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ORIGINAL RESEARCH ARTICLE

Consumers' perception and preference for Japanese quail and the commercial chicken eggs in Akinyele local government area of Oyo State, Nigeria

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ABSTRACT

Consumers' preference and perception as well as the organoleptic characteristics of Japanese quail eggs compared with the commercial chicken eggs were studied. A set of structured questionnaire was randomly administered to 200 respondents in Akinyele Local Government, Area, Ibadan, Oyo State. Results showed that 87.0% of the respondents were Yoruba, 10% Igbo and 3.0% Hausa; 60.5% were male and 39.5% female. In the study area, commercial chicken egg was more preferred, consumed and accessible compared with Japanese quail egg. However, quail egg was considered more palatable. The effect of increased income on egg consumption was significant ($p<0.05$) χ^2= 6.575 ($P=0.087$). Most consumers perceived quail egg to be healthier, difficult to come by and tastier. The sensory panelists rated quail eggs taste (4.15) and overall acceptability (4.15) significantly higher ($P<0.05$) compared to chicken eggs with the corresponding values of 3.55 and 3.70, respectively. Consumers' preference for egg types whether quail or chickens was evidently based on perception and not necessarily on nutritive or health information.

Keywords: Egg consumption pattern, Overall acceptability, Sensory evaluation, Respondents

INTRODUCTION

Egg is one of the most frequently consumed food items in the world, and in Western societies, the highest consumption is of chicken eggs (Muller and Tobin, 1996). Egg is one of the most nutritious foods available to man. It provides a balanced protein which contains all the amino acids considered essential in sufficient amounts and proportion to maintain life and support growth when used as a sole source of protein food (Ricketts, 1981). In addition, eggs have important functional properties in food which include; emulsification, colour, structure, thickening and binding (Kurtzweil, 1998). Other non-food functional properties of eggs have been documented (AEB, 2012). Egg production is on the increase in Nigeria and poor storage conditions may result in deterioration in egg quality and consequently, loss and waste. However, consumers refrained from egg consumption due to perceived relative high cholesterol content and that perpetual ingestion of cholesterol rich-food usually leads to coronary heart diseases and atherosclerosis (Zeidler, 1998). Recently in Nigeria, the markets of quail eggs is increasing and so were several unsubstantiated nutritional, pharmaceutical and medical benefits ascribed to quail eggs consumption (Lameed, 2013; Babayemi, 2014)

The interest in the Japanese quail as a research animal greatly increased after 1957 due to groups at the University of California and Auburn University who proposed its value in biomedical research. Fields in which Japanese quail (*Coturnix japonica)* is now widely utilized include: genetics, nutrition, physiology, pathology, embryology, cancer, behaviour, and the toxicity of pesticides (Ainsworth *et al*., 2010). The consumers' perceptions of quail egg relative to those from chickens have been documented in Brazil and seven other countries (Rogerio, 2009).

Information on consumers preference and perception of quail eggs relative to other selected poultry eggs in Nigeria is very scanty (Olugbemi *et al*., 2013) with no known documentation on these concepts in Oyo State, Nigeria. This study was therefore aimed at investigating the consumers' perception and preference for Japanese quail and

the commercial chicken eggs in Akinyele local government area of Oyo State, Nigeria.

MATERIALS AND METHODS

Description of the Study Area

The University of Ibadan, Ojoo and Moniya are all located in Akinyele Local Government Area, Oyo state, Nigeria. It is one of the eleven Local Government Areas that make up Ibadan metropolis. Akinyele Local Government Area was created in 1976 and it shares boundaries with Afijio Local Government to the north, Lagelu Local Government Area to the east, Ido Local Government Area to the west and Ibadan North Local Government Area to the south. The Local Government Area occupies a land area of 464.892square kilometer with a population density of 516 persons per square kilometer. Using 3.2% growth rate from 2006 census figures, the estimated population of the Local Government was 239,745. It was named after the late Olubadan, Oba Isaac Babalola Akinyele.

