The Influence of Socio-Economic Status, Education and Religious Affiliation on the Use of Mobile Phones to Access Reproductive Health Services

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Abstract

Over the past ten years, mobile devices have become commonplace in the delivery of healthcare. Mobile phones in healthcare have the potential to save lives every day and improve health outcomes if they are correctly used and supplied with vital health information. Inadequate awareness of Sexual Reproductive Health (SRH), including menstruation and methods for preventing pregnancy, is common among young people. The alternatives for reproductive health services also appear to be less known. Even though young people must have access to knowledge about their sexuality, socio-demographic barriers have made it difficult for them to do so. This study aimed to evaluate the impact of socio-economic status, education, and religious affiliation on the use of mobile phones to access reproductive health services in Tamale, Ghana. There were 397 respondents interviewed from the selected communities in the Tamale Metropolis with a mean age of 18.2 years. In addition, 50.4% of the participants were female while 49.6% were male, and in terms of education, 34.8% had a junior high school educational level, followed by senior high school level (31.8%), primary school (14.1%), and university (11.9%) educational level while 7.3% did not have any academic achievement. The majority were Muslims (82.8%) while Christians were 17.2%, and most participants lived with their parents. Bivariate analysis suggests that as people age, there may be a rising tendency in mobile phone use. The p-value (0.05) at a 95% confidence level indicates that there is a statistically significant relationship between age and utilizing a mobile phone to access reproductive health services. Additionally, having the highest level of education is statistically linked to using a cell phone to obtain reproductive health (p < 0.05). The multicollinearity test was conducted before the multivariate analysis, and the results showed that age, gender, the highest level of education, and religion were deemed to have the least multicollinearity and were therefore included in the model. The results based on model coefficients demonstrated that mobile usage decreases with age, level of education has no effect on mobile usage, and religion also has a significant impact, as seen by the considerable difference between the use of mobiles to access the SRH and the socio-economic status. It is concluded that health education should be taught in schools. Girls, in particular, should be encouraged by parents and religious institutions to use mobile devices to explore issues and challenges related to reproductive health. We also encourage further research on how cultural barriers affect the use of mHealth.

Keywords: Adolescents, Mobile Phones, Sexual and Reproductive Health, Religious, Tamale

Introduction

Africa has the most youth, and the majority of them with the lowest health profiles (Patton et al., 2012). The large numbers are primarily due to the fact that a larger percentage of young people in sub-Saharan Africa are growing up in an environment marked by widespread poverty, high unemployment rates, rapid urbanization, sometimes limited educational opportunities, and rapid socio-cultural transitions marked by a loss of social control and disruption of the norm (Blum et al., 2012). There is no question that some of these problems may negatively affect the health and wellbeing of young people, as well as their potential future economic contributions to African countries.

In Ghana, young people make up a higher portion of the population and it is estimated that by 2030, there will be a total of 8,955,000 young people living in Ghana (GHS, 2015). Social stigma still remains with regard to young people's reproductive health concerns and health-seeking behaviours (Aninanya et al., 2015). It is challenging for young people to access healthcare because many healthcare professionals who work with them still find it difficult to broach the delicate subject of reproductive health.

Mobile devices have been ubiquitous in healthcare delivery over the past decade. If equipped with essential health information and properly applied, mobile phones in healthcare can save lives daily and improve health outcomes (Mendoza et al., 2013). Using mobile phones to improve health behaviours and services, is a promising way to connect young people to health information and services. It gives people the privacy, convenience, and access they need, and young people find it especially easy and appealing to use. Globally, reproductive health programmes use mobile phones to improve young people's health in rural and urban areas. They do this by using different types of communication to connect young people to information and services on a wide range of sexual and reproductive health (SRH) topics. Mobile phones are an easy, efficient, and cost-effective way to reach and talk to young people about SRH issues (Ippoliti & Engle, 2017).

Young people commonly lack knowledge of SRH, including an inadequate understanding of menstruation and pregnancy prevention techniques (Donkor et al., 2017; Krugu et al., 2016). Likewise, few people seem aware of the alternatives for reproductive health. Even though there is a need for young people to have access to information about their sexuality, there are socio-demographic factors that have prevented young people's access to SRH. The Ghanaian culture considers discussions about sexuality as a sacred topic for young people; thus, teaching about sexuality is generally perceived as introducing young people to early sexual intercourse (Owusu, 2012). Parents hold the position that cultural taboos prevent the education of young people on sexuality. For example, among some ethnic groups in Ghana, it is considered an abomination to talk about sexual issues with a child because the belief is that the child would be 'spoilt'. This further goes to the point where even if the child needed to find out certain things about sexuality, the child was told he or she was not of age to know about such issues (Manu et al., 2015). The socio-cultural factors such as stigma, myths, and misconceptions are reported to have negatively affected the provision of reproductive health services and hindered the delivery and utilisation of sexual reproductive health services for young people (Akazili et al., 2020). Peprah et al. (2019) also found that specific demographics significantly influence decisions to use mHealth, and they found that students' socio-demographic characteristics such as ethnicity, class, and monthly

income predicted mHealth use with significance; however, religion insignificantly predicted the use of mHealth. Additionally, age and education, moderate the relationship between performance expectancy and social influence (Peterson et al., 2020). Thus, this research aimed at the influence of socio-economic status, education, and religious affiliation on the use of mobile phones to access reproductive health services in Tamale, Ghana.

