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Determinants of Iodised salt utilisation among households with children under-five in Ghana

Gana'da beş yaş altı çocuklu hanelerde iyotlu tuz kullanımının belirleyicileri

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Abstract

Introduction: Given the deleterious effects of iodine deficiency on human health especially children, most nations including Ghana have adopted universal iodisation drives using iodised salt. However, for the success of such drives, it is imperative to know the factors that influence the utilisation of iodised salt in order to inform relevant policies. This study therefore, investigated factors that influence iodised salt utilisation among households with children under-five in Ghana.

Methods: The study sourced data from the 2014 Ghana Demographic and Health Survey whiles the ordered probit model was the empirical estimation technique employed.

Results: It was revealed that, the Ga/Dangme ethnicity, having uneducated mothers and partners, mothers with big monetary challenges in seeking medical care, rising child's birth order and age of the household head, and staying in all the regions of Ghana except the Western region (using the Upper West region as the reference region) decreased the likelihood of iodised salt utilisation, though households in the Upper East region had an insignificant coefficient. Further, urban, wealthy, Christian and Islamic households were found to be more likely to use iodised salt relative to rural, non-rich and traditional/spiritualist/no religion faith households respectively.

Discussion and Conclusion: The study therefore concludes that paying so much attention to socio-economic and cultural factors could be effective tools in ensuring iodised salt utilisation.

Keywords: Demand for child health; Ghana; iodine deficiency disorders; iodised salt utilisation; malnutrition; universal iodisation.

Özet

Amaç: Özellikle çocuklarda iyot eksikliğinin insan sağlığı üzerindeki zararlı etkileri göz önüne alındığında, Gana dahil birçok ülke iyotlu tuz kullanarak evrensel iyotlaştırma hamlelerini benimsemiştir. Ancak, bu türden hamlelerin başarısı için, ilgili politikaları belirlemek amacıyla iyotlu tuzun kullanımını etkileyen faktörleri bilmek zorunludur. Bu çalışma, Gana'da beş yaşından küçük çocuklu hanelerde iyotlu tuz kullanımını etkileyen faktörleri araştırmıştır.

Gereç ve Yöntem: Çalışma verileri 2014 Gana demografik ve sağlık anketi kaynaklıdır aynı zamanda sıralı probit modeli kullanılan ampirik tahmin tekniği oldu.

Bulgular: Ga/Dangme etnik kökeni, annelerin ve partnerlerin eğitimsiz olması, tıbbi bakım aramakta büyük parasal güçlükleri olan anneler, çocuğun artan doğum sırası ve hane reisinin yaşı ve Gana'nın Batı bölgesi (referans bölgesi olarak Yukarı Batı bölgesini kullanarak) hariç Yukarı Doğu bölgesindeki hanehalklarının önemsiz bir katsayıya sahip olmasına rağmen, tüm bölgelerinde yaşama iyotlu tuz kullanımı olasılığını azaltığı ortaya çıkmıştır. Dahası, kentsel, varlıklı, Hıristiyan ve Müslüman hane halklarının, sırasıyla, kırsal, zengin olmayan ve geleneksel/maneviyat/dini inancı olmayan hane halkına göre iyotlu tuz kullanma olasılıkları daha yüksek bulunmuştur.

Sonuç: Bu nedenle çalışma sosyo-ekonomik ve kültürel faktörlere çok fazla dikkat etmenin iyotlu tuz kullanımını sağlamada etkili araçlar olabileceği sonucuna varmıştır.

Anahtar Sözcükler: Çocuk sağlığı talepleri; Gana; iyot eksikliği bozuklukları; iyotlu tuz kullanımı; yetersiz beslenme; evrensel iyotlama.