Akinyele Local Government Area is subdivided into 12 wards: Ikereku, Olanla/Oboda/Labode, Arulogun/ Eniosa/ Aroro, Olode/ Amosun/ Onidumdu, Ojo-emu/ Moniya, Akinyele/ Isabiyi/ Irepodun , Iwokoto / Talonta/ Idi-oro, Ojoo/ Ajibode/ Laniba/ Ijaye / Ojedeji , Ajibade/ Elekuru, Olorisa-oko/ okegbemi/ Mele and Iroko. The population is predominantly Yoruba. The rainfall distribution is from April to October, the area is located partly in the rain forest zone and partly derived savannah region.

Samples and Data Collection

A well-structured questionnaire constructed for this study was randomly administered to 200 respondents in Akinyele Local Government Area, the University of Ibadan and Ojoo areas. This comprised predominantly the learned and semi-literate respondents (ILCA, 1990). The respondents include students, artisans, transporters, civil servants, public servants, and traders. Data collected include socio-economic characteristics of the respondents, egg consumption level and pattern of consumers, consumers' preference for the egg types (chicken and quail eggs), relative importance of egg to the respondents, limitations to egg consumption by consumers, factors influencing consumers' choice of egg, respondents' perception of the different egg types.

Sensory Evaluation

This was conducted using a 20 member trained panel according to the procedure of AMSA (1995). The taste panelists were drawn from students and workers in the University of Ibadan who were regular consumers of both eggs (Chicken and Quail). Prior to the evaluation, eggs were purchased from a reputable farm in Ibadan; the eggs were freshly laid and were carefully washed so that there was no contamination from the farm and during handling. Eggs samples were cooked using moist cooking to an internal temperature of 72 ºC with a thermometer (110 ºC) inserted into the eggs for 15 minutes in labeled polythene bags, then cooled, sliced uniformly and presented sequentially to the panelists on clean saucers ensuring that samples from each treatment was evaluated independently. The panelists rated the samples on a 5-point hedonic scale in which 1 = dislike very much and 5 = like very much for texture, taste, and overall acceptability. Data were subjected to descriptive statistics and Chi square.

RESULTS

Socio-economic characteristics

The socio-economic characteristic of the respondents as it influenced consumption and preference for eggs in the study area are shown in Table 1. Study showed that 87% of the respondents were Yoruba, 10% Igbo and 3% Hausa; 60.50% of the respondents were male, 39.50% female, 46.50% single, 52.00% married,1% widowed and 0.50% divorced, Also, 63.64% of the respondents were Christians, 35.35% Muslims, 0.51% traditional worshippers and others. Also, 16.08% of the respondents were civil servant, 3.02% farmers, 19.60% artisans, 10.05% transporters, 15.08% traders, 28.14% students and other occupation 8.04%. Similarly, the minimum age of the respondents was 14 years while the maximum was 46 years. The respondents in the study area were mostly youths and decisions takers. The average monthly income of the respondents revealed that 42.0% earns between ₦10001- ₦100000, 4.0% between ₦100001-₦200000, 2.0% above ₦200000, 8.5% below ₦10000 and others not specified were 43.5%.

Table 1: Socio-economic characteristics of the respondents.

S/N	Total	Characteristics		Frequency	Percentage (%)
1.		Tribe	Yoruba	174	87.0
			Igbo	20	10.0
			Hausa	6	3.0
	Total			200	100
2.		Sex	Male	121	60.5
			Female	79	39.5
	Total			200	100
3.		Ages (years)	14-25	43	21.5
			26-35	84	42.0
			36-45	47	23.5
			46 and above	26	13.0
	Total			200	100
4.		Marital status	Single	93	46.5
			Married	104	52.0
			Divorced	1	0.5
			Widowed	2	1.0
	Total			200	100
5.		Occupation	Civil service	32	16.08
			Farming	6	3.02
			Artisan	39	19.60
			Transport service	20	10.05
			Trading	30	15.08
			Student	56	28.14
			Others	16	8.04
	Total			199	100
6.		Religion	Christianity	126	63.64
			Islam	70	35.35
			Traditional	1	0.51
			Others	1	0.51
	Total			198	100
7.		Average income (₦)	Below 10000	17	8.50
			10001- 100000	84	42.00
			100001-200000	8	4.00
			Above 200000	4	2.00
			Others	87	43.50