Materials and Methods

The research used a quantitative method design from a target population of young people from selected peri-urban, low-income, middle income and high-income residential areas in Tamale, the regional capital of northern Ghana. With a projected population of 374,744, including 185,051 men and 189,693 women, the city is the fourth largest in Ghana, according to the 2021 Population and Housing Census (GSS, 2021). The bulk of the population in Tamale are Muslims who adhere to the polygamous marriage system and have big families (Otoo et al., 2016). The city has a young population, with around 36.4% of residents under the age of 15 (Fuseini et al., 2019). Tamale has drawn immigrants from northern Ghana's impoverished rural areas and has experienced an average growth of 4% annually over the past 10 years. The average family size is 6.3 persons. Tamale shares boundaries with Savelugu and Nanton to the north, and with Mion to the east. Eastern and central Gonja are to the south of Tamale. The Tolon district to the northwest and Kumbangu district to the west. In 2012, due to the rapid development of the metropolitan area, the Sagnarigu District Assembly (SDA) was carved out from the Tamale metropolitan assembly. Tamale is a trunk city with cross-border movements from adjoining regions of Ghana as well as the West African sub-region. The city faces complex human health and development challenges (Kleinert & Horton, 2016). Adolescent access to reproductive health services has become a great concern. The annual health report of the Tamale Metropolis for between 2012 and 2016, indicated a steady rise in adolescent pregnancy cases, with a rise in figures from 21% in 2012 to 25% in 2016 (GHS, 2016). Further, in 2020 alone, the Northern Region of Ghana, of which Tamale, the study area is the regional capital, recorded 9,249 pregnancies among young girls aged 10-24 (GHS DHIMS, 2021).

Target Population
The study's target population was young individuals aged 10 to 24 from selected peri-urban high, middle, and low-income settlements in Tamale. Young people who have access to a mobile phone met the study's inclusion criteria.

Sampling, sample size, and sampling frame

The sample size of young people aged 10-24 from selected peri-urban high-income, middle-income and low-income settlements in Tamale was 397. This was determined based on Krejcie and Morgan's (1970), sample size calculation and determination. The stratified multistage sampling technique was used to achieve this study's research goals and reach the 397-sample size. There are 17 peri-urban areas in the Tamale Metropolis (Fuseini, 2017). The 17 communities' residential classifications were simply chosen. A sample of six communities was then created in the second stage by randomly choosing two communities from each residential group. After the first three stages had been completed, the final step involved selecting respondents from each of the chosen communities. A predetermined sample size was assigned to provide a representative sample of each community. The house numbers for each of the selected

communities were calculated by a random number generator, using the lottery method. However, if a sampled house did not have a young person aged 10-24 years, it was not considered, and the following generated house number was chosen. In a house with multiple households, that household was randomly sampled.

Data Collection

The study's quantitative data came from structured questionnaires. The purpose of the questionnaire was to gather information from the young people regarding the influence of socio-economic (SES), education, and religious affiliation on the use of mobile phones to access reproductive health services. The research objectives guided the development of the questionnaire, which was used to collect demographic information as well as information on the study's independent variables.

Data Analysis

The research used statistical methods to analyse the data collected and to interpret the results. Descriptive statistical methods were used to describe the sample. Multiple logistic regression was also used to assess the influence of socio-economic (SES), education, and religious affiliation on the use of mobile phones to access reproductive health services.

Results

Socio-demographic characteristics of the study participants

There were 397 respondents interviewed from the selected communities in the Tamale Metropolis. The participant's age ranged from 10 years old at the youngest to 24 years old at the oldest, with a mean age of 18.2 years, while median is 18 and the mode is 23. 49.6% of the participants were males and 50.4% were females. It was found that survey respondents with certain levels of education were proportionally more. 34.8% had completed their junior high school, followed by senior high school (31.8%), and primary school (14.1%). University level was (11.9%) while 7.3% of the participants responded that they had never received any formal education. Regarding religion, the vast majority of participants reported that they were Muslims (82.8%) while 17.2% belonged to Christian faith.A majority, 55.2% of the survey respondents indicated that their sources of income were from their parents. While 20.2% of the respondents indicated that their source of income was from menial jobs, 16.7% reported their income was from their relatives. The least, 7.9%, indicated that their source of income was from formal employment. According to the study, 67.1% of the participants responded that they still lived with their parents. 15.7% stayed with their relatives, while 3.5% of the young people stayed with friends and 8.6% of participants lived by their own (Table 1).

