



Evaluation of nutritive value and microbial quality in selected street foods and the socioeconomic status of vendors and consumers

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Roll No: 0119/03

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**A thesis submitted in the partial fulfillments for the degree of
Master of Science in Biochemistry**

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JUNE 2020

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JUNE, 2020

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I dedicate

this small piece of work

to my beloved parents and sisters

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Table of Contents

Chapter	Title	Page
	Authorization	ii
	Acknowledgements	v
	List of Tables	xii
	List of Figures	xiv
	List of Annexes	xv
	List of Abbreviations	xvi
	Abstract	xviii
Chapter I	Introduction	1
Chapter II	Review of Literature	4
	2.1 Features of street foods	4
	2.2 Introduction to some bangladeshi street foods	5
	2.2.1 Samosa	5
	2.2.2 Singara	5
	2.2.3 Piaju	5
	2.2.4 Beguni	5
	2.2.5 Paratha	5
	2.2.6 Biriani	5
	2.2.7 Fuchka	6
	2.2.8 Alu chop	6
	2.2.9 Chona-muri	6
	2.2.10 Dal puri	6
	2.2.11 Chotpoti	6
	2.2.12 Roll	6
	2.3 Street foods diversity	9
	2.4 Profile of vendors	9
	2.5 Consumers of street food	10
	2.6 Criteria for choice of vendor	10
	2.7 Street food buying behavior	11

	2.8 Advantages of the street food trade.....	11
	2.9 Social and economic importance	12
	2.10 Association of socio-economic status with street food consumption.....	12
	2.11 Nutritional contribution of street foods	13
	2.11.1 Nutritional composition.....	13
	2.12 Negative connotations of the street food trade.....	17
	2.13 Hygiene and safety of street foods.....	17
	2.14 Occupational hazards of street food vendors	18
	2.15 Contamination of street food.....	18
	2.16 Presence of microorganisms in different street food of Dhaka,Bangladesh.....	19
	2.17 Conclusions	21
Chapter III	Materials and Methods.....	22
	3.1 Study area	22
	3.2 Study period.....	23
	3.3 Participants of the study.....	23
	3.4 Sample size	23
	3.5 Study design	23
	3.6 Survey (Part 1)	25
	3.6.1 Surveys tools	25
	3.6.1.1 Interview.....	25
	3.6.1.2 Observations.....	25
	3.6.1.3 Photography	26
	3.6.1.4 Questionnaire survey pattern	26
	3.6.1.4.1 Questionnaire for vendors	26
	3.6.1.4.2 Questionnaire for consumers	26
	3.6.2 Types of street food in Chattogram city	27
	3.6.3 Street food preferences	27
	3.6.4 Demographics profile of vendors-respondents	27
	3.7 Nutritional analysis (Part 2)	28

3.7.1 Collection of food sample	28
3.7.2 Preservation of food sample	28
3.7.3 Weigh of food and detect the ingredients used in street and frozen food.....	28
3.7.4 Proximate analysis of food sample	30
3.7.4.1 Determination of moisture content	30
3.7.4.2 Determination of ash content	30
3.7.4.3 Crude protein determination.....	31
3.7.4.4 Crude fat determination.....	32
3.7.4.5 Crude fiber determination	33
3.7.4.6 Determination of total carbohydrates	34
3.7.5 Determination of mineral contents.....	34
3.7.5.1 Determination of sodium (Na ⁺)	35
3.7.5.2 Determination of chloride ion (Cl ⁻)	36
3.7.5.3 Determination of calcium (Ca ²⁺)	36
3.7.5.4 Determination of magnesium (Mg ²⁺)	37
3.7.5.5 Determination of phosphorus (P ³⁻)	37
3.7.5.6 Determination of potassium (K ⁺).....	38
3.7.5.7 Determination of iron (Fe ²⁺)	38
3.7.5.8 Determination of zinc (Zn ²⁺).....	39
3.7.5.9 Determination of copper (Cu ⁺)	39
3.7.5.10 Determination of manganese(Mn ²⁺)	40
3.7.5.11 Determination of selenium(Se ²⁻)	41
3.7.6 Determination of vitamin contents.....	43
3.7.6.1 Determination of riboflavin (vit-B2)	43
3.7.6.2 Determination of retinol and beta carotene (Vit-A) using TFA	44
3.7.6.3 Determination of α - tocopherol (Vit-E)	46
3.8 Microbial analysis (Part 3)	47
3.8.1 Total procedure for identify the Salmonella and E.coli.	47
3.8.1.1 Collection and preservation of sample	47
3.8.1.2 Preparation of growth media	49

