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ASSESSMENT OF NUTRITIONAL STATUS AND SOCIO-ECONOMIC CONDITIONS OF TERRACOTTA ARTISANS OF PANCHMURA, WEST BENGAL

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ABSTRACT

The terracotta art owe a very ancient lineage and bear a long tradition of excellence and unique craftsmanship. Bankura has a rich cultural heritage of handloom industry and handicrafts. It is world famous for Baluchari textile, conch shell carving, bell metal engraving and exquisite terracotta temples. The ethnicity, emblematic design depicting mythological folk-tales, rural life styles represents a culmination of artistic expressions. Though this craft is enjoying a ready market both at home and abroad, there are some grey areas demanding immediate attention. This paper attempts to explore the nutritional status, socio-economic background of terracotta artisans of Panchmura. Terracotta Workers numbering 25 in the age group of 17-66 years who were willing to co-operate for the study were selected by convenient sampling method. The assessment of nutritional status revealed presence of malnutrition (16 %) among them. The mean height, weight, Body mass Index and Waist/Heap Ratio of the population were 1.57 ± 0.11 m, 53.32 ± 8.19 Kg, 21.46 ± 3.36 & 0.94 ± 0.04 respectively. The age-wise distribution of the workers revealed that majority (47.37 %) of the males belonged to the age group of 18-35 years while most of the females (50 %) were in the upper-age group of above 45 years. The gender-wise distribution of the artisans revealed that mass of the population (76 %) was represented by males. Joint family (64 %) type still prevails in the community. 56 % of the workers lived in large-size family system. The literacy rate (92 %) among terracotta artisans was quiet encouraging. The economic profile disclosed that the average monthly household income (Rs. 7320) and standard of living of the workers are very poor.

INTRODUCTION

Art is the outcome of human cognition and imagination. It is not only the manifestation of human creative skill but also the medium of communication and expression of their emotions, ideas and different aspects of life (Dutta, 2013). The word 'terracotta' means 'baked clay'. The terracotta art owe a very ancient lineage in India. Terracotta figurines were found from various Pre-Harappan sites in Baluchistan region (Stein, 1931). The terracotta tradition was continued in good measures during the urban phase of Harappan civilization (Jayaswal *et al*., 1986). People have relied on terracotta throughout the ages as the manifestation of their aesthetic sense and overall existence. During the Mauryan period, terracotta art showed improvement in its style. The use of incisions, punches and appliqué pellets were common for ornamentation of terracotta figurines in northern and western India. In the final phase of Sunga period, terracotta art received an upsurge in its refinement, modeling and perfection. The Gupta period, the Golden Age of Indian history, showed a sudden development in every sphere of human activity including terracotta crafting. There is prolific presence of terracotta art in West Bengal starting from Chalcolithic period and continuing up to Post-Gupta period. In Medieval period, Bishnupur was the capital of Malla dynasty and terracotta craft flourished during this era under the patronage of Malla kings (Ganguly and Ganguly, 2015). It then gradually spread from Bishnupur to other places crossing the territorial boundary (Dasgupta *et al*., 2009). The terracotta temples of Bishnupur are the best specimen of the classical style of Bengal architecture. There are various floral and geometric designs such as scenes from Purana, Ramayana, Mahabharata on the terracotta panels. It represents a culmination of different types and forms of artistic expressions (Biswas, 1981).

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The plaques of terracotta give us a glimpse of the early culture of the people of Bengal. It is estimated that around 1 % of the total population of Bankura district are involved in this sector (Government of West Bengal, 2015). The craft is mainly practiced by the people of the Kumor caste. The sector is presently beset with several problems, such as rising prices of the manufacturing products, inadequate working capital, , transport of raw material from outside, lack of suitable training facilities, weak marketing strategy, low wages of the hard working artisans and above all, competitive global market (Satpathi, 2011). Nutritional deficiency is another common concern of this community. The rigorous workload further worsens the situation. The underdeveloped socio-economic circumstance and lack of public health concern make their situation more vulnerable. There is no such work on the socio economic and nutritional status of the terracotta workers of Bankura and hence the study was undertaken with the following objectives to assess the nutritional status of the artisans and to study the socio-economic condition of the workers.

