal occupation was cited as a key factor influencing VAS among children below 5 years (22). Similarly, studies suggest that low rates of vitamin A supplementation among children aged 6 to 59 months is highly associated with the economic status of households (23,24). To cushion households with low economic status the Somalia government and stakeholders in health may need to invest more and amplify the door-to-door vitamin A supplementation program.

Conclusion

The rate of VAS among children in Yaqshid is significantly low as compared to WHO recommendations. Thus the Somalia government and partners in health should sensitize communities to educate girls and provide periodic health education to women.

Furthermore, the community and religious leaders need to educate young families on the importance of marriage and its role in the overall health of children. Finally, the government needs to sensitize communities to allow women to work and contribute to their family's income.

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