



Assessment of Honey Utilization in Ughelli North Local Government Area, Delta State, Nigeria

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Abstract: The study assessed the utilization of honey in Ughelli North Local Government Area, Delta State, Nigeria. Out of the seven (7) communities in Ughelli North Local government area, four (4) communities were purposively selected for the study and seventy (70) copies of questionnaires were randomly administered to the households in each of the communities. A total of two hundred and eighty (280) copies of questionnaires were administered to the respondents in the study area. The data were analyzed using descriptive statistics of frequency, percentage, mean and presented in tables and charts. The results revealed that the majority of the respondents (32.13%) use honey as beverages while the least (4.59%) use honey as skin care. Nutritional benefit influenced the majority of the respondents (50.34%) to use honey while price influenced the least (2.05%). The medicinal uses of honey revealed that the majority of the honey consumers (38.17%) use honey for wound healing while the least (3.44%) use honey for allergy relief. The results revealed that some people do not utilize honey as reported by majority of the respondents because of high price (51.32%) while limited availability (3.95%) was the least. The results also revealed that majority of the respondents (30%) consume honey daily while the least (15%) rarely consume honey and 2% never consume honey. The highest number of respondents (42.50%) consume honey in the morning during breakfast while the least (6.07%) in the afternoon during lunch. The results of the challenges with honey utilization revealed that majority of the respondents (58%) reported high price of honey, 28.80% reported the quality of honey, 9.20% unpleasant taste, 2.40% limited availability and 1.60% lack awareness about its benefit. It was recommended that there should be increase in awareness about honey's benefits by utilizing effective channels like the internet and radio to help educate potential customers about the nutritional and medicinal values of honey.

Keywords: Honey; Beverage; Nutritional benefit; Medicinal uses; Wound healing.

INTRODUCTION

Honey, the most popular and important bee product has a long history of human consumption as a natural food source, preservative and medicine (Ismaiel *et al.*, 2014) while it has also been used extensively in the cosmetic industry. Honey is a natural sweetener produced by bees from the nectar of flowers. It is a valuable commodity that

has been used for centuries in various cultures for its medicinal, nutritional, and economic benefits (Krell, 1996). In Nigeria, honey production is an important livelihood activity for many rural communities, particularly in the southern regions where the climate and vegetation support beekeeping (Ajewole, 2011). It has been consumed for centuries due to its nutritional, medicinal, and economic benefits. Honey is rich in antioxidants, vitamins, and

minerals, making it a popular ingredient in food, beverages, and pharmaceutical products.

Honey has been a valuable resource in Nigeria for centuries, with its medicinal, nutritional, and industrial applications being well-documented. In traditional Nigerian medicine, honey is used to treat various ailments, including wounds, coughs, and gastrointestinal disorders. According to Owolabi *et al.* (2017), honey's antibacterial and antifungal properties make it an effective treatment for wounds and skin infections.

Honey production is an important livelihood activity for many rural communities. However, despite its potential benefits, the utilization of honey is hindered by several challenges. One of the major challenges facing the utilization of honey in the area is the lack of awareness about its benefits and uses. People are not aware of the medicinal, nutritional, and economic benefits of honey, leading to low demand and underutilization of this valuable commodity (Ajewole, 2011). Another challenge affecting the utilization of honey in the area is the high price of honey. The cost of honey is prohibitively expensive for many people, making it inaccessible to those who need it most. This is partly due to the limited production and marketing infrastructure in the area, which leads to high transaction costs and low economies of scale (Adeoye, 2015). Also in many developing countries, honey production is characterized by traditional beekeeping practices, inadequate processing and preservation techniques, and limited market access. These challenges result in low productivity, poor quality honey, and limited economic benefits for beekeepers and other stakeholders in the honey value chain (Afolabi, 2018). The demand for honey is increasing globally due to its growing popularity as a natural sweetener and its potential health benefits. However, the supply of honey is not meeting the demand, resulting in a shortage of high-quality honey in the market (Adeyemi *et al.* 2019). In addition, the marketing channels for honey are often inefficient, leading to high transaction costs, low prices for beekeepers, and limited access to markets for processed honey products (Ogundele, *et al.* 2020).