MATERIALS AND METHODS

Study Area

Bankura, a place of crafts and culture, has a rich historical past with plentiful natural inheritance. Based on the maximum availability of terracotta workers Panchmura was selected as the study area (Figure 1). Panchmura (22. 9667 °N, 87.1667 °E) is a medium-sized village situated under Panchmura Gram panchayat (West Bengal, 2009). The Panchmura village has population of 3719 of which 1854 are males and 1865 are females (Census, 2011). It has rich tradition of terracotta crafting and the hereditary skill has passed down from generation to generation. Almost 21.43% of the total numbers of families are involved in terracotta crafting (Dutta, 2013). They are essentially Kumor by caste. Only the Kumbhokar people of the village practices the Craft and they also provide formal training to other people (Shaw, 2011). This village follows linear and cluster settlement patterns. It has both mud-built huts and concrete houses. The literacy rate of Panchmura village was higher (76.65 %) compared to 76.26 % of West Bengal. Terracotta workers numbering 25 in the age group of 17-66 years who were willing to co-operate for the study were selected from those places by convenient sampling method.

Collection of Data

Sunny atmosphere and moderate temperature are considered to be the most suitable condition for terracotta craft production. The present study was conducted through a field survey during Oct-Nov, 2015 which was the appropriate time for this craft cultivation. The study is mostly based on primary data sources. Terracotta workers numbering 25 were screened as respondents by convenient sampling method. Secondary data was collected from different research journals, books and publications of various government agencies. The statistical analysis of data was performed by using Microsoft Office Excel software.

Anthropometric assessment of nutritional status

Anthropometry is the science which deals with the measurement of size, weight, and proportions of the human body.

Height

Height is often affected by long-term nutritional deficiency and is regarded as an index of malnutrition (NIN, 2009). Height was calculated using a vertical measuring rod with headpiece without wearing footwear. The workers were made to stand on flat surface, heels together and head positioned so that the line of vision was at right angles to the body. The arms hang freely by the side where as buttocks and heels are in contact with vertical measuring rods. The individuals were asked to take breaths in deeply and maintain a fully erect position. The movable headpieces brought onto the topmost point on the head with sufficient pressure to compress the hair. An average of three successive measurements was taken, final measurement are recorded to the nearest of 0.1cm.

Weight

Body weight is the most widely used method to appraise the growth and development of an individual (NIN, 2009). Digital weighing balance was used to measure the body weight of the respondents. Zero error of the scale was checked, the scale was then calibrated and measurements were taken under basic conditions. The respondents were made to stand on the platform of the balance without shoes, with normal clothing and without touching anything else. The measurement was ascertained to the nearest of 0.50 kg.

Body Mass Index (BMI)

Body Mass Index (BMI) or Quetelet`s Index is a widely used parameter for estimating body fat mass and an exact reflection of body fat percentage (Umaito, 2006; Keys *et al.,* 1972). It gives a simple numeric measure of a person's thickness or thinness that is commonly used to classify underweight, overweight and obesity among adults (WHO, 2015). WHO Expert Committee recommended the use of BMI for the evaluation of the nutritional status of the population. The formula Weight (kg) / Height (m^2) was used to calculate BMI. Those values of the selected respondent were calculated and precisely categorized.

Waist/ Heap Ratio (W/H Ratio)

The W/H Ratio has been used as an indicator of health. Research shows that people with apple-shaped bodies face more health risks than those with pear-shaped bodies. W/H Ratio is used as a parameter of obesity, which in turn is a possible indicator of health status. The abdominal obesity is defined as a waist–hip ratio above 0.90 for males and above 0.85 for females (WHO, 2000).

Socio-economic survey

Selection of sample & preparation of questionnaire are the most significant part of the research. A schedule containing standardized questionnaire was developed by the researchers that have direct relevance to the society. The selected respondents were consulted to collect information on the socio-economic background of the terracotta artisans relating to age, sex, education, number of family members, income of the family etc.

Anthropometric Measurements

The workers were classified as underweight, normal, overweight and obese as per BMI. In the present study (Table 1 & Figure 2), Out of the total 25 respondents, 16 % of the workers were in the underweight (BMI≤18.5) category. Among them, 25 % were severely thin, 25 % were moderately thin and 50 % were with mild thinness. 76 % of the terracotta workers were with normal nutritional status. 8 % artisans were overweight and none of them was found to be obese. The mean height, weight, BMI and W/H Ratio of the population were 1.57 m, 53.32 Kg, 21.46 & 0.94 respectively (Table 2). The occurrence of malnutrition may be due to the inadequate diet, unhygienic working condition, rigorous workload and lack of public health concern.