Iodine is an important part of the triiodothyronine, thyroxine and thyroid hormones and hence making it a necessity for healthy people. Inadequate iodine therefore affects various parts of the body (the liver, muscle, kidney, heart and the developing brain) adversely due to the less sufficient production of the above named hormones. Thus iodine deficiency disorders (IDDs) which include mental retardation, retardation of growth, reproductive failure, high childhood mortality, defects in nervous system development, goitre, physical slowness and economic stagnation, occur due to insufficient

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iodine.[1] It is thus not surprising that iodine deficiency is regarded by the Ghana Statistical Service et al. as the main cause of preventable mental impairment in the world.[2] However, in 2005, the World Health Organization (WHO) technical consultation in Geneva reached a consensus that universal salt iodisation (USI), is the main strategy to oust IDDs.[3]

According to the Ghana Health Service, iodine deficiency is one of the main micronutrient deficiencies significant to public health.[4] Therefore, the Food and Drugs Law Amendment Act (Act 523) 1996 in Ghana, makes it mandatory for all unrefined and refined edible salts to be fortified with potassium iodate and hence the national programme for USI which has iodised salt as the main strategy for preventing iodine deficiency.[2]

However, to adequately ensure the success of the USI programme in Ghana, it is very important that the factors that influence the utilisation of adequately iodised salts by households especially those with children under-five are investigated. Focusing on households with children under-five is very essential given that Malnutrition according to the World Health Organization (WHO)[5] is associated with about 45% of all child deaths. Further, since undernutrition has been estimated by the National Development Planning Commission (NDPC) to be responsible for 23.8% of all child mortalities between 2008 and 2012 in Ghana,[6] finding out the determinants of iodised salt utilization by households with children under-five is simply indispensable. This would inform the strategies and directions that must be followed in Ghana's drive to attain USI which among other benefits, would help reduce the mortality of children in Ghana and hence attain the SDG 3.2. by 2030 which would help in further building the human capital stock of Ghana in future.

On the theoretical literature, the basic idea of Grossman's[7] human capital model on the demand for health tells us that adequately iodised salt would be demanded in order to produce good health which would further positively affect the market and non-market outcomes of individuals and hence economic growth and development. Thus given the derived demand nature of health, individuals are the producers of health and hence iodised salt would enter the health production function as an input.

On the empirical literature, Gidey et al.[8] in Ethiopia revealed that, maternal formal education, short-term storage of salt (below 2 months), maternal good knowledge on iodised salt and IDDs increased the probability of having adequately iodised salt at the household level. In India, Malhotra et al.[9] revealed that, religion, education of spouse of head of family, occupation and education of the family head, per capita monthly income, source of salt and quantum of salt bought at one time were not strongly linked (associated) with the use of adequately iodised salt. Also is being found by Mahfouz et al.[10] that, getting iodised salt in the market or staying in an urban area by household head, having a more educated, a male and comparatively wealthy household head increased the probability of utilising iodised salt among households in Sudan. Further in Pakistan (Punjab and Sindh), people in the Province of Punjab and rural dwellers were found by Khan et al.[11] to be less likely to use iodised salt. Also illiteracy was revealed to be associated with the non-utilisation of iodised salt. Moreover, it has been found by Sen et al.[12] that, rural residents, Muslims and household's having monthly per-capita income of 10 dollars or below had lesser consumption of adequately iodised salt in West Bengal (India).

In Ghana, in the Gushegu District, lack of education on the essence of iodised salt, ignorance of the iodised salt law, high cost and unavailability or absence of iodised salt were found by Chirawurah et al.[13] to be reasons for the low utilisation of iodised salts. Also in the Bia District of Ghana, Buxton and Baguune[14] found higher price to be the reason for the sole usage of non-iodised salt. Also, female household head, education of head of household, being in the richest quintile and having information (television or radio) were found by Ahiadeke et al.[15] to influence adequately iodated salt utilisation in Ghana while Kissi[16] in Danfa of the Ga East Municipality, among other findings revealed that traditional believes and the cost of iodised salt decreased its usage.

However, with regard to all the studies on Ghana, only Ahiadeke et al.[15] used data (2006 Multiple Indicator Cluster Survey (MICS)) that was nationally representative. This study however used data from the most current nationally representative demographic and health survey which is more recent (and hence reflects the current situation better) than the 2006 MICS. In addition, this study included mother's or women employment and education, permission to get access to medical care by women or mothers and ethnicity as proxies for socio-cultural factors as well as child characteristics which were not included in Ahiadeke et al.,[15] which is the most related study to this paper. Therefore given that the United Nations Development Programme et al.[17] contend that socio-cultural factors are some of the challenges in combatting child mortality in Ghana, this paper added mothers or women employment and education, permission to get access to medical care by mothers or women and ethnicity in the econometric model in order to find out how they affect the utilisation of iodised salt (health input). Further, this paper is unique in the sense that it focused only on households with under-five children and also used the ordered probit model and not the probit model used by Ahiadeke et al.[15]

Materials and Method

Data

The main source of data for the study was from the 2014 Ghana Demographic and Health Survey (GDHS) which was a cross-sectional study carried from early-September 2014 to mid-December 2014 by the Ghana Statistical Service, Ghana Health service and other partners. During the survey, various households were visited where several demographic, socio-economic, health statuses and other information were captured.

