

CHAPTER 2

ANTHROPOLOGY

Doctoral Theses

01. CHUGH (Lokesh)
Somatoscopic & Somatometric Variation of Human Ear: A Study Among North Indian Population.
Supervisor: Prof. M.P. Sachdeva
Th 27289

Abstract

Background: Ears have a stable and unchanging structure that can be used for identification. Earprints have been recognized as valuable evidence in forensic science for identifying and individualizing individuals. Earprints result from the oils and waxes produced by the skin of the outer ear, and they are similar to fingerprints in their uniqueness. The use of earprints in identifying criminals dates back to 1965. Earprints are commonly found in certain types of crimes, such as burglaries, and can provide information about the perpetrator. This study aims to analyse the variation of human ear through somatoscopic and somatometric analysis for personal identification. Method: The study's sample included males and females from Jatav, Brahmin, and Muslim communities residing in Delhi and Uttar Pradesh. A total of 820 ear samples were selected, including 300 from Jatav community in New Delhi, 300 from the Brahmin community in Aligarh, and 110 from the Muslim community also in Aligarh. The data collection was done from live individuals along with their photographs. Measurements were taken for various ear features, including ear shape, ear lobe, helix, tragus, and various ear dimensions such as ear height, width, thickness, and lobule height and width. The study also calculated Ear Index and Lobular Index. Result: The results showed significant differences in many ear structures among the studied communities, but no appreciable variations between males and females of the Jatav population for additional measurements. The study also found significant differences in some somatoscopic variables between the right and left ears of the Jatav community and between males and females of the Brahmin and Muslim communities. The study demonstrates that the individual characteristics of the ear might provide useful information for forensic examinations that involve personal identification.

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02. CHOUDHURY (Nayanjyoti)
Production Patterns, Labour Process and Meaning-Making in Automobile and Allied Industries of Delhi-NCR.
Supervisor: Dr. Chakraverti Mahajan
Th 27288

Abstract

The thesis is an ethnography of two related questions based on fieldwork in the industrial region in Gurgaon: ‘What is the changing nature of work - production and labour processes - in the industrial regions in the national capital region in India?’ and, ‘what are the meanings attributed to it by those who work?’ It seeks to understand the evolution of ‘meanings of work’ – in roughly two decades from 2005 to 2020 in the industrial regions near Delhi, from Gurgaon in Haryana to Neemrana in Rajasthan – in this relationality between economic patterns and social formations. To do so, it engages in a multi-scalar ethnography, on one hand, with how global processes of change in production systems ‘embed’ in local contexts in the automobile and related manufacturing sectors in India. How exactly has the shifts from Fordist to Toyotist to data-driven Global Production Networks (GPN) been effected in this ‘node’. At the same time, the thesis is an attempt to understand meaning-making or ‘subjectivity’ by workers in grappling with these changes, structuring these processes themselves. The thesis engages with the wealth of anthropological work and ethnographies which originally produced our understandings of the world of work, from Braverman to Burrawoy and Keith Hart and Aihwa Ong to Jonathan Parry. It also interacts with insights from related disciplines of industrial sociology and political economy. The thesis points to a lacunae in the existing literature in understanding the ‘interactive changes’ and ‘embeddedness’ which structure both production processes and subjectivity of workers. It attempts to show how the promises of ‘participatory production on the shop-floor’ have produced contradictory results of workers tending to wield the same for their benefit, how new ‘containment strategies’ - control and precarity - are continually remade as a result of these contestations, and how workers visualise ‘meaningful work’ and ‘wellbeing’ through collective practices.

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1. Introduction 2. The Site and the Subject 3. Production and Labour Process in the Assembly Plants 4. Labour Process and Informalisation in the Supply Chains 5. Contestations in the Labour Process and Beyond 6. Rhythms, Subsumption, Mediation, and Public Sphere 7. Conclusion. References.

03. CHOUDHURY (Vineet)
Childhood Experiences and Health Outcomes Among Young Adults in Delhi-NCR India: An Anthropological Inquiry.
 Supervisor: Prof K.N. Saraswathy & Dr. Gagandeep Kaur Walia
Th 27287

Abstract

Introduction: The present study aimed to explore the prevalence and predictors of adverse and positive childhood experiences and understand their relationship with mental and physical health outcomes among young adults in Delhi-NCR, India, independently and in light of selected gene polymorphisms. Method: This cross-sectional study was conducted among 1843 young adults (aged 18-25) of both sexes (68.1% females) residing in Delhi-NCR, India. Fieldwork was conducted on the University of Delhi and Amity University campuses. Adverse childhood experiences (ACEs), positive childhood experiences (PCEs), depression, anxiety, stress, and well-being were assessed using standard tools. Anthropometric and physiological data