Effective utilization of honey is crucial for harnessing its economic, nutritional, and medicinal benefits. However, the full potential of honey remains untapped due to inadequate knowledge and awareness about its uses and benefits. Furthermore, the lack of proper handling, processing, and storage practices can lead to a decrease in the quality and shelf life of honey, ultimately affecting its utilization (Krell, 1996). Optimizing the utilization of honey requires a comprehensive understanding of its properties, uses, and benefits. By examining the utilization of honey, this research aims to provide insights into how to promote the effective use of honey and unlock its full potential. Despite these efforts, there is a need to assess the current state of honey utilization in Nigeria, consumption patterns, and challenges facing honey utilization.

MATERIALS AND METHODS

Study Area

The study was conducted in Ughelli North Local Government Area located in Delta State, Nigeria, and is one of the 25 Local Government Areas in the state. The area is situated in the Niger Delta region and has its headquarters in the city of Ughelli. It lies approximately between longitude 5°51'00"E to 6°02'00"E and latitude 5°25'00"N to 5°38'00"N with an area of 818Km square and also a population of 321,028 at the 2006 census. Ughelli North is predominantly inhabited by the Urhobo ethnic group and is known for its rich cultural heritage.

The local government area is bounded by other local government areas in Delta State and is characterized by a tropical rainforest vegetation, which provides a suitable environment for beekeeping and honey production. In fact, beekeeping is a traditional practice in some communities within Ughelli North, with honey being used for medicinal, nutritional, and cultural purposes.

The area's tropical climate and vegetation make it an ideal location for honey production, with several communities engaging in beekeeping as a source of income. Honey is also used in traditional medicine and as a food ingredient, highlighting its importance in the local culture. The population of Ughelli North is diverse, with a mix of urban and rural dwellers. While agriculture is a significant sector, with crops like cassava, yam, and oil palm being cultivated, beekeeping and honey production also contribute to the local economy. Overall, Ughelli North Local Government Area has the potential for honey production, given its favorable climate and vegetation. The area's cultural heritage and traditional practices also highlight the importance of honey in the local community.

Sampling Techniques

According to the 2006 National Census, Ughelli North Local Government Area of Delta State, Nigeria had a population of 320,687 (National Bureau of Statistics). Using 2% Annual Growth Rate, the projected population for 2025 was 457,256. Using a sampling intensity of 0.06%, two hundred and eighty (280) respondents were used for the study.

There are seven (7) communities in Ughelli North Local Government Area of Delta State, namely Orogun, Ewvreni, Uweru, Ogor, Ughelli, Agbarho, and Agbarha. Four communities (4) which are Ughelli, Orogun, Agbarha, and Ewvreni, were purposively selected. Out of the four communities selected, seventy (70) households from each community were randomly selected to make up a total of two hundred and eighty (280). A total of 280 respondents (household) were interviewed during the study using questionnaire and personal interview. A total of 280 copies of questionnaire were administered to the respondents.

Data Collection

Primary data used for the study were collected through the use of questionnaires, personal interview and direct observation. The questionnaires were structured and designed to collect information about the socio-economic

characteristics, such as (age, gender, level of education, household size, occupation) and others to fulfill the objectives of the study. Secondary data were collected from journals, publications and internet.

Data Analysis

The data collected were analyzed using descriptive statistics such as frequency, percentages and means. The results were presented in tables, charts and graphs.