The consumers' perception of commercial chicken and Japanese quail eggs is shown in Table 2. All respondents' (200) consumes both Japanese quail and commercial chicken eggs. It was observed that 100% of the respondents' consumes egg. About 95% of the respondents buy eggs while 5% of the respondents do not buy egg, 97.50% of the respondents consumes chicken egg more than Japanese quail egg, while 8.63% consumes quail eggs more than chicken eggs. Also, 72.11% of the

respondents preferred chicken eggs to quail egg while 27.89% preferred quail egg to chicken egg. The 94.42% of the respondents' stored their eggs in a ventilated area while 5.58% of the respondents' do not. Only 81.36% of the respondents would consume quail egg if educated on its benefits, while 18.64% will not consume it. About 55.67% of the respondents' will consume more eggs with increased income while, 44.33% will not consume more even when their income is increased. Moreover, 55.05% of the respondents' will consume more eggs if the price of egg reduces while 44.95 of the respondents' will not consume more eggs with price reduction.

The frequency of eggs consumption by the respondents is shown in Table 3; 27.50% of the respondents ate eggs once in a week, 31.50% of the respondents ate egg at least twice a week, 24.00% of the respondents ate eggs once in a while and 17.00% consumed eggs daily. In Table 4, 33.33% of the respondents' purchased their eggs from poultry farm, 49.49% from market, 13.13% from hawker, 2.53% gets egg as gifts and 1.53% purchased their eggs from other sources. Table 5 shows that 23.00% of the respondents' consumes an egg/day, 31.00% of the respondents' ate 2eggs/day, 36.50% of the respondents' eats 3eggs/day and 63.50% of the respondents' do not consume eggs daily.

Table 2: Importance of egg to respondents

Question	YES	N0
Eat egg	200	-
Buy egg	190	10
Preference of one egg over the other	137	53
Store egg in ventilated area	186	11
If quail egg is available would you like to consume it	162	32
If educated on quail benefits would you like to consume it	96	22
Consume more eggs if income increases	108	86
Consume if egg price reduces	109	89

Table 3: Frequency of respondents eggs consumption.

Question: how Often do you eat egg?	Frequency	Percentage (%)
Once a week	55	27.50
At least twice a week	63	31.50
Once in a while	48	24.00
Daily	34	17.00
Total	200	100

Table 4: Distribution of eggs supply locations

Question: where do you get your eggs	No. of respondents	Percentage (%)
Poultry farm	66	33.33
Market place	98	49.49
Hawker	26	13.13
Gift	3	2.53
Others	3	1.52
Total	198	100

Table 5: Distribution of respondent's daily eggs consumption

Question: How many eggs do you eat daily	Frequency	Percentage (%)
1	46	23.00
2	16	8.00
3	11	5.50
Not everyday	127	63.50
Total	200	100

It was shown that 11.28% of the respondents' cooked their eggs for twenty minutes, 29.72% cooked their eggs for fifteen minutes, 28.72% for ten minutes, 24.10 % five minutes and 6.67% of the respondents' use other durations in cooking eggs (Table 6). In Table 7, 29.74% of the respondents' stored their eggs for one week, 31.28% for two weeks, 20.00% for three weeks, 11.79% for four weeks, 2.05% for four weeks and above while 5.13% of the respondents' stores their eggs for specified number of weeks.

The respondents' distribution of preferred egg cholesterol is shown in Table 8, 60.50% of the respondents' preferred the cholesterol content in quail egg while 31.93% preferred chicken egg cholesterol content and 7.56% of the respondents' preferred both chicken and quail egg cholesterol content. Table 9 shows that 77.68% of the respondents assumed that commercial chicken egg has higher cholesterol than Japanese quail egg, while 21.43% assumed that Japanese quail egg has higher cholesterol content than commercial chicken egg while 0.89% of the respondents' assumed both egg species has high cholesterol content.