With regard to iodised salt, various household salts were tested to find out the iodine content. According to the Ghana Statistical Service et al.,[2] adequate amount of iodisation is at least 15 parts per million (ppm) in salt using the test kits. Therefore this study treated no salt, where salts were not tested and not being a dejure resident as missing values with regard to iodised salt test. Hence in this study, iodised salt utilisation was recoded as 0 (no iodine), 1 (iodine content below 15 ppm) and 2 (iodine content being 15 ppm and above). Also variables such as marital status, wealth status, and religion were recoded from their original nature. Therefore based on data availability regarding the variables of interest, we used-extracted- a sample of 4777 households with children under-five for the multivariate analysis.

Empirical Estimation Techniques

The study employed both bivariate and multivariate analyses. The bivariate analyses involved the use of the Pearson chi square test to find out whether there were significant association between iodised salt utilisation and the various categorical explanatory variables.

With regard to the multivariate analysis, since iodised salt utilisation in households with children under-five which was the dependent variable in the study was ranked (0 (no iodine), 1 (iodine content below 15 ppm) and 2 (iodine content being 15 ppm and above)), the study adopted the ordered probit model as the empirical model of estimation. Therefore we specified a simplified model as:

$$Y^* = \upsilon W + \Omega X + ¥Z + \varepsilon\_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Where Y* is the dependent variable (Iodised salt utilisation among households with children under-five) which is ranked as stated above. W is maternal and partner's characteristics such as age, education, employment e.t.c, X is characteristics of children such as sex, age and birth order or rank and Z is other socio-economic, cultural and demographic characteristics such as ethnicity, region, wealth status, residence type, e.t.c., υ, Ω and ¥ are vector of parameters of the explanatory variables and ε_i is the error term. In this study, all the categorical explanatory variables were treated as dummy variables and all analyses of data were done using stata 11. We wish to further state that we gave room for a maximum of 5% margin of error.

Results and Discussion

Bivariate Analyses

The Pearson chi square test was carried out in order to find out whether there existed significant relationships between iodised salt utilisation and the various categorical explanatory variables. The bivariate analyses in Table 1 showed that there were significant relationships between iodised salt utilisation among households with under-five children and all the explanatory variables with the exception of sex of the child and permission to seek medical care by mother. Among the regions, it can be seen that, 56.87%, 24.09%, 48.17%, 8.67%, 18.05%, 45.37%, 33.17%, 12.70%, 20.83% and 22.80% of the households with under-five children in the Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper East and Upper West regions respectively were utilising adequately iodised salt (15 PPM and above). Thus Western region was the region with the highest (56.87%) utilisation of adequately iodised salt among households. Also 42.67% and 18.77% of urban and rural households with under-five children were found to utilise adequately iodised salt. Thus urban households were utilising more of adequately iodised salt than rural Households. With regard to religious background, Christian, Islamic (Muslim), traditional/ spiritualist/no religion households with under-five children were found to have 31.19%, 25.58% and 9.36% usage of adequately iodised salt respectively. Further, under-five households with mothers who were uneducated, with primary, secondary and higher education levels were found to have 15.73%, 22.25%, 37.62%, and 75.83% usage of adequately iodised salt respectively. This shows a strong association between women educational level and iodised salt utilisation. The usage of iodised salt among the remaining variables can easily be seen in Table 1. However, since these bivariate analyses were done for each explanatory variable (independent variable) and hence did not control for other variables that may affect or influence iodised salt utilisation among households with under-five children in Ghana, the paper went a step further to do a multivariate analysis using the ordered probit model whiles controlling for other variables.