Table 1

Socio-Demographics of the Sample

| Variable	Categories	% or Mean ± SD
Age	Years	18.2 ± 4.0 (Max = 24: Min =10: Median = 18: Mode =23)
Gender	Male	49.6%
	Female	50.4%
Highest level of education	None	7.3%
	Primary School	14.1%
	Junior High School	34.8%
	Senior Secondary School	31.8%
	University	11.9%
Religion	Islam	82.8%
	Christianity	17.2%
Sources of income	Formal employment	7.9%
	Dependent on parents	55.2%
	Dependent on relatives	16.7%
	Menial jobs	20.2%
Who do you stay or live with?	Stays with Parents	67.1%
	Stays with friend	3.5%
	Stays with other relative	15.7%
	Renting	8.6%
	Others	5.1%

Family Socio-Economic Status Of Respondents

The results from Figure 1, on the family socio-economic status of respondents interviewed for the study, showed that 46% of families of respondents from Tishigu were in the category of least poor. This was followed by 19% of respondents being in the poor family category, 13% being in the poorest family category, and 11% being the poorer family and less poor family category. Warizehi had 35% of families of respondents in the least poor category, 27% in the poor category, 14% in the less poor and poorer categories and 10% in the poorest category. A total of 33% of families of respondents from Lamashegu were among the least poor, 21% were among the poorest, 19% were among the less poor, 16% were among the poorer group and 11% were among the poor group. Exactly 30% of families of respondents from Vittin were in the less poor category, this was followed by 28% in the poor category, 21% in the poorer category, 13% in the poorest category and 7% in the least poor category. A total of 34% of the families of respondents from Kalariga were categorised in the poorer category, 24% categorized in the poorest category, 15% in the poor and least poor categories, and 12% in the less poor category. A total of 38% of

the families of respondents were in the poorest category. This was followed by 23% that fell within the poor category, 20% in the poorer category, 11% in the less poor category, and 9% in the least poor category.

Figure 1

Family Socio-Economic Status (SES) across the selected study sites
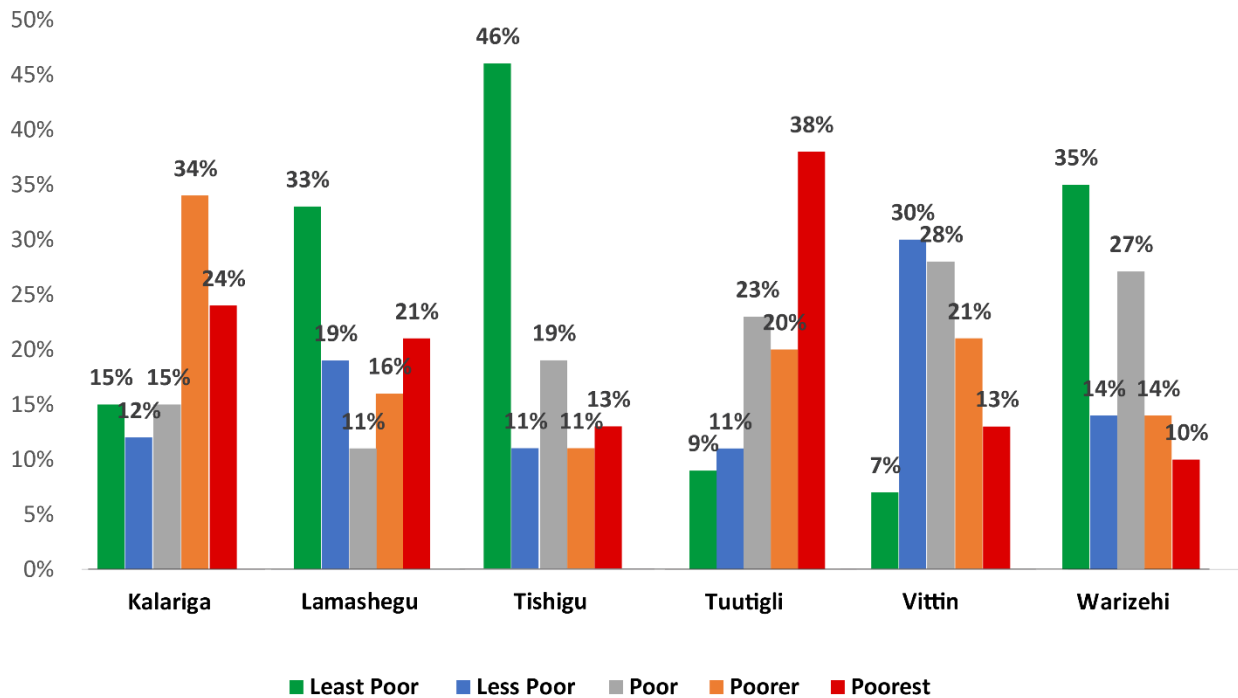
Educational Status of Respondents by Settlement Areas

A total of 34.8% of respondents from Kalariga had junior high education, 27.3% had senior high/secondary education, 18.2% had primary education and 3% had a university education, and 16.7% were not educated. Tuutingli had 28.8%, 27.3%, 21.2%, and 10.6% of the respondents acknowledging that they had senior high/secondary, junior high, university and primary education, respectively.