In Table 10, it was revealed that 76.80% of the respondents stored their egg with egg tray, while 15.46% stored their egg with bowl, 4.64% stored their egg with bucket while 3.09% stored their eggs using other medium. It was observed that 68% of the respondents' strongly agreed that quail egg tastes better than chicken egg, while 7% strongly decided that quails egg taste better than chicken egg (Table 11). However, 27% of the respondents' agreed that the non-attractive nature of quail egg puts consumers off its consumption and (15.5%) strongly decided this. The 44.5% of the respondents strongly agreed that quail egg was more nutritious compared to chicken egg while 4% disagreed. Also, 41.5% of the respondents agreed that it was difficult to come by quail egg than chicken egg while 0.5% strongly agreed to this. The 55.50% of the respondents strongly agreed that quail egg was healthier compared to chicken egg while 3% strongly disagreed, and 36.5% of the respondents strongly agreed that chicken egg was more palatable than quail egg, 13.5% agreed to this, while 28.5% were undecided, 14.5% disagreed and 7% of the respondents' strongly disagreed that Japanese quail egg was more palatable compared with commercial chicken egg (Table 11).

In Table 12, chi- square analysis on the effect of age on consumers' perception about quail eggs said to be healthier than chicken egg cross tabulated was positive but no significant relationship (χ^2= 17.650) as to whether quail eggs was healthier than commercial chicken eggs, Table 13 shows the result of chi- square analysis on the effect of increase income on daily consumption of eggs which gave a significantly positive relationships ($p<0.05$): χ^2= 6.575. Table 13 shows the result of chi- square analysis conducted on effect of consumers' preference of quail egg if available on accessibility of eggs cross tabulated, χ^2= 3.420 was not significantly different. Table 14 shows the result of chi- square analysis on the effect of cholesterol content of eggs on consumption, χ^2= 0.135 was significantly ($p<0.05$) different. The sensory evaluation of chicken and commercial quail eggs is presented in Table 15, no significant differences were observed in the texture of chicken and quail eggs ($P>0.05$). There was no significant ($p<0.05$) difference in commercial chicken (3.55) and Japanese quail egg taste, In terms of overall acceptability of egg samples, there was significant difference ($p<0.05$) between chicken and quail rated with (3.70) and (4.15) respectively as quail egg was better appreciated by most respondents than chicken

egg, as they were rated between dislike very much, intermediate and like very much by the respondents.

DISCUSSION

Socio-economic characteristics of the respondents

Most respondents in the study area were male in consonance with earlier observations (Eyo, 2007; Akinwumi *et al.*, 2011 and Tsegay, 2012) that there were more male respondents when similar survey were conducted in Niger-Delta, Ibadan, Ogbomosho and Ethiopia, respectively on consumers' perception of animal products. Result also revealed that most of the respondents were married. Also, 63.64% of the respondents were Christians, 35.35% Muslims, 0.51% traditionist and others 0.51%. This implied that most of the respondents were Christians. The occupation of respondents indicated that 16.08% of the respondents were civil servants, 3.02% farmers, 19.60% artisans, 10.05% transporters, 15.08% traders, 28.14% students and other occupations were 8.04%. Most of the respondents in the study area were students, and educated people. Similarly, the minimum age of the respondents was 14 years while the maximum was 46 years. It was further observed that respondents were mostly youths and active people that could take decisions. Also they were economically active. Monthly income range of the respondents indicated that 42.0% earned between ₦10001- ₦100000, 4.0% earned between ₦100001-₦200000, 2.0% earned above ₦200000, 8.5% earned below ₦10000 and others proportion not indicated were 43.50%. This showed that majority of them were high income earners.