RESULTS AND DISCUSSIONS

Socio-Economic Characteristics of Respondents

The results of the Socio-Economic characteristics of the respondents revealed that 60% of the respondents were females while 40% were males. The majority of the respondents (27.86%) were between 25-34 years old while the least (7.50%) were 18-24 years old. The majority of the respondents practiced Christianity (91.43%), 62.14% were married, 41.43% had secondary education, 33.57% were self employed, and 40% had a household size of 5-8. This is shown in Table 1. The results revealed that honey consumers

were males (40%) and females (60%). This demonstrated that both sexes consumed honey and there is no gender restriction to the consumption of honey. The male and female respondents are of varying age groups. The findings indicate that there is no age restriction to honey consumption. The majority of the people that consumed honey were 25-34 years of age (27.86%). This indicated that many young people consumed honey and were aware of the benefits of honey consumption. This finding is consistent with Zak (2017) which reported that young people consume honey because it is always present at their family’s dining tables, and that older people eat honey for its pro-health properties; they believe honey contains a lot of nutrients and has some therapeutic properties, particularly among married people. A high percentage of the respondents were married (62.14%) and educated as 41.43% had secondary education while 38.57% had tertiary education. This indicated that as educated respondents they were aware of the nutritional values of honey and they had to consume it for its enormous benefits. This finding is in agreement with Wahab, *et al.* (2017) which discovered that those with university education consumed more honey than those with lower education status.

Table 1: Socio-Economic Characteristics of Respondents

Demographic status	Variable	Frequency	Percentage (%)
Gender	Male	112	40.00
	Female	168	60.00
Total		280	100
Age (in years)	18-24	21	7.50
	25-34	78	27.86
	35-44	56	20.00
	45-54	63	22.50
	55 and above	62	22.14
Total		280	100
Religion	Christianity	256	91.43
	Islam	17	6.07
	Traditional belief	7	2.50
Total		280	100
Marital Status	Married	174	62.14
	Single	70	25.00
	Divorced	11	3.93
	Widow	25	8.93
Total		280	100
Highest level of Education	Informal education	17	6.07
	Primary education	39	13.93
	Secondary education	116	41.43
	Tertiary education	108	38.57
Total		280	100
Occupation	Student	45	16.07
	Civil Servant	39	13.93
	Self employed	94	33.57
	Retired	28	10.00

	Farmer	35	12.50
	Unemployed	39	13.93
Total		280	100
Household size	1-4	100	35.71
	5-8	112	40.00
	9-12	68	24.29
Total		280	100

Uses of Honey

The results of the uses of honey revealed that the majority of the respondents (32.13%) use honey as beverages while the least (4.59%) use honey as skin care. Nutritional benefit influenced the majority of the respondents (50.34%) to use honey while price influenced the least (2.05%) to use honey. This is shown in table 2. The respondents use honey as additives when taking tea and beverages (32.13%) for their breakfast. This is an indication that many of the honey consumers are aware of the nutritional and medicinal benefits of honey. Consumption of honey as beverages

(32.13%) and medicinal purpose (30.82%) were most of the reasons the respondents use honey for. This result is in line with the findings of Ismaiel *et al.* (2014) and Zulail *et al.* (2014) that the major motivations for honey consumption are its medicinal and nutritional values. Nutritional benefit of honey (50.34%) influenced the decision of many of the respondents to use honey. This is consistent with the findings of Orfanakis *et al.* (2024) who concluded that honey is high in sugar and include vitamins.

Table 2: Uses of Honey

Variable	Frequency	Percentage (%)
What do you use honey for?		
Cooking	30	9.84
Baking	69	22.62
Beverages	98	32.13
Medicinal purpose	94	30.82
Skin care	14	4.59
Total	305	100
What factors influence your decision to use honey?		
Price	6	2.05
Quality	24	8.23
Availability	15	5.14
Nutritional benefit	147	50.34
Recommendation from others	100	34.25
Total	292	100

Medicinal uses of honey

The results of the medicinal uses of honey revealed that the majority of the honey consumers (38.17%) use honey for wound healing while the least (3.44%) use honey for allergy relief. This is shown in figure 1. The medicinal uses of honey as reported by the respondents include wound healing, cough and cold relief, digestive issues, energy booster, diabetes, and allergy relief. This is in agreement with Salehi *et al.* (2014) which confirmed that honey includes flavonoids that can enhance the human immune system against dental plaque and gingivitis. Salehi *et al.* (2014) also claimed that honey contains antioxidants and has the potential to combat allergies.