Figure 2

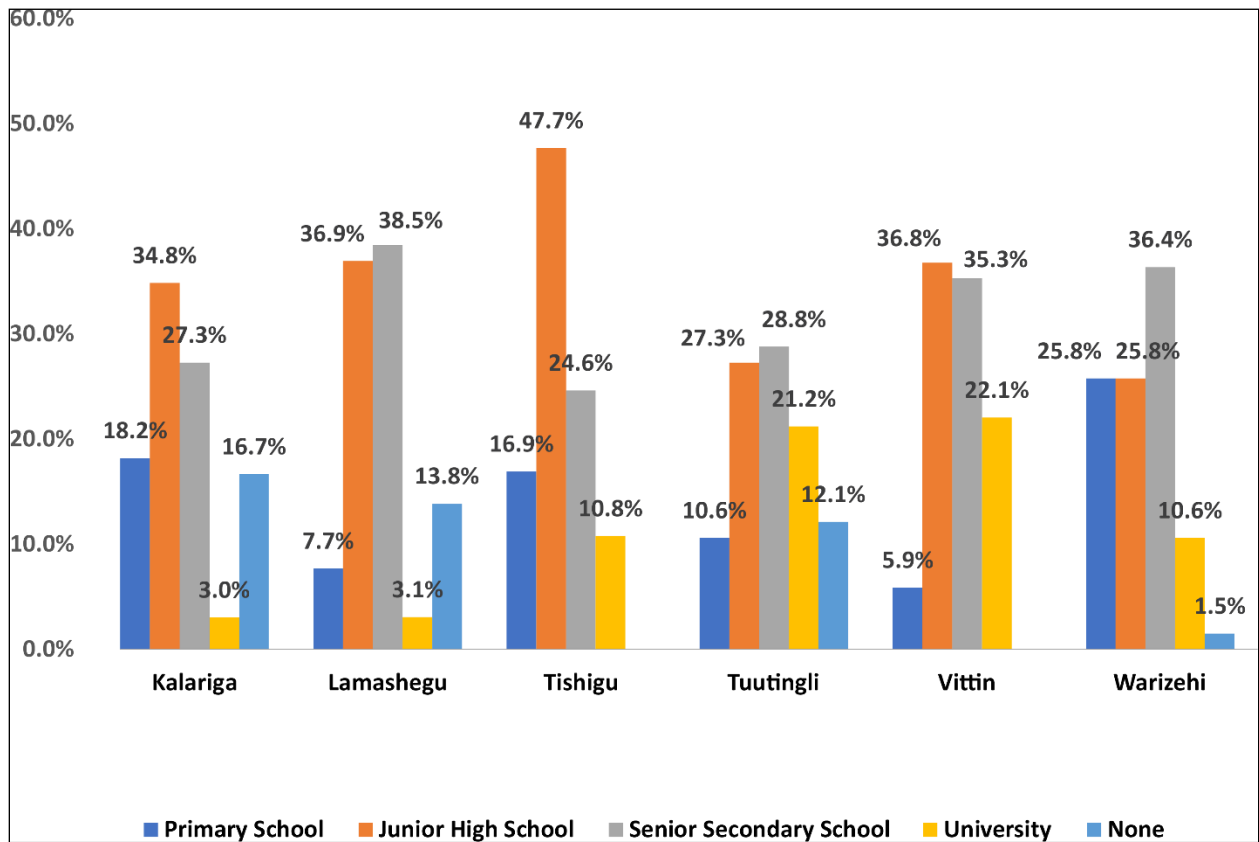*Respondent's settlement area and their educational levels*

Figure 3 below shows the usage level of mobile phones to access reproductive health service across the various settlement areas. The graph shows that Tishigu and Vittin had the highest usage of mobile phones to access reproductive health at 35% and 34% respectively. This was followed by Tutigli with a usage level of 24% and Kalariga with a mobile phone usage level of 18% for reproductive health services. Lamashegu had the lowest usage of mobile phones to access reproductive health services at 7% followed by Werizehi at 14%.