Recent studies (Jacob *et al.*, 1998; Chukwuka *et al.*, 2011) showed that eggs are not harmful to human being, but rather contained useful nutrients which probably gave impetus to increased egg production. Study showed that respondent in the study area had personally purchased egg at one time or the other and were aware of nutritional value of eggs. About 95% of the respondents buy eggs while 5% of the respondents do not buy egg, which implied that most of the respondents in the study area often buy eggs. Evaluation reference of one egg over the other revealed that 97.50% of the respondents consumed chicken egg more than Japanese quail egg, which indicated that chicken egg was more consumed than quail egg in the study area, while 8.63% consumed quail eggs more than chicken eggs. Also, 72.11% of the respondents preferred chicken eggs to quail egg while 27.89% preferred quail egg to chicken egg. About 94.42% of the respondents' stored their eggs in a ventilated area while 5.58% of the respondents' do not; this implied that most of the respondents stored eggs in a ventilated area. Most 81.36% of the respondents would consume quail egg if educated on its benefits, while 18.64% would not consume it; this indicated that consumers' education on the nutrient benefits of consuming quail eggs will be very beneficial. Most (55.67%) of the respondents' would consume more eggs while, 44.33% would not consume eggs if their income increases. Thus, majority 55.05% of the respondents' would consume more eggs if the price reduces. Thus, egg price reduction may not be favourable as most consumers will not consume more.

Also, 27.50% of the respondents consume egg once in a week, 31.50% eat egg at least twice a week, 24.00% eat egg once in a while and 17.00% eat egg daily. 23.00% of the respondents ate an egg/day, 31.00% consumed 2 eggs/day, 36.50% 3 eggs/day and 63.50% do not consume eggs daily as earlier reported (IEC, 2011) that per capita eggs consumption in most countries varied between 2 to 4 eggs per week. Increase in egg consumption has been a slow process in most of the industrialized western countries over the past 20 years (IEC, 2011). In Canada, 15% of the respondents were reported to eat more eggs than a few years ago, mostly based on their opinion that eggs served as a good source of proteins (18%), healthy and nutritious (17%) easy, convenient to cook (15%); conversely, 30% of the respondents claimed to eat less eggs.

It was shown that 33.33% of the respondents purchased their eggs directly from poultry farm, 49.49% from market, 13.13% from hawkers, 2.53% obtained eggs as gifts and 1.53% purchased their eggs from other sources (Table 5). This revealed that most respondents buy eggs from market and those that consume eggs in the cafeteria were grouped under other sources. As shown in Table 6, 23.00% of the respondents' ate an egg daily, 31.00%, 2 eggs/day, 36.50% ate 3 eggs/day while 63.50% of the respondents' do not consume eggs daily this implies that most of the respondents in the study area do not consume egg daily.

It was observed that 11.28% of the respondents cooked their eggs for twenty minutes, 29.72% for

fifteen minutes, 28.72% for ten minutes, 24.10 % for five minutes and 6.67% of the respondents used other forms, thus most of the respondents in the study area cooked eggs for 15minutes (Table 7), this result contrasted the report of USDA (2006) that egg white coagulates between 144 °F and 149 °F and the yolk between 149 °F and 158 °F. Therefore, it may not be necessary to cook eggs until hard or rubbery to kill any bacteria that may be present. Whole eggs cooked until the white is set (completely coagulated and firm) and the yolk thickened (no longer runny but not hard) are considered to have met necessary safety time and temperature requirements within 2-3 minutes depending on temperature.

About 29.74% of the respondents' stored eggs for one week, 31.28% stored eggs for two weeks, 20.00% stored eggs for three weeks, 11.79% stored eggs for four weeks, 2.05% stored eggs for four weeks and above and 5.13% of the respondents' stored eggs above these weeks (Table 8), this revealed that most respondents stored eggs for two weeks from day of purchase to total consumption. There have been very few documentations on the effect of duration of storage on chemical and nutritional quality of eggs in the hot humid tropics of Brazil (Pasquoal *et al*., 2012) and Nigeria (Dudusola, 2009; Onasanya and Ikeobi, 2013; Akinola and Ibe, 2014). However, Ogunwole *et al*. (2015a, b) demonstrated that the depreciation of chicken egg quality characteristics with duration of storage was dependent on nutrition especially the supplemental vitamin-mineral premixes, chicken rearing system and method of storage. Also, reports (Ogunwole *et al*., 2015a, b) surmised that egg quality deteriorated significantly after a week of storage, thus most egg consumed by respondents in the study were not be in their prime forms