3.8.1.2.1 Buffered peptone water	49
3.8.1.2.2 Brain heart infusion broth (used for prepare stock solution)	49
3.8.1.3 Preparation of culture media for isolation of bacteria .	49
3.8.1.3.1 Macconkey agar	49
3.8.1.3.2 Brilliant green agar (BGA)	49
3.8.1.4 Isolation of associated bacteria from collected samples.....	49
3.8.1.5 Long-term storage of associated bacteria.....	50
3.8.1.6 Statistical analysis	51
Chapter IV Results	52
4.1 Results of socio-economic survey.....	52
4.1.1 Street foods price	52
4.1.2 Profile of street food vendors	52
4.1.3 Consumer preference of street food	54
4.1.4 Customer satisfaction with street foods.....	54
4.1.5 Types of street food consumers.....	54
4.1.6 General hygiene and health of the vendors	55
4.1.7 Inspection of vendors activity and nature of vending stalls.....	55
4.1.8 Consumers opinion on street food	56
4.2 Results of nutritive value	60
4.2.1 Results of overall weight distribution (frying and drying weight) of different types of street and frozen food.....	60
4.2.2 Comparison of overall weight distribution between street and frozen food.....	60
4.2.3 Proximate value of selected street food and commercial frozen food.....	61
4.2.4 Comparison of proximate content between street and frozen food (singara,samosa,roll)	62
4.2.5 Mineral value of selected street food and commercial frozen food.....	63

	4.2.6 Comparison of mineral content between street and frozen food (singara,samosa,roll)	64
	4.2.7 Contribution of different vitamin content in street and frozen food.....	66
	4.2.8 Comparison of different vitamin content between street and frozen food.....	67
	4.3 Results of microbiological quality	69
	4.3.1 Results of isolation of bacteria from street vended food	69
Chapter V	Discussion	70
	5.1 Socio-economic survey based discussion.....	70
	5.1.1 Most preferred street food and their consumer and price.....	70
	5.1.2 Demographic profile of vendors	71
	5.1.3 Gross observation about hygiene	72
	5.1.4 Consumers opinion	73
	5.2 Microbiological quality based discussion.....	74
	5.2.1 Presence of <i>Escherichia coli</i> and <i>Salmonella</i> in street and frozen food.....	74
	5.3 Nutritional composition based discussion	75
	5.3.1 Overall weight distribution.....	75
	5.3.2 Proximate profile.....	75
	5.3.3 Minerals profile	76
	5.3.4 Vitamins profile	77
Chapter VI	Conclusion	79
Chapter VII	Strength & Weakness	81
Chapter VIII	Recommendations & future perspectives	82
Chapter IX	References	84
Chapter X	Appendices	92
	Brief Biography	112