Figure 3

Use of mobile phones to access reproductive health service by settlement
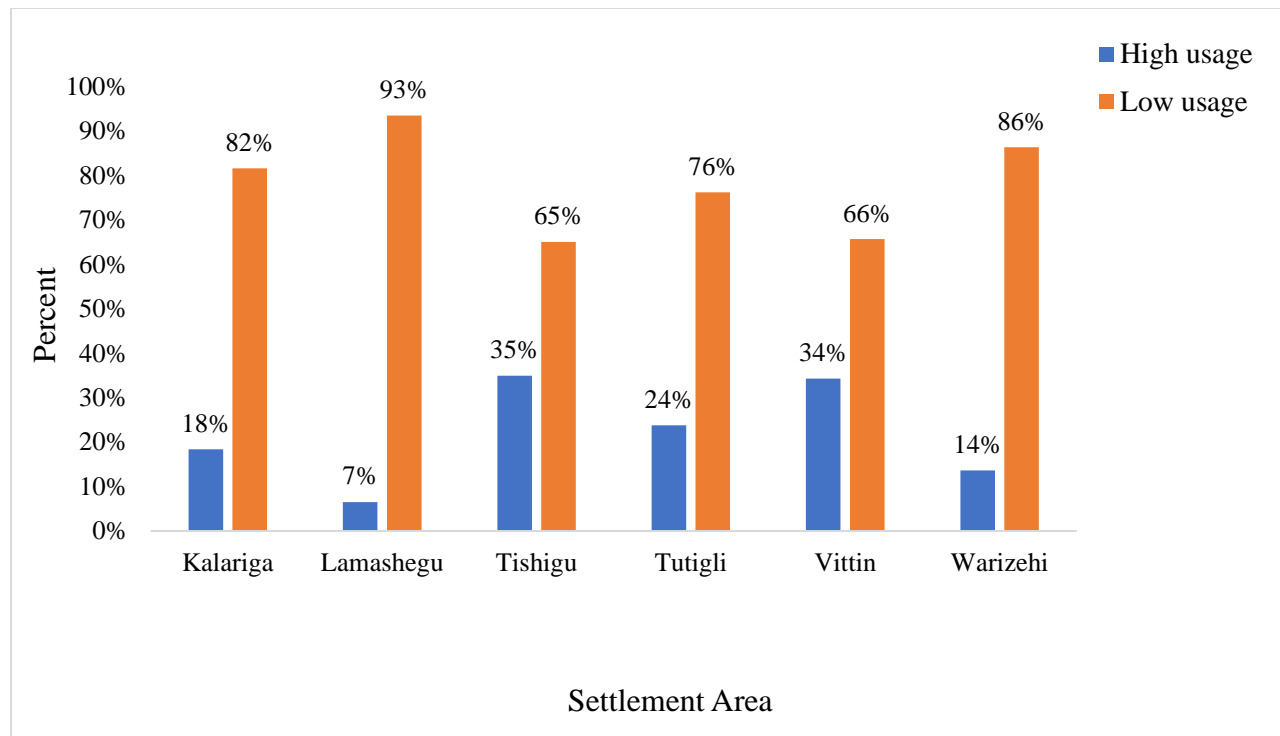
Results of Bivariate Analysis

The bivariate analysis results showed that only 1% of young people between 10 and 14 years used the mobile phone to access reproductive health services. This is lower compared to the proportion of young people aged between 15-19 and 20-24 years at 24% and 31% respectively. The results show an increasing trend in the use of mobile phones to access reproductive health services with increasing age. The p-value ($p<0.05$) suggests that the relationship between age and the use of the mobile phone to access reproductive health is statistically significant at 95% confidence level. Similarly, the results show that 40% of young people who are males use mobile phones to access reproductive health services compared to only 8% of young people who are females ($p<0.05$).

The results show that high levels of education is statistically associated with use of mobile phone to access reproductive health ($p=<0.05$). As presented in Table 2, 5% of those whose education level is indicated as none are high users of mobile phone in accessing reproductive health services. Only 6% with primary education, 13% with junior secondary, 36% with senior secondary and 43% with university education.

Regarding religion, study results show that 21% of young people who are Muslims use mobile phone to access reproductive health services which is lower compared to 33% of young people who are Christians. The p-values ($p=<0.05$) shows that this association between religion and the use of mobile phone to access reproductive health is statistically significant.

Regarding socio-economic status (SES), results show that only 11% of young people in the lowest wealth quintile (poorest) show high usage of mobile phone to access reproductive health services and this proportion increases as individual SES increase to 19%, 24%, 36% and 28%. The p-value ($p=0.01<0.05$) shows that there is a positive association between SES and use of mobile phone to access reproductive health services

Table 2

Cross-Tabulation of selected user characteristics and Mobile Usage

Variable	Low usage	High usage	P-Value
Age (Years)			**0.001**
10-14	99%	1%	
15 -19	76%	24%	
20-24	69%	31%	
Gender			**0.001**
Male	60%	40%	
Female	92%	8%	
Highest Level of Education			**0.001**
Primary	94%	6%	
Junior High	87%	13%	
Senior Secondary	64%	36%	
University	57%	43%	
None	95%	5%	
Religion			**0.034**
Islam	79%	21%	
Christianity	67%	33%	
SES			**0.01**
Poorest	89%	11%	
Poorer	81%	19%	
Poor	76%	24%	
Less Poor	64%	36%	
Least Poor	73%	28%	

Multivariate Analysis

Before conducting the multivariate analysis, a multicollinearity test was conducted, and the results are presented in Table 3. Based on Variance Inflation Factor (VIF) and Tolerance, age, gender, the highest level of education, and religion, were found to have the least multicollinearity and hence used in the model.