Multivariate Analysis

From the results, apart from the Western region, all the remaining regions had negative coefficients implying the less likelihood with regard to using iodised salt among households with under-five children in these regions. Also all the regions had 1% significant coefficients with Ashanti having a 5% significance level, and only Upper East region being insignificant. Thus households with children under-five in the Western region were more probable to have used iodised salt as compared to those in the Upper West region. Also households with children under-five in the Greater Accra, Central, Volta, Ashanti, Brong Ahafo, Eastern and Northern regions were less likely to have used iodised salt relative to households with children under-five in the Upper West region. The findings on Western, Central, Volta, Northern and Eastern regions are in line with that of Ahiadeke et al.[15] whiles those on Ashanti and Brong Ahafo were contrary. The results above are very worrying and hence a greater threat to child survival and universal iodisation drive in Ghana given that apart from households with children under-five in the Western region, almost all the households in the remaining regions were less likely to have used iodised salt. The results on the regions could be that even though most of the regions are relatively richer as

Table 1. Bivariate analyses of iodised salt utilisation among households with under-five children in Ghana

Variable	A	B	C	D	Variable	A	B	C	D
Region				953.6407***	Marital status				30.1594***
Western	20.12	23.02	56.87		Single	43.49	29.20	27.31	
Central	45.80	30.11	24.09		Married	36.21	35.31	28.47	
Greater Accra	31.78	20.05	48.17		Mother's employment				6.7882**
Volta	60.44	30.89	8.67		Unemployed	36.35	36.62	27.03	
Eastern	61.20	20.75	18.05		Employed	39.14	32.51	28.35	
Ashanti	29.22	25.41	45.37		Permission to seek medical care/help by mother				4.5475
Brong Ahafo	39.70	27.14	33.17						
Northern	47.25	40.05	12.70		Big problem	42.66	33.80	23.55	
Upper East	21.59	57.58	20.83		Not a big problem	38.27	33.32	28.41	
Upper West	24.69	52.51	22.80		Money to seek medical care/help by mother				243.7809***
Residence				365.4786***					
Urban	30.55	26.78	42.67		Big problem	46.99	33.68	19.33	
Rural	43.68	37.55	18.77		Not a big problem	30.30	33.03	36.68	
Religion				229.7490***	Distance to seek medical care/help by mother				96.4260***
Christian	39.28	29.52	31.19						
Muslim	27.90	46.52	25.58		Big problem	45.42	34.64	19.93	
Traditional	57.59	33.06	9.36		Not a big problem	35.21	32.72	32.06	
Ethnicity				632.6546***	Partner's education				494.9151***
Akan	34.99	24.24	40.77		Uneducated	43.42	43.55	13.03	
Ga/Dangme	58.92	14.11	26.97		Primary	43.89	39.87	16.24	
Ewe	49.26	31.63	19.11		Secondary	36.82	28.06	35.12	
Guan	51.88	20.30	27.82		Higher	22.72	19.38	57.91	
Mole-Dagbani	27.69	49.59	22.73		Sex of household head				17.4996***
Grusi	27.16	45.26	27.59		Male	38.34	34.65	27.02	
Gurma	59.19	34.33	6.48		Female	39.30	28.89	31.81	
Mande	40.48	35.71	23.81		Sex of child				1.8729
Other	43.27	20.19	36.54		Male	39.41	32.81	27.78	
Mother's education				514.9170***	Female	37.61	33.94	28.45	
Uneducated	42.54	41.73	15.73		Wealth status				714.2959***
Primary	42.05	35.69	22.25		Non-Rich	44.04	37.73	18.23	
Secondary	35.49	26.89	37.62		Rich	23.59	21.40	55.01	
Higher	14.69	9.48	75.83						
Mother's insurance				23.1811***					
Uninsured	42.85	32.81	24.35						
Insured	36.70	33.59	29.71						

A: No Iodine (0 PPM) (%); B: Below 15 PPM (%); C: 15 PPM and above (%); D: Chi-square test. Source: Authors computation from the 2014 GDHS. Notes: 1. **, and *** showing significant difference at 5% and 1% respectively within the predictor and iodised salt utilisation. 2. Traditional in this study means traditional/ spiritualist/no religion.

compared with the Upper West region, there could be very poor people-overshadowed- who cannot afford iodised salt in these regions. This is corroborated by Kissi[16] who found that in Danfa of the Ga East Municipality (Greater Accra region), the cost of iodised salt decreased its usage.