List of Tables

Table	Title	Page
Table 2.1	List of street food around the world.....	8
Table 2.2	Main criteria for choice of vendor (multiple responses possible)	11
Table 2.3	Nutritional composition (energy and macronutrients) of the street food samples evaluated by proximate analysis, per serving	14
Table 2.4	Nutritional composition (fatty acid profile) of the street food samples evaluated by proximate analysis, per serving(mean values)	15
Table 2.5	Average mineral & vitamin contents of typical street food dishes in uganda, kampala and jinja districts.....	16
Table 2.6	Reasons for the foods to be unsafe	18
Table 2.7	Presence of different pathogens in the street food samples of Dhaka city.....	20
Table 3.1	Sodium (Na ⁺) determination	35
Table 3.2	Chloride ion (Cl ⁻) determination	36
Table 3.3	Calcium (Ca ²⁺) determination	36
Table 3.4	Magnesium (Mg ²⁺) determination	37
Table 3.5	Phosphorus (P ³⁻) determination	37
Table 3.6	Potassium (K ⁺) determination	38
Table 3.7	Iron (Fe ²⁺) determination	38
Table 3.8	Zinc (Zn ²⁺) determination	39
Table 3.9	Copper (Cu ⁺) determination	39
Table 3.10	Manganese (Mn ²⁺) determination	40
Table 3.11	Selenium (Se ²⁻) determination	41
Table 3.12	Riboflavin (Vit-B2) determination	43
Table 3.13	Beta carotene determination.....	44
Table 3.14	Retinol determination	44
Table 3.15	α - tocopherol (Vit-E) determination	46
Table 3.16	Requirement for <i>Salmonella</i> spp. and <i>E.coli</i> isolation	47
Table 3.17	Composition of growth media and culture media.....	48
Table 4.1	Price of street food (N=53)	52
Table 4.2	Demographic profile of the vendors (N=40)	53

Table 4.3	The most preferred street foods of consumer (N=40)	53
Table 4.4	Index of importance of main reasons for buying street foods and preference of street food(N=40)	54
Table 4.5	Types of street food consumers at different location in Chattogram city (N=9)	55
Table 4.6	Health and hygienic environmental condition of vendors (N=40) ..	57
Table 4.7	Vendors observation checklist (N=40)	58
Table 4.8	Interview guide for consumers (N=40)	59
Table 4.9	Overall weight distribution of different types of street and frozen food such as singara, roll and samosa.....	60
Table 4.10	Comparison of overall weight distribution (frying and drying weight) between street and frozen food.....	61
Table 4.11	Proximate composition of singara,samosa,roll in street and frozen food	62
Table 4.12	Difference between proximate composition of street and frozen food (singara,samosa,roll)	63
Table 4.13	Mineral composition of singara,samosa,roll in street and frozen food	65
Table 4.14	Difference between mineral composition of street and frozen food (singara,samosa,roll)	66
Table 4.15	Vitamin composition of different types of street and frozen food (singara,samosa,roll)	67
Table 4.16	Comparison of different vitamin content between street and frozen food (singara,samosa,roll)	68
Table 4.17	Presence of <i>E.coli</i> & <i>Salmonella</i> percentge in street and frozen food	69

List of Figures

Figure	Title	Page
Figure 1	Bangladeshi street foods.....	7
Figure 2	Geographical distribution of the study area	22
Figure 3	Study planning	24
Figure 4	Flow sheet for food sample preparation.....	29
Figure 5	Calibration curve for the determination of manganese	41
Figure 6	Calibration curve for the determination of selenium.....	42
Figure 7	Calibration curve for the determination of beta carotene	45
Figure 8	Calibration curve for the determination of retinol.....	45
Figure 9	Flow chart of preparation of bacterial stock	50
Figure 10	Flow chart of isolation process of bacteria	51
Figure 11	Different types of street food in Chattogram.....	103
Figure 12	Socio-economic survey of vendors and consumers.....	104
Figure 13	Nutritional value analysis of food	105
Figure 14	Microbial quality analysis	106

List of Annexes

Annex	Title	Page
Annex 1	Reasons behind choosing the place	92
Annex 2	Selection of food sample	93
Annex 3	Date of interview	94
Annex 4	List of Street food and their price	95
Annex 5	Street food list on different location and typical consumers of street food	96
Annex 6	The most preferred street food.....	98
Annex 7	Demographics profile of vendors	99
Annex 8	Weight of street food and frozen food sample.....	101
Annex 9	Ingredients and methods of preparation for street food & Frozen food	102