Table 3 Collinearity Statistics

Variable	VIF	Tolerance
Age	1.21	0.83
Gender	1.35	0.74
Highest Level Education	1.21	0.82
Religion	1.06	0.95
Socio-Economic Status (SES)	1.06	0.95

Table 4 presents summary statistics including the coefficient estimates (beta), standard error (SE), z-and p-values, and odds ratio. The p-value of <0.001 on the intercept after controlling for SES shows that the use of the mobile phones is a non-random process and thus has determinants to it. In this study, age, gender, the highest level of education, religion, and SES were taken as potential determinants.

Participants aged 15-19 and 20-24 are 6.62 and 8.35 times more likely respectively to use mobile phonesto access reproductive health services compared to those aged 10-14. However, the difference is statistically insignificant (*p=0.15*). Results also indicated that male young people are 4.79 times more likely to use mobile phones to access reproductive health services than their female counterparts. The p-value (*p=0.001*) showed that the difference between young males and young females in the use of mobile phones is statistically significant. It was also found that in the context of other variables, the highest education level is not a significant variable among young people. However, it is interesting to note that young people with primary education were 1.48 times more likely to use mobile phones to access reproductive health services than those without no education.

Regarding religion, it was found that young people affiliated to the Christian faith were almost twice (odds ratio=1.8) more likely to use their mobile phones to access reproductive health services than their Muslim counterparts; however, this difference is not statistically significant (*p=0.25*).

Finally, results showed that there was a significant association between individual SES and use of mobile phone to access reproductive health. However, the difference between those in the second (poorer) and third (poor) wealth quintiles is insignificant compared to the first wealth quintile (poorest) as indicated by the p-values *p=0.74>0.05* and *p=0.73>0.05,* respectively. There are statistically significant differences for those who are less poor and least poor as they are twice (2.82 and 2.76 respectively) as more likely to use the mobile phone to access reproductive health services compared to those in the lowest wealth quintile (poorest). The p-values for these are*p=0.02<0.05* and *p=0.04<0.05,*respectively and are statistically significant.

Table 4

Multiple Logistic Regression Model of Determinants of Mobile Phone use

Predictor	Estimate	SE	Z	p	Odds Ratio
Intercept	-9.04	2.03	-4.45	< .001	0.00
Age (Years):					
10-14 (*Reference*)					
15-19	1.89	1.32	1.44	0.15	6.62
20-24	2.12	1.35	1.57	0.12	8.35
Gender:					
Female (*Reference*)					
Male	1.57	0.54	2.90	< .001	4.79
Highest Level Education:					
None (*Reference*)					
Primary School	0.39	1.52	0.26	0.80	1.48
Junior High School	-0.58	1.44	-0.40	0.69	0.56
Senior Secondary	-1.09	1.47	-0.74	0.46	0.34
University	-1.66	1.56	-1.07	0.29	0.19
Religion:					
Islam (*Reference*)					
Christianity	0.59	0.52	1.14	0.25	1.80
Socio-Economic Status (SES):					
Poorest (*Reference*)					
Poorer	-0.24	0.73	-0.33	0.74	0.79
Poor	-0.24	0.70	-0.35	0.73	0.79
Less Poor	0.60	0.74	0.81	0.02	2.82
Least Poor	-0.28	0.69	-0.40	0.04	2.76

Note. Estimates represent the log odds of "*Dependent Variable = High usage*" vs. "*Dependent Variable = Low usage*"

Discussion

In Ghana, the right to health, including the right to reproductive health, is guaranteed by the constitution; nevertheless, several obstacles make it impossible for most Ghanaians to fully exercise this right. The current study aimed to assess how SES, educational attainment, and religious affiliation affected the use of mobile phones to access reproductive health services. There were 397 respondents interviewed from the selected communities in the Tamale Metropolis. The mean age of respondents was18.2 years, with a minimum age of 10 years, and a maximum age of 24 years with a range of 14 years. The observation of the mean age of 18.2 years could be attributable to the fact that most young people below 18 years did not have mobile phone access, compared to those 18 years and above.The finding from this research confirms the findings made from a similar study by Macharia et al., (2022), who conducted a Randomized Controlled Trial (RCT) in Kibra in Nairobi County in Kenya on the effectiveness of an mHealth application with a focus on adolescents. They reported the mean age of their respondents to be 17.3 years. Similarly, an earlier study by Robinson et al. (2011) reported that the people who use their mobile phones the most frequently are those between the ages of 18 and 24. The observation resonates with the findings of a similar study conducted by Alhassan et al. (2019), which was a cross-sectional analytical study among 250 adolescents and young adults between the ages of 18 and 24 at the University of Ghana. The research participants' age range was reported to be 18 to 24 years old. Again, these findings are similar to those presented in the study

carried out by Alaiad et al. (2019), in which it was reported that 69 per cent of the participants in the study were between the ages of 18 and 33.