Also the positive 1% significant coefficient of urban implied that urban households with children under-five were more probable to have used iodised salt relative to rural households. This is similar to the findings of Mahfouz et al.,[10] Khan et al.[11] and Sen et al.[12] in Sudan, Pakistan and India respectively. The results on the more likelihood of using iodised salt in urban households with children under-five could be attributed to the existence of more marketing opportunities in urban areas which would ensure more supply of iodised salt. Also access to information on the importance of iodised salt is very easy in urban areas relative to rural areas given the relatively high number of media houses in urban areas. This is because Ahiadeke et al.[15] have revealed the relevance of access to information on iodised salt utilisation. The results further showed that Islamic and Christian households with children under-five were more likely to have used iodised salt relative to tradi-

Table 2. Ordered probit regression on determinants of iodised salt utilisation among households with under-five children in Ghana

Dependent variable	Iodized salt utilization		Dependent variable	Iodized salt utilization	
Independent variable	**Coefficient**	**Standard error**	**Independent variable**	**Coefficient**	**Standard error**
Region (Ref: Upper West)			Mother's Employment		
Western	.2614927***	.0955377	(Ref: Unemployed)		
Central	-.6507721***	.0988282	Employed	-.0441103	.0446088
Greater Accra	-.4095939***	.1077021	Permission to Seek Medical		
Volta	-.8812516***	.1115561	Care by Mother		
Eastern	-.8671067***	.1023268	(Ref: Not a big problem)		
Ashanti	-.2119658**	.0948366	Big Problem	.0045238	.0708274
Brong Ahafo	-.3468706***	.087273	Money to Seek Medical		
Northern	-.3661904***	.0813311	Care by Mother		
Upper East	-.0215494	.0776732	(Ref: Not a big problem)		
Residence (Ref:Rural)			Big Problem	-.2793939***	.0406983
Urban	.1266031***	.046155	Distance to Seek Medical		
Religion (Ref: Traditional)			Care by Mother		
Christian	.1740844***	.0671094	(Ref: Not a big problem)		
Islam	.2899462***	.0770112	Big Problem	.0943203**	.0434841
Ethnicity (Ref: other)			Partner's Education		
Akan	.0809448	.134686	(Ref: Uneducated)		
Ga/Dangme	-.3428002**	.1591753	Primary	-.0188397	.0605053
Ewe	.0045424	.143616	Secondary	.193959***	.0524767
Guan	-.1934992	.1742045	Higher	.2825844***	.083444
Mole-Dagbani	.022476	.1335851	Sex of Household head		
Grusi	.0088954	.1508806	(Ref: Female Head)		
Gurma	-.1620966	.1487616	Male head	-.0396905	.0460954
Mande	-.1495557	.1804554	Sex of Child (Ref: Female)		
Mother's Education			Male Child	-.0528351	.0338363
(Ref: Uneducated)			Wealth (Ref: Non-Rich)		
Primary	.0099424	.052321	Rich	.4428937***	.0582687
Secondary	.0664358	.0534479	Woman's Age	.0174514***	.0042486
Higher	.6873264***	.120331	Age of Household Head	-.0044253***	.001678
Mother's Insurance			Birth Order of Child	-.0486029***	.0133548
(Ref: Uninsured)			Childs Age	-.0127624	.0125677
Insured	-.0124396	.0395516	Cut 1	-.2358429	.1946292
Marital Status of Mother			Cut 2	.7997075	.1948527
(Ref: Single)			Prob> chi2=.0000	n=4777	
Married	-.0324865	.0427462			

Source: Author's computation from the 2014 GDHS. Notes: 1. ***P-value<.01 and **P-value<.05, 2. Traditional in this study means traditional/ spiritualist/no religion.

tional/spiritualist/no religion faith households. The finding on Muslim households conflicts that of Sen et al.[12] The result on traditional/spiritualist/no religion faith households is not surprising given the non-willingness of some families especially those with traditional believes to adopt modern trends. Thus it could be that, they believe that the local salt (non-iodised) was handed over to them by their forefathers and hence adopting iodised salt would be throwing away their traditional values.

Moreover, Ga/Dangme households with children under-five were less probable to have used iodised salt relative to other ethnic groups' households. This could be attributed to the finding of Kissi[16] in Danfa of the Ga East Municipality that, traditional believes and the cost of iodised salt decreased its usage

Also, although all maternal education variables had positive coefficients, only higher education was significant at 1%. Thus having mothers with higher education increased the probability of using iodised salt in households with children under-five. This is similar to the finding of Gidey et al.[8] in Ethiopia. This is not surprising given that information assimilation with

regard to the essence of iodised salt would be higher among educated women relative to their uneducated counterparts.