The respondents distribution of their preferred egg cholesterol as shown in Table 9 revealed that 60.5% preferred the cholesterol content in quail egg while 31.93% preferred chicken egg cholesterol content and 7.56% preferred both chicken and quail egg cholesterol content. Weber *et al.* (2002) remarked that respondents' risk factor was not homogenous and that it varied across all content domains, such as financial, health/safety, recreational, ethnical and social decisions. In other words, respondents risk preferences is domain-specific instead of constant. Therefore, consumers risk preferences factor in the domain of healthy/safety and recreation decisions might affect their preference for eggs due to cholesterol content in eggs. Some consumers, especially the aged respondents, misconstrued information on eggs cholesterol as documented by Guyonnet (2011) that Consumers generally do recognize peculiar benefits in eggs, In Australia, 95% of the respondents agreed that eggs are part of a healthy diet, 93% that egg was a great source of proteins and 84% that eggs were high in vitamins and minerals. Only 71% of the respondents agreed that "Eggs Consumption do not increase the risk of heart disease" and 36% attributed a "large to moderate effect of egg consumption on bad cholesterol". In Canada, 85% of the respondents agreed that eggs are excellent sources of protein and 16% agreed with the statement "I am concerned about cholesterol". In the Netherlands, 45% disagreed that more than 2 eggs per week was bad for one's health, 23% agreed that eggs have no phobia for egg cholesterol.

It was shown that 77.68% of the respondents assumed that commercial chicken egg has higher cholesterol than Japanese quail egg, while 21.43% assumed that Japanese quail egg has higher cholesterol content than commercial chicken egg, and 0.89% assumed both egg species has high cholesterol content (Table 10). This implied that most of the respondents in the study area perceived that commercial chicken has higher cholesterol than quail eggs.

Most of the respondents stored their egg with egg tray, while few used bowl, 4.64% used bucket and others medium for storage were 3.09%, which indicated that most respondents' store their eggs in egg-tray under room temperature (Table 11).

Table 6: Time of cooking egg by respondents

Time (minutes)	Frequency	Percentage (%)
20 minutes	22	11.28
15 minutes	57	29.23
10 minutes	56	28.72
5 minutes	47	24.10
Others	13	6.67
Total	195	100.00

Table 7: Distribution of duration of egg storage of respondents

Week(s)	Frequency	Percentage (%)
1	58	29.74
2	61	31.28
3	39	20.00
4	23	11.79
4 weeks and above	4	2.05
Others	10	5.13
Total	195	100

Table 8: Respondent's distribution of preferred cholesterol content in egg

Preferred cholesterol	Percentage (%)
Chicken	31.93
Quail	60.50
Both	7.56
Total	100.00

Table 9: Respondent's distribution on higher cholesterol content

Higher cholesterol	Percentage (%)
Chicken	77.68
Quail	21.43
Both	0.89
Total	100.00

Table 10: Respondents medium of storing of eggs

Medium of storage	Frequency	Percentage %
Egg tray	149	76.80
Bucket	30	15.46
Bowl	9	4.64
Others	6	3.09
Total	190	100

Table 11: Perception of respondents on Quail and Chicken eggs

Consumers perception about Quail and Chicken eggs	Strongly Agreed	Agreed	Undecided	Decided	Strongly decided
Quail egg taste better than chicken egg	68(34.0)	22(11.0)	62(31.0)	34(17.0)	14(7.0)
The non- attractive nature of Quail egg put one off its consumption	41(20.5)	54(27.0)	21(10.5)	53(26.5)	31(15.5)
Quail egg is more nutritious than chicken egg	89(44.5)	26(13.0)	68(34.0)	8(4.0)	9(4.5)
It is difficult to come by Quail egg than Chicken egg	1(0.5)	83(41.5)	11(5.5)	40(20.0)	20(10.0)
Quail egg is said to be healthier than chicken egg	103(51.5)	47(23.5)	34(17.0)	10(5.0)	6(3.0)
Chicken egg is more palatable than Quail egg	73(36.5)	27(13.5)	57(28.5)	58(14.5)	14(7.0)