were collected using standard techniques. Lipid analysis and genotyping of selected SNPs were performed using a biochemical analyzer and Sequenom MassARRAY iPLEX platform, respectively. Results: The study revealed a very high prevalence of ACE exposure (72.3%) and a sizable prevalence (7.2%) of low PCE exposure in the study sample. Further, ACEs/PCEs were not found to be randomly distributed in the sample. Next, the study revealed ACE exposure to be associated with higher odds of depression, anxiety, stress, poor well-being, and obesity and PCE exposure to be associated with lower risk of mentioned conditions and better well-being. In general, ACE/PCE exposures were not associated with hypertension and dyslipidemia. Overall, ACE/PCE exposures were more strongly associated with mental health outcomes than physical health outcomes. Lastly, the study also revealed that certain genetic factors may increase the odds of ACE/PCE exposure and may also modulate the relationship between ACE/PCE exposures and health outcomes. Conclusions: This study reveals the detrimental impact of ACEs and the protective and promotive effect of PCEs on several health outcomes among young adults in Delhi-NCR, and underscores the importance of ACE/PCE-informed health policies. The study also hints towards genetic confounding of the relationship between ACE/PCE exposures and health outcomes.

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04. JAIN (Shweta)
Healthy Aging and Quality of Life: An Anthropological Insight.
 Supervisor: Dr. Meenal Dhall
Th 27864

Abstract

Ageing has been described as the biological changes that occur in an individual that are associated with a gradual decline in function. It is a natural phenomenon and essentially a biological process but to a large extent its perception is socially constructed. The aim of the present study is to determine the effect of nutrition, dietary habits and life style behavior on physical, mental, cognitive health and quality of life in pursuit of healthy ageing among elderly Jain population of Delhi. It is a cross-sectional study based on quantitative and qualitative methodology conducted among Jain population, aged 60 years, and above residing in Delhi employing multi stratified and snowball sampling techniques. Total 403 participants were included (211 females and 192 males). For the present study, proposal was approved by the ethical committee of the Department of Anthropology, University of Delhi. Socio-demographic, lifestyle and diet related information was assessed using standardised proforma. Standardised questionnaires were used for assessing nutritional status, psychological health, physical performance, physical activity, quality of life and general self-efficacy. Anthropometric, physiological and blood related variables were assessed for overall physical health status. Multidimensional approach has been used to find out the status of healthy aging among elderly Jains of Delhi and the impact of their nutrition over their quality of life under all the

domains. It was found out that nutrition has a significant impact over their QoL and aging process. QoL, ability to perform basic, instrumental daily activities, social network and physical performance are significant determinants of healthy aging. It can be concluded that physical, psychological, and social factors play an important role to determine the status of healthy ageing in Jain community. Promoting healthy and active lifestyle during ageing process will benefit them from recovering from illness, being socially active and improved well being.

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05. KASUDHAN (Sapana)
Hypertension and Quality of Life in Rural Punjab, India: An Anthropological Study.
 Supervisor: Prof. K. N. Saraswathy
Th 27291

Abstract

Abstract Background: Hypertension is a significant public health concern in India leading to increased risk for premature mortality. Early detection, treatment, and effective blood pressure (BP) control can prevent nearly a third of cardiovascular-related deaths. However, adverse/poor health conditions and related medication are believed to reduce individuals' sense of well-being and self-satisfaction. Therefore, the present study aimed to understand the prevalence and determinants of hypertension and its impact on the Quality of life (QoL) in Rural, Punjab, India. **Method:** The present cross-sectional study was conducted among 2328 individuals of both sexes, aged 30-75 years residing in Mansa, Punjab, India. Sociodemographic and lifestyle data were collected by using a pre-tested interview schedule. Somatometric measurements and BP were measured by using standard protocols. Fasting blood was collected for lipid and glucose analysis. QoL was assessed using the World Health Organization Quality of Life Instrument (WHOQOL-BREF). **Result:** In the present study, the overall prevalence of hypertension was estimated to be 52.4%. Further, factors like old age, male sex, Jat Sikh community, ≥ 10 family members, and alcohol consumption were found to be significantly associated with hypertension risk. Additionally, the risk of hypertension was significantly higher among individuals with obesity, high WC, high triglyceride, and high VLDL than their respective counterparts. Regarding QoL, already diagnosed individuals with hypertension, diabetes, and underweight were found to have a poor QoL in psychological and social health domains, whereas high WC, was found to be associated with good QoL in the environmental health domain. **Conclusion:** The present study revealed a significant burden of hypertension in the present population. Further, hypertension diagnosis/medication was associated with poor QoL. The study underscores the need for community-based screening programs and lifestyle modification. Further, awareness, and counseling regarding hypertension should be designed and implemented to minimize the negative consequences of diagnosis labelling.