In addition, the negative 1% significant coefficient of mothers with huge monetary problems in seeking medical care showed that, having mothers with huge monetary problems in seeking medical care reduced the likelihood of using iodised salt among households with children under-five relative to mothers without huge monetary problems in seeking medical care. Thus mothers with huge monetary challenges in seeking medical care would understandably find it difficult to afford iodised salt which is relatively expensive as compared to the non-iodised salt. Also mothers with huge challenges with regard to distance to seek medical care were found to increase the likelihood of using iodised salt in households with children under-five. This could be that because mothers have huge challenges with distance in seeking medical care, they adopt more preventive measures such as the consumption of iodised salt by the household and hence reducing the likelihood of falling sick. Also with regard to the partners of mothers, having partners with higher and secondary education were revealed to increase the likelihood of using iodised salt relative to the uneducated partners. The reasons for these findings are similar to the above given on the education of women.

The 1% positive significant coefficients of mother's age and rich or wealthy households implied that, having wealthy households and aging women increased the probability of using iodised salt in households with children under-five. The finding on wealth status is similar to that of Mahfouz et al.[10] and Ahiadeke et al.[15] This is understandable given that, the price of iodised salt is relatively expensive than the non-iodised salt and hence the more likelihood that wealthy households can afford to buy iodised salt relative to their non-wealthy counterparts. Also having aging mothers could mean they have had enough experience with regard to the difference between iodised salt and non-iodised salt concerning their impact on health and hence increasing their preference for iodised salt utilisation in the household. The results also showed that, as the birth order of the child and age of the household head increased, the probability of using iodised salt in households with children under-five decreased. This is striking since so far as children under-five are among the most vulnerable to diseases, their birth order would not make them immune to diseases. Thus it could be that parents think since previous births survived without household utilisation of iodised salt, subsequent births would also survive. However, the dangerous aspect of IDD is that is no respector of age and hence it could be experienced in the near future. With the household heads, the reason could be the simple unwillingness of some aged in society to adopt certain modern medicines due to some negative perception they have about them and hence leading to the less likelihood of utilising iodised salt in households with children under-five as the household head ages.

The cut1 and cut2 showed the thresholds of y*(unmeasured latent variable) which determined iodised salt utilisation among households with children under-five, and the figure for iodised salt intake for each household, depended on whether a certain threshold has been exceeded or otherwise. Since iodised salt utilisation was ranked as no iodine=0, below 15ppm=1 and 15 ppm and above=2, we have: y = no iodine if $y^* \leq -.2358429$, y = below 15 ppm if $-.2358429 \leq y^* \leq .7997075$ and y = 15 ppm and above if $y^* \geq .7997075$. Thus households with -.2358429 or less will be those without iodised salt utilisation. Households with figures between -.2358429 and .7997075 implied having below 15 ppm iodine content in salt and households with a figure of .7997075 or more implied adequate demand for iodised salt.

Conclusion

Based on the findings, the main determinants of iodised salt utilisation among households with children under-five in Ghana can be concluded to be the birth order of the child, region, religion, type of residence, ethnicity, money and distance to seek care by mother, mother's education, partner's education, age of the household head, wealth status of the household and maternal age.

Therefore establishing effective regional behaviour change communication (BCC) programmes with a decentralised focus on districts and municipalities should be adopted given that households with children under-five from seven regions were less probable to have used iodised salt. The BCC should target especially the traditional/spiritualist/no religion believers, uneducated partner's, younger mothers, uneducated women and older household heads since they were found to decrease the likelihood of using iodised salt in the household. The BCC should further stress on the irrelevance of birth order as well as maintain the usage of local dialect in order to take care of the ethnic dimension. Also, devising measures toward the free distribution or subsidisation of iodised salt for the poor in particular and those in the rural areas should be embarked upon given that non-wealthy households, rural dwellers and women with huge monetary challenges with regard to seeking care were found to be less likely to utilise iodised salt.

Finally, creating educational opportunities for all could be a long-term strategy towards achieving and sustaining universal iodisation in Ghana.

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