In this study, the research findings indicate that just a little above fifty per cent (50.4%) of the surveyed respondents were females, with 49.6% being males. The fact that females usually dominate this kind of research has been ascertained by the findings ofRobinson et al. (2011) and later by Hampshire et al., 2015. In Ghana, the total female population (50.7%) outnumber the male population (49.3%) by 0.4 million. This means that the gender ratio of Ghana's population structure is female-dominated, with 15.6 million of the population being females and 15.2 million of the population being males. The population dynamics of Ghana, as postulated by the Ghana Statistical Service, confirm that in all communities across the country, the female population is higher than that of men (Ghana Statistical Service, 2021). Also, this finding is in line with earlier research carried out by Khatun et al. (2015), who discovered that in Bangladesh, most of their respondents were females, accounting for sixty per cent (60%) of the overall population. Similar findings were reported by Alam et al. (2019), indicating that the majority of the demographic characteristics of their respondents were of the female gender, constituting (56%) of the total respondents. Lefevre et al., (2020) investigated if mobile phone ownership mattered in accessing the information necessary for Reproductive, Maternal, Newborn, and Child Health (RMNCH) to support people's informed choices. The research was conducted in 17 countries: Albania, Armenia, Ethiopia, Haiti, Jordan, Malawi, Maldives, Nepal, Pakistan, Philippines, Senegal, South Africa, Tajikistan, Tanzania, Timor-Leste, Uganda, and Zimbabwe. Lefevre et al. (2020), in their study findings, contend that: (1) gender gaps in mobile phone ownership vary, but they can be substantial, with less than half of women owning mobile phones in several countries; (2) the gender gap and incremental disparity in mobile phone ownership are more significant for rural and poorer women than their urban and less-poorer counterparts; (3) women's mobile phone ownership is generally associated with better Reproductive, Maternal, Newborn and Child Health indicators; (4) among women phone owners, utilization of Reproductive, Maternal, Newborn and Child Health care-seeking and practices differs based on their income status.

It was observed that the surveyed participants who had some levels of education were proportionally more, therefore, suggesting that the majority of the study participants had some form of education. This study is consistent with the results of the research conducted by Mastellos et al. (2018), with most participants having secondary education. The findings are also consistent with the results of the Population and Housing Census conducted by the Ghana Statistical Service, which showed that four out of ten (40.7%) of the Ghanaian population who are 18 years and above who are presently in school are at the tertiary level of their education.

A further analysis of the data from Figure 2, reveals that, Tishigu had the highest educational attainment for junior high school and this may be mostly due to the fact that the community is located in the centre of the Tamale township, with unlimited access to basic school (Primary and junior high school) educational facilities. Vittin and Tuutingli had more university graduates than the other areas because Vittin and Tuutingli are from previous studies considered high income areasand so are naturally expected to have more well-educated residents. The assumption here is that people who live in high income neighbourhoods are susceptible to acquiring higher education because they are able to afford, compared to their counterparts in lower income areas.Linking these findings to the usage levels of Table 9, (junior high school (13%), senior high school (36%) and university (43%) it can be concluded that the higher the level of

education, the higher the usage. This explains why in terms of use of mobile phones to access reproductive healthcare across the various sub-urban area, it usage levels are higher in Tishigu (35%), then in Vittin (34%) and also in Tutigli (24%).

The promotion and rollout of any mHealth programme can leverage on the high literacy levels of the suburban areas, considering that the result show that the higher the literacy levels, the more likely it is to use mHealth services.

The majority of respondents reported that they were Muslims (Islamic Religion). This constituted 82.8% of the surveyed respondents compared to 17.2% of those who reported that they were Christians. Although this finding is not consistent with the results of the 2021 population and housing census in Ghana that revealed that Christians were the largest religious group in Ghana with a share of 71.2 per cent, and Muslims represented 17.6 %, it is however understandable because the northern region of Ghana and for that matter Tamale, is a predominantly Muslim dominated area that has regionally, 419,216 Christians which translates into 1.9% of the population in the northern region, whiles 1,532,977 of the population are Muslims which represents 25.1% of the population in the northern region. Consequently, it is unsurprising that a large margin exists between responses from Christian and Islamic respondents in this study. Further, the survey conducted by the Ghana statistical service is at the national scale, while this current research was only conducted within and limited to the Tamale metropolis.

The demographic characteristics of the study sample show that the majority of the respondents reported that they were staying with their parents and a majority, 55.2% of the survey respondents, indicated that their sources of income were from their parents. This is the general trend prevailing in Ghanaian society, considering the age group of the study participants. Young people below 24 years are more likely to live with their parents and obtain their food, shelter, and other provisions from their parents. This could also be attributed to the fact that at this age, most young people may either be students, have just completed senior high schools, under an apprenticeship or may have just graduated from apprenticeship and searching for jobs or seeking to create one for themselves. According to the Ghana Statistical Service, close to half a million persons in Ghana who are 15 years and above, are seeking jobs for the first time, with almost an equal number of females and males in the population. The report further mentions that two in five, representing 45.5% of the unemployed persons who are 15 years and above available for work but are not seeking employment. Due to continuous monitoring by their parents or other relatives, young people are usually restricted and limited in accessing certain services, including reproductive health services, due to constant monitoring by their parents. Between the ages of 18 and 25, according to Arnett (2015), emerging adulthood is a period during which young people explore and make important decisions about health, marriage, employment, housing and other aspects of their lives. The plausible reason why more than half of the study respondents reported that they lived with their parents could be that, at the reported mean age of 18.2 years, most young people live with their parents even after they complete senior high school or university for the lack of formal employment or ability to create their own businesses and are thus dependent on their parent.