Figures in parentheses are the percentage response

It was shown in Table 12 most of the respondents' strongly agreed that quail egg tastes better than chicken egg while few strongly decided that quails egg taste better than chicken egg, this revealed that most of the respondents preferred the taste of Japanese quail egg to commercial chicken eggs. However, most of the respondents' agreed on the aggregate that the non-attractive nature of quail egg puts consumers off its consumption and few disagreed to this. Few respondents therefore liked quail because of its non- attractive and most of the respondents assumed that the non- attractiveness of quail put them off its consumption. Only 44.5% of the respondents strongly agreed that quail egg is more nutritious than chicken egg while 4% disagreed which indicated that most of the respondents assumed quail egg to be more nutritious than chicken egg. Also, respondents agreed that it was difficult to come by quail egg than chicken egg while some strongly disagreed to this, which implied that chicken egg was more accessible, compared to quail egg and that if quail egg was readily available and accessible most respondents would consume it. Only 55.50% of the respondents strongly agreed that quail was healthier than chicken egg while 3% strongly disagreed while 36.5% of the respondents perceived Japanese quail egg to be more palatable than commercial chicken egg.

There was a significant relationship between the effect of age and consumers perception of quail egg. Quail egg was said to be healthier than chicken egg using a Chi-square analysis. This revealed the perception of aged people about cholesterol content in chicken egg, and affirmed the therapeutic and medicinal properties claim of egg from quail to commercial chicken egg.

Chi-square analysis of the effect of increased income on daily eggs consumption showed positive relationship which revealed that with increase income, respondents would consume eggs on daily bases. The effect of consumers' perception on consumption of quail eggs accessibility showed that there was no positive relationship between egg consumption and accessibility, therefore did not have any effect on availability of quail eggs as shown in Table 14.

In Table 15, Chi-square analysis on the effect of cholesterol content on egg consumption showed that there was relationship between cholesterol content consumption which implied that respondents had

phobia for eggs due to the egg cholesterol content and the anticipated health risk. It could be emphasized that consumers had little knowledge of nutrition and the benefits delivered by functional foods. They were also very skeptical about the information provided, especially by food manufacturers or producers as reported by (Verbeke, 2008; Síro *et al*., 2008; and Landström *et al*., 2009).

The sensory characteristics of chicken and quail eggs as presented in Table 16 indicated that quail egg tasted better than chicken eggs contrary to earlier observations (Eyo, 2007; Akinwumi *et al.*, 2011) that chicken egg was tastier than quail egg. In terms of overall acceptability of eggs by the respondents, quail egg was better appreciated than chicken egg by the panelists.

Table 12: **Effect of Age on consumers perception about Quail eggs is said to be healthier than Chicken egg cross tabulated**

Parameters	Chi-square Value	Degree of freedom	Significant value
Effect of age on consumers perception of egg	17.650[a]	16	0.345

Table 13: **Effect of increase income on daily consumption of eggs cross tabulated**

Parameters	Chi-square Value	Degree of freedom	Significant value
Increased income on Daily consumption of egg	6.575[a]	3	0.087

Table 14: Effect of consumers' preference on consumption of quail egg if available on accessibility of eggs cross tabulated.

Parameters	Chi-square Value	Degree of freedom	Significant value
	3.420[a]	5	0.636

Table 15: Effect of cholesterol content on consumption of egg cross tabulated

Parameters	Chi-Square Value	Degree of freedom	Significant value
Preferred cholesterol content On consumption of egg	0.135[a]	6	0.084

CONCLUSION AND RECOMMENDATION

Commercial chicken egg was more consumed, more preferred and more accessible by the respondents in the study area compared to Japanese quail egg. The main reasons for consuming quail eggs by other respondents were perceived nutritive quality, health implications *vis a vis* preferred cholesterol content and palatability compared to commercial chicken egg. However, availability, income, price, taste among others influenced the choice of more consumed and most preferred egg. Sensory panelist preferred quail egg to chicken egg. There was a clear difference between consumption pattern of eggs and preferences of egg among respondents' in Akinyele Local Government Area, Ibadan, Oyo State, Nigeria.

CONFLICT OF INTEREST

Authors have declared that no conflict of interest exists.

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