List of Abbreviations

Abbreviation	Elaboration
ANOVA	Analysis of variance
AOAC	Association of Official Analytical Chemists
BP	Boiling Point
CAL. Standard	Calibration Standard
CHO	Carbohydrate
Conc	Concentration
CP	Crude protein
Di-Br-PAESA	4-(3,5-Dibromo-2-pyridylazo)-N-ethyl-N-(3-sulphopropyl)aniline/ monosodium salt, monohydrate
E. coli	<i>Escherichia coli</i>
EI	Energy Intake
FAO	Food and Agriculture Organization of the United Nations
g	Gram
g/l	Gram per liter
Hrs	Hours
IFPRI	International Food Policy Research Institute
lbs	Pound-Mass or Pound
Mc	Moisture content
mg / dl	Milligrams per decilitre
mg/l	Milligrams per liter
min	Minute
ml	Millilitre
mmol / L	Millimoles per liter
MUFA	Monounsaturated fatty acids
n-3 fatty acid	Omega-3 fatty acids
n-6 fatty acid	Omega-6 fatty acids
Nitro-PAPS	2-(5-Nitro-2-pyridylazo)-5-(N-propyl-3-sulfopropylamino) / phenol disodium salt , dihydrate
nm	Nanometer
PUFA	Polyunsaturated fatty acids

R.T	Retention time
SFA	Saturated fatty acids
Spp	Species plural
SPSS	Statistical Package for the Social Sciences
TFA	Trans Fatty Acids
TFA	Trifluoroacetic Acid
US\$	U.S. currency
WHO	World Health Organization
%	Percent
% EI	Percentage of energy intake
(% w/v)	Percent Weight/Volume
°C	Degree Celsius
µg	Microgram
µg / dl	Micrograms per deciliter
µg/ml	Micrograms per milliliter

Abstract

Street foods are very much popular because of tastes and varieties of foods, easily accessible, cost effect and appetizing. The present study aim was to assess the socio-economic status of the street food vendors and consumers, nutritive value and microbial status in selective street foods. This was conducted at 9 places in Chattogram Metropolitan City (CMC) for period of January, 2019 to June, 2020 among 40 vendors and 40 consumers and laboratory analyses were performed at “Research Laboratory” under the department of Physiology, Biochemistry and Pharmacology, Chattogram Veterinary and Animal Sciences University, Chattogram, Bangladesh. Among the vendors, 90% were male and 10% were female. Of them, 37.5% had a primary school qualification whereas 32.5% was illiterate. Almost 55% of the vendors earned 6000 to 10000 BDT per month. We recorded 53 types of street foods in CMC with a price ranged between Tk. 2 (Piaju/piece) to Tk. 30 (Briani/plate). The most preferred street foods by consumers are roll (35%), beguni (25%), piaju (22.5%), singara (22.5%), samosa (22.5%), alu chop (20%), and fuchka (15%). Almost 70% of the studied consumers consume street food every day. Hundred percent vendors had no training on food hygiene. Furthermore, 3 types of foods (singara, samosa, roll) from street and frozen were collected and analyzed. Street roll, samosa and singara, sequentially, contained higher amount of crude protein (10.85%), crude fat (27.20%) and ash content (2.80%) whereas, frozen singara, samosa and roll, respectively, contained higher amount of crude protein (10.70%), crude fat (26.61%) and ash content (2.69%). Higher amount of phosphorus content (70 mg/100g) was found in street samosa and higher amount of potassium content (689 mg/100g) was found in frozen roll. Vit-E content (7.60 mg/100g) was found higher in street singara while carotene content (10.42 mg/100g) was found higher in frozen singara. 50% of both street and frozen food samples contained *Escherichia coli* and nearly 34% street foods and 39% frozen foods found positive with *Salmonella* spp. In summary street food business offers a unique opportunity to street vendors and low-income people for their livelihood. In order to maintain the benefits of street business need to develop a hygiene policy.

Keywords: Street foods, frozen foods, socio economic status, nutritive value, *Escherichia coli*, *Salmonella* spp.