According to the findings, young people between the ages of 15, 19, 20 and 24 are 7 and 8 times more likely than those between ages 10-14 to use a mobile device to obtain services related to reproductive health, respectively. The change is not statistically significant. This is most likely

due to the small age difference between the study's minimum and maximum ages. The findings also showed that young males are twice as likely as young females to use the mobile phones to obtain services related to reproductive health. The difference in mobile phone use between young males and females is statistically significant, as indicated by the p-value ($p<0.05$).

This research found that the highest level of education among young people is not a significant determinant compared to other variables. The fact that young people with only a primary level of education are twice more likely to use a mobile phone to obtain reproductive health services than people whose greatest degree of education is listed as none is nonetheless interesting to notice. As one's education level rises beyond primary, secondary, and university levels, there does not appear to be any change. Yesgat et al., 2020, also found that more education greatly boosts the uptake of sexual health services.

In terms of religion, it was discovered that young people who identify as Christian are almost twice as likely to use a cell phone to seek reproductive health services as their Muslim counterparts. The study's findings indicate that 21% of young people who are Muslims use mobile phones to receive reproductive health services, which is less than the 33% of young people who are Christians. This finding is in agreement with Ansha et al., 2017 who found that, when compared to Christian teenagers, Muslims had reduced odds (OR=0.21) to access reproductive health care. They found that the statistical significance was high. They concluded that Muslim adolescents were less likely to use and access reproductive health services than non-Muslim adolescents. Muslim adolescents are frequently discouraged from using and accessing such services, which includes reproductive health services (Abebe et al., 2014). The low usage among young Muslims can lead to poor sexual and reproductive health knowledge and practices among Muslims.

The significant association between individual wealth quintiles and use of mobile phone to access reproductive health found in the present study reveals that the better the socio-economic status, the more there is the usage of the mobile phone to access reproductive health services.

Conclusion

The purpose of this research was to investigate the influence of socio-economic status, education and religious affiliation on the use of mobile phones to access reproductive health services. Young people's family socio-economic status (SES) varied significantly across the various sub urban areas investigated, and this has influence on their use of mobile phones to access reproductive health services. Young people from least poor families are twice as likely to use mobile phones to access reproductive health services compared to those from families in the lowest wealth quartile. This means that with an improved socio-economic status, there will be an improved uptake in mHealth service utilisation by people within those areas. The least poor have the financial muscle to afford mobile phones and the cost of its associated services. To them, mobile phones could be seen as essential tools for their development compared to those with the least wealth who may see mobile phones as a luxury item. Those in the lowest wealth bracket are likely not to be in a position to have the resources to procure mobile phones, and in instances where one owns a mobile phone, they are unlikely to use it to access reproductive health services due to how 'expensive' they may find data and airtime.

This research found that the association between religion and the use of mobile phone to access reproductive health was statistically significant. However, earlier research by Peprah et al., (2019), found that religion insignificantly predicted the use of mHealth. It is important to settle this difference in findings through further research. There is therefore the need for further research to further explore the true association between religion and the use of mHealth.

It is also concluded that young people who have some level of education are proportionally more, therefore, suggesting that the majority of the study participants had some form of education. Further, the rate of usage of mHealth correlated with the highest level of education.

There were differences observed in usage of the mobile phone to access reproductive health between male and female respondents, with males more likely to use mobile phones to access reproductive health services compared to their female counterparts. This is not surprising as young Ghanaian males in general have more access to "sophisticated" phones and are more adept at technology use for which reason they may tend to use mobile phones for accessing reproductive health services. However, this finding was revealing because young females are considered to be more susceptible to reproductive health issues, especially early pregnancy and Sexually Transmitted Infections (STIs) and one would have expected that they would have been the higher users of mobile phones much in accessing their reproductive health needs. Factors including the fact that there is, apparently, more public discussions on female reproductive health issues on multiple platforms than there are on those of males could account for this. Also, parents tend to give more reproductive health education to their young females than young males, hence the former (young females), are unlikely to rely on mobile phone to access reproductive health information or services because they may appear to be receiving some information from their parents. The findings however bring to the fore, the need to give equal attention to reproductive health services and issues for both young males and females.

This study recommends that further studies should be carried out to understand why there is low usage of mHealth among young females considering the fact that females are much more susceptible to reproductive health challenges. In addition, further studies will help to reveal why despite the documented benefits and cost effectiveness of mHealth, people in the lowest wealth quintile (poorest) are not taking advantage of mHealth to access reproductive health services.

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