Age

As a preface to an analytical study of the terracotta workers of Panchmura, a survey on the age distribution of the sample was carried out. It is useful to determine the proportion of work force among workers. The present study (Figure 3) showed the mere presence (4%) of under-age workers (< 18 years) among total workforce. The age-wise distribution of the workers revealed that majority (47.37 %) of the males belonged to the age group of 18-35 years where as most of the females (50 %) were of above 45 years. Among the 25 respondents surveyed, a majority (44 %) of the population corresponded to the age-group of 18-35 years and above 45 years as the efficiency is relatively higher at this age due to their agility & experience.

Table 1. The International Classification of underweight, overweight and obesity according to BMI

Sl. No.	Classification	BMI (Kg/m^2) Principal cut-off points	Number of Respondents	Percentage
1.	Underweight	<18.50	04	16
	Severe thinness	<16.00	01	25
	Moderate thinness	16.00 - 16.99	01	25
	Mild thinness	17.00 - 18.49	02	50
2.	Normal range	18.50 - 24.99	19	76
3.	Overweight	≥25.00		
	Pre-obese	25.00 - 29.99	02	8
4.	Obese	≥30.00	--	--
	Obese class I	30.00 - 34.99		
	Obese class II	35.00 - 39.99		
	Obese class III	≥40.00		
	Total		25	100

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

Table 2. The Statistical Assessment of Anthropometric Measurements

Parameter	Height (m)	Weight (Kg)	BMI	W/H Ratio
Mean	1.5744	53.32	21.4568	0.9412
Standard Error	0.021135121	1.638820714	0.67162284	0.00891291
Median	1.6	53	21.29	0.94
Mode	1.42	50	20.79	0.9
Standard Deviation	0.105675604	8.194103571	3.3581142	0.04456456
Sample Variance	0.011167333	67.14333333	11.276931	0.001986
Kurtosis	-1.064723976	1.411889572	0.99873852	0.75801799
Skewness	-0.392177429	-0.354940334	-0.4490851	0.99445871
Range	0.34	40	15.82	0.18
Minimum	1.38	31	12.6	0.87
Maximum	1.72	71	28.42	1.05
Sum	39.36	1333	536.42	23.53
Count	25	25	25	25
Confidence Level (95.0%)	0.043620745	3.382359691	1.38616141	0.01839535

Source: Microsoft Office Excel Worksheet

Table 3. Gender-wise distribution of Terracotta workers of Bankura

Sl. No.	Gender	Number of Respondents	Percentage
1.	Male	19	76
2.	Female	06	24

Source: Primary data

Table 4. Family Status of the respondents

Sl. No.	Family Type	Number of Respondents	Percentage
1.	Nuclear	09	36
2.	Joint	16	64
Family Size			
1.	Small (Up to 3)	07	28
2.	Medium (4-6)	04	16
3.	Large (More than 6)	14	56