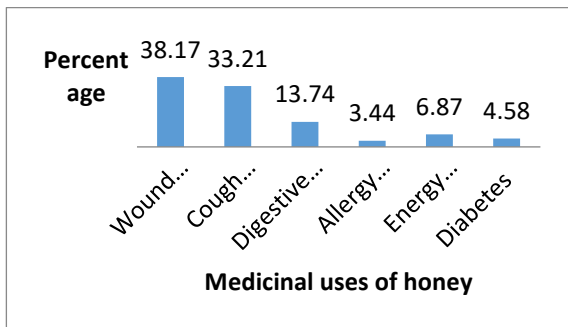


Figure 1: Medicinal uses of honey

Why people do not utilize honey

The results of why people do not utilize honey revealed that high price (51.32%) was reported by majority of the respondents, lack of awareness about its benefit (32.89%) while limited availability (3.95%) was the least. This is shown in table 3.

Table 3: Why people do not utilize honey

Variable	Frequency	Percentage (%)
Lack of awareness about its benefit	100	32.89
High price	156	51.32
Unpleasant taste	15	4.93
Limited availability	12	3.95
Quality of the honey	21	6.91
Total	304	100

Quality of honey

The results of the quality of honey revealed that the highest number of respondents (82.14%) reported that the

quality of honey is very important when making purchase, 10% reported that it is not very important while 7.86% said that it is important. This is shown in table 4.

Table 4: Quality of honey

Variable	Frequency	Percentage (%)
How important is the quality of honey when making a purchase?		
Very important	230	82.14
Important	22	7.86
Not very important	28	10.00
Total	280	100

Source of information on the importance of honey

The results of the Source of information on the importance of honey revealed that internet had 32.08%, radio 28.77%, personal interaction 26.89%, magazine 6.13%, television 4.25%, and newspaper 1.89%. This is shown in figure 2

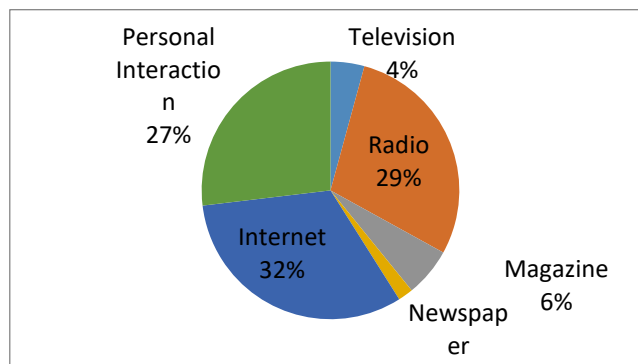


Figure 2: Source of information on the importance of honey

Ways honey producers/marketers can improve honey utilization

The results revealed that majority of the respondents (48.89%) reported reduction in price as ways honey producers/marketers can improve honey utilization while the

least (5.08%) went for improved availability. This is shown in table 5.

Table 5: Ways honey producers/marketers can improve honey utilization

Variable	Frequency	Percentage (%)
Increase awareness about benefit	89	28.25
Improve availability	16	5.08
Reduce price	154	48.89
Improve quality	56	17.78
Total	315	100

Frequency of honey Consumption

The results of the frequency of honey Consumption revealed that majority of the respondents (30%) consume honey daily while the least (15%) rarely consume honey and 2% never consume honey. This is represented in figure 3. The reason why the respondents consume honey daily (30%) could be due to the belief of the respondents that refined sugar is not good for their health and they prefer to take honey which contains natural sugar.

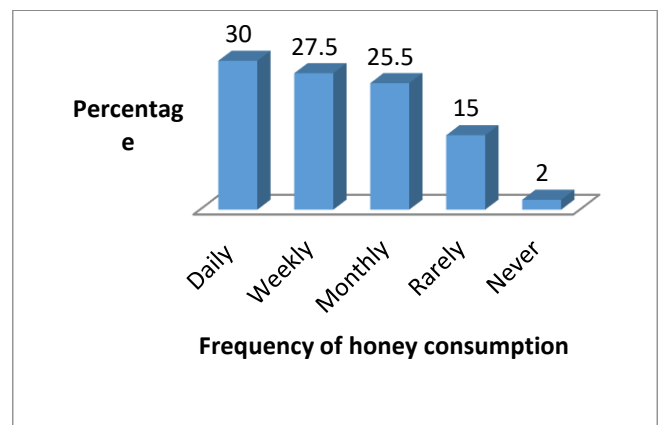


Figure 3: Frequency of honey consumption

Quantity of honey consumed

The results of the quantity of honey consumed per week revealed that 36.07% of the respondents consume less than 1 tablespoon, 26.43% more than 4 tablespoons, 25.36% 1-2 tablespoons, and 12.14% 3-4 tablespoons. The majority of honey consumers (43.93%) consume honey both alone and with other food/drink while the least (26.07%) consume it alone. This is shown in table 6.

Table 6: Quantity of honey consumed

Variable	Frequency	Percentage (%)
How much honey do you consume per week?		
Less than 1 tablespoon	101	36.07
1-2 tablespoons	71	25.36
3-4 tablespoons	34	12.14
More than 4 tablespoons	74	26.43
Total	280	100
Do you consume honey alone or with other food/drink?		
Alone	73	26.07
With other food/drink	84	30.00
Both	123	43.93
Total	280	100

The results of the time of the day honey is consumed revealed that the highest number of respondents (42.50%)

Time of the day honey is consumed

consume honey in the morning during breakfast while the least (6.07%) in the afternoon during lunch. This is shown in

Table 7. This shows why many of the respondents take honey in the morning as breakfast (42.50%).

Table 7: Time of the day honey is consumed

Variable	Frequency	Percentage (%)
What time of the day do you usually consume honey?		
Breakfast	119	42.50
Lunch	17	6.07
Dinner	45	16.07
Snack	60	21.43
Anytime	39	13.93
Total	280	100

Challenges with honey utilization

The results of the challenges with honey utilization revealed that majority of the respondents (58%) reported high price of honey, 28.80% reported the quality of honey, 9.20% unpleasant taste, 2.40% limited availability and 1.60% lack awareness about its benefit. This is shown in figure 4. The high price of honey (58%) and quality of honey (28.80%) were the major challenges of honey utilization as reported by honey consumers. This is in agreement with Olaitan *et al.* (2014) that honey adulteration is a major challenge facing the honey industry in Nigeria and Adeyeye *et al.* (2017) which reported that there is a lack of standardization in the honey industry in Nigeria, which can make it difficult to ensure quality.

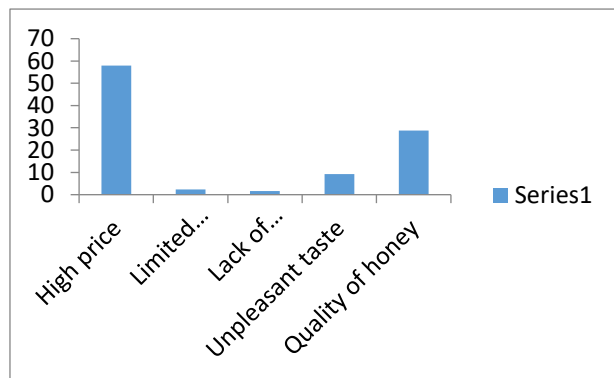


Figure 4: Challenges with honey utilization

CONCLUSION

The study concluded that the majority of honey consumers were predominantly female, educated, and between 25-34 years old. They prioritize health benefits, quality, and nutritional value when purchasing honey. These consumers use honey for various purposes, including beverages and medicinal uses. However, the high price of honey is a significant barrier to consumption, with many feeling that it's unreasonable. There should be increased awareness about honey's benefits by utilizing effective channels like the internet and radio to help educate potential customers about the nutritional and medicinal values of honey. Also, price concerns should be addressed by relevant

stakeholders to help reduce costs of honey and make it more competitive in the market.

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Conflict of Interest

There are no conflicts of interest declared by the authors.

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