Source: Primary data

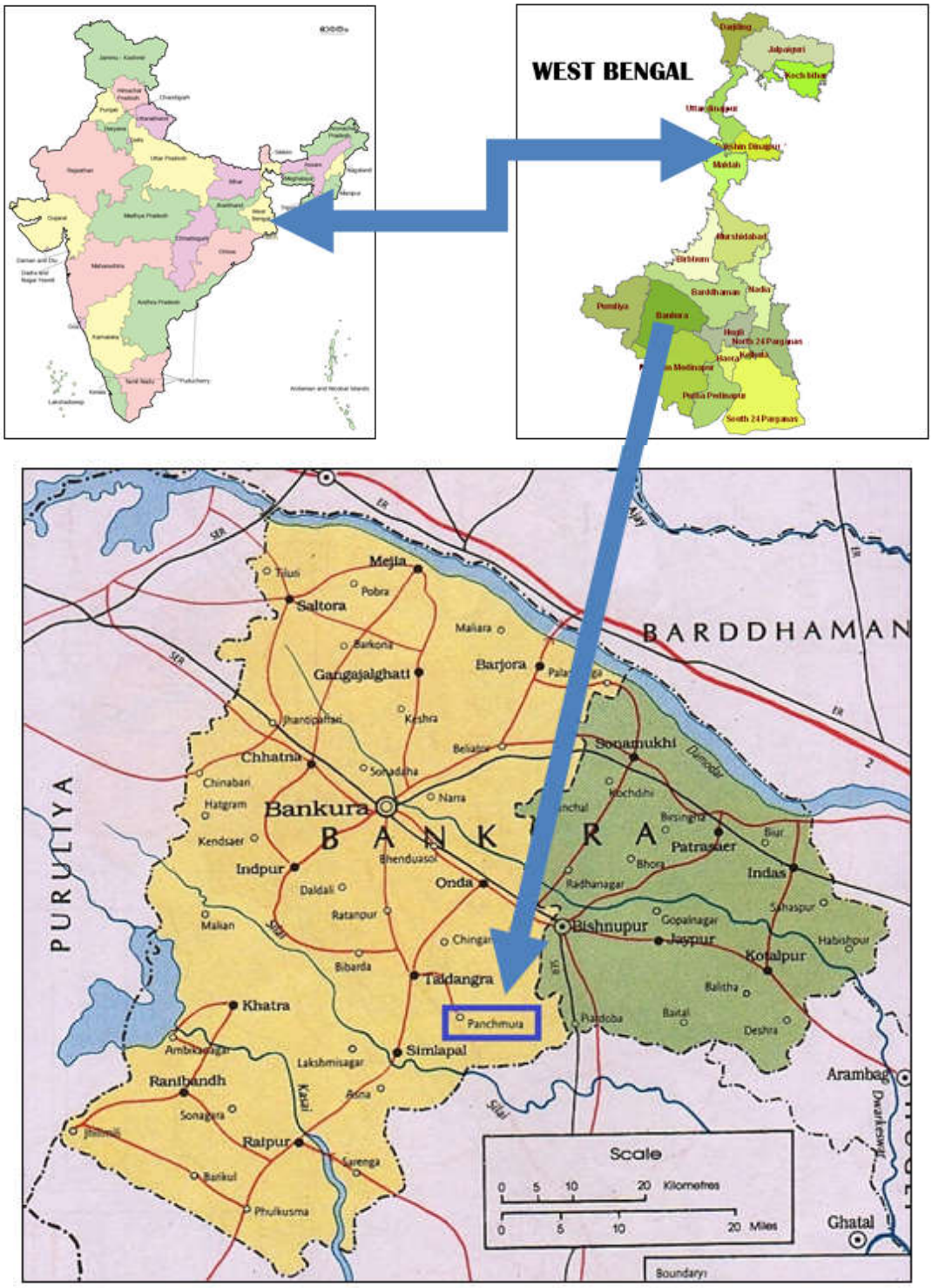


Figure 1. Map showing the location of Study area (Panchmura)

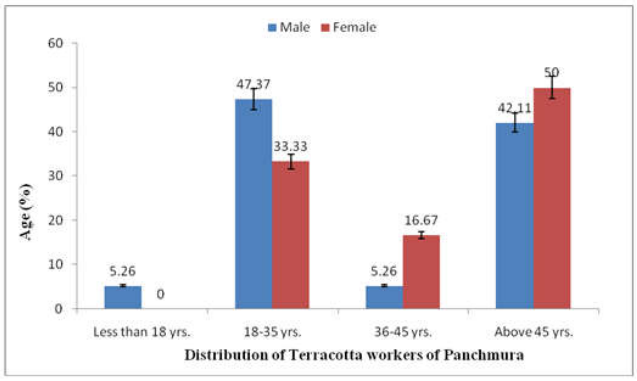
Gender

The terracotta engraving is one of the activities which provide scope for women participation. However, the gender-wise distribution (Table 3) of the artisans revealed that a majority (76 %) of the population was represented by males. This may be due to the intricate crafting technique, strenuous workload and intense demand of production. Moreover, women had to accomplish household responsibilities except the professional demand of their job.

Family Type & Size

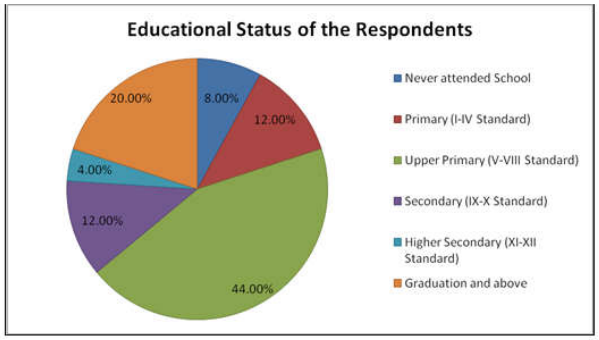
Nature of the family is one of the demographic indicators of a population. Family type and size contributes significantly to the gross income of family. The results (Table 4) of the present study indicated that joint family (64 %) still prevails in this community. 56 % of the population lived in large size and 16 % in medium size family system. Nuclear families tend to had small family size (28 %). This finding was in discordance with the statement of the year book of India (2000) where 82 % of the families were reported to be of nuclear type.

Figure 2. Assesing anthropometric measurements of terracotta workers



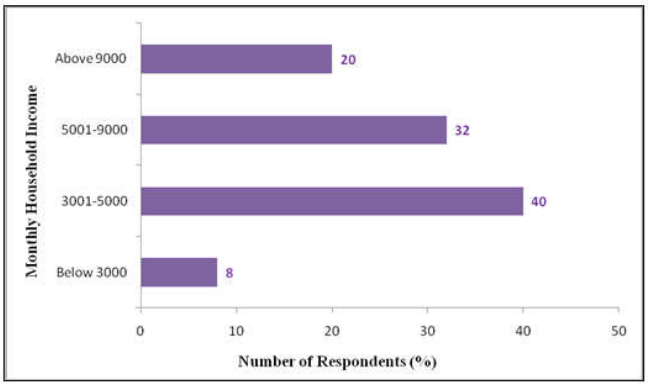
Source: Primary data

Figure 3. The Age-wise (%) distribution of Terracotta workers



Source: Primary data

Figure 4. Educational Status of Terracotta workers of Panchmura



Source: Primary data

Figure 5. Economic Status of the Terracotta workers of Panchmura

The terracotta crafting is one of such profession which involves all family members who contribute their precious time in preparation and mixing of the clay, drying, designing, colouring and firing.

Educational Status of the terracotta workers

Education provides the strength, economic sustainability and social environment in a community (Ganguly *et al.,* 2016). The present investigation (Figure 4) revealed that 8 % of terracotta workers had never attended school, 12 % have completed primary education and 44 % attended middle school. It also illustrated that 12 % of the artisans had completed secondary education and lesser percentage (4 %) of population studied up to higher secondary. 20 % of the artisans pursued higher study which is quiet admirable. The literacy rate among terracotta workers was 92 % which is much higher in comparison to the national average (74.04 %) (Census, 2011).

Socio-economic Status

Socio-economic condition plays a considerable role in determining the standard of living of people (Ganguly *et al.,* 2016). The Panchmura potters use a special coloured soil which has to be transported from remote villages like Jambedia, Natungram and Nakaijuri that eventually increases the production cost. The household economic profile (Figure 5) of the terracotta workers revealed that most of them (40 %) belonged to the monthly income category of Rs. 3001-5000. Master artisans, constituting 20 % of the community were earning more than 9000 per month. Women also were involved in the carving activity. The data shows that though most of workers live in a large family system, the average monthly household income (Rs. 7320) are miserable which reflects the poor standard of living of terracotta workers.

Conclusion

The age-old traditional terracotta crafting has been kept alive by those professionally skilled household workers. The study presents an account of this community with a view to identify the factors leading to its deterioration. It also attempts to focus on aspects of the socio-economic conditions of the artisans. In addition, the nutritional status of the community had also been dealt with. The findings of this study have considerable relevance to evaluate the socio-economic conditions and standard of living of terracotta workers. The educational status and literacy rate among the artisans was quiet encouraging. The industry was prosperous when raw materials were available abundantly and the competitions from other industries were less pronounced. Lack of space for maintaining and preserving the craft items from weather, high price of the natural colored soil, inadequate working capital, lack of modern training, poverty and occupational health hazards has made the situation more vulnerable. Provision of raw materials at reasonable price, financial assistance, skill development programs, outsourcing, regular health check-up are the demand of the society.

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