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Obesity, Blood Glucose, and Lipid Variables 5.3 Results and Discussion: Impact of Hypertension and Associated Conditions on QoL 6. Summary and Conclusion. References. Annexures. List of Publications

06. KATARIA (Suraj)
Association and Prediction of Human Externally Visible Characteristics (EVCs) Using Single Nucleotide Polymorphisms (SNPs): Implications for Forensic DNA Phenotyping (FDP).
 Supervisor: Prof. K. N. Saraswathy & Prof. M. P. Sachdeva
Th 27292

Abstract

This study investigates the association and prediction of human externally visible characteristics (EVCs) using single nucleotide polymorphisms (SNPs), focusing on forensic DNA phenotyping (FDP) within the Indian population. Recognizing the variation in traits such as hair and eye colour, hair shape, premature greying, male pattern baldness, and various facial and dental features, we aim to characterize these traits in North Indians—an understudied group in terms of phenotypic diversity and the genetics underlying these traits. Expanding FDP beyond pigmentation, this research includes a broader range of physical appearance traits. Existing models like HIrisPlex-S, developed using European datasets, show limited accuracy in non-European populations, prompting the creation of an FDP model designed for the Indian population. The study objectives include determining the phenotypic distribution of EVCs, estimating allele frequencies of selected SNPs, understanding SNP-phenotype associations, and developing a predictive model for personal identification based on SNP data. Data collection involved recruiting healthy, unrelated adults from six North Indian states, ensuring a representative sample with detailed phenotypic and genetic data. Phenotypic traits were collected through interviews and 2D facial photographs, along with blood samples for genetic analyses, followed by DNA extraction and SNP genotyping using the Sequenom iPLEX MassARRAY platform. Statistical analyses, including Chi-square tests, allele frequency calculations, single SNP GWAS, and ridge regression, identified significant associations and developed prediction models. The study identified 35 genetic associations, with 12 SNPs showing genome-wide significance and 23 showing suggestive associations. We revealed 16 novel associations not previously reported, providing new insights into the genetic basis of traits like shovel-shaped incisors and epicanthic folds. Our predictive model demonstrated high accuracy (75-90%) for 12 phenotypes, highlighting its potential utility in forensic applications. These findings highlight the necessity of developing comprehensive DNA phenotyping tools designed for the Indian population, enhancing both academic research and practical forensic applications.

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1. Introduction 2. Review of Literature 3. Area and People 4. Materials and Methods 5. Results 6. Discussion 7. Summary and Conclusion. References. Annexures. List of Publications.

07. KAUR (Jaisleen)
Poroscopy: A Forensic Approach to Personal Identification.
 Supervisor: Dr. Meenal Dhall
Th 27865

Abstract

Fingerprints recovered from crime scenes are either partial or fragmentary. These incomplete prints may lack the requisite eight points of match needed as per Indian standards. Poroscopy, the study of sweat pores, presents a significant potential for personal identification in such situations. However, despite its potential utility, poroscopy remains underutilised. The current research was conducted with the aim of exploring the reproducibility of fingerprint microfeatures - namely, pore area, inter-distance, and angle - under various conditions. This includes an examination of their reproducibility over time, impact of temperature, and influence of different substrates. Additionally, the practical application of poroscopy for matching latent fingerprints with specimen prints was assessed. The use of epidermal ridge sweat pore density for determining the sex of individuals was also examined. Participants were selected using convenience sampling and comprised of college students and individuals involved in academia, aged 18 to 35 years. Individuals with any injury to the fingers were excluded from the study. A total of 13,660 fingerprints were obtained from 432 participants. All prints were anonymised, sequentially labelled and stored. Data were analysed using Image ProTM software. Statistical analysis was performed using SPSS software version 16 and Microsoft Office Excel 365. Findings indicate that pore microfeatures, namely pore inter-distance and angle, remain consistent over time and under varying conditions. Immersion in water at different temperatures did not significantly affect pore (inter-distance and angle) reproducibility. Moreover, successful matches between latent and specimen prints were achieved using pore inter-distance and angle. Additionally, pore density proved useful for sex determination: fingerprints containing more than 49 pores per 9 mm² are more likely to belong to females, while fewer than 45 pores per 9 mm² suggest male origin. This research underscores the potential of poroscopy as a robust forensic tool for personal identification supplementing traditional ridge-based analysis.

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08. PATEL (Rashmi)
Inside an Infertility Clinic: Ethnography of Selves, Conjuality and Assisted Conception in Uttar Pradesh, India.
 Supervisor: Dr. Chakraverti Mahajan
Th 27293

Abstract

The present research work is an ethnographic study of infertile couples who choose assisted reproductive technologies (ARTs) to procreate. Infertility is a growing burden across the world and a prevalence rate of 11.8 percent has been estimated in India (WHO 2004). Infertility is diagnosed as a medical condition, but it also bears wider socio-cultural connotations shaped by global and local contexts. The aim of the present study was to understand the experience of infertility, decision-making in the context of ART treatment and the effect of ART services on social, familial, and emotional well-being of couples in India. The study was carried out in an infertility

clinic located in Uttar Pradesh using ethnographic methods of data collection such as participant observation, informal interactions, in-depth interviews, and case studies. Between September 2020 to February 2021, the fieldwork was conducted in an infertility clinic where couples seeking treatment and the medical staff were observed and interviewed. Following the participant observation of six months, telephonic interviews were conducted over a course of four months (June 2021-September 2021) coupled with multiple follow up visits to the clinic in 2021 and 2022. During these visits, cases at the clinic were followed up and the medical staff was interviewed again. The collected data was coded and analyzed thematically in order to identify couple's challenges with infertility, impact on conjugality and family relations, their experiences with ART treatment inside the clinic, the media and market aspects of ART treatment, and the emotional challenges throughout the journey. The study found that infertility was a stigmatizing and debilitating experience for married couples that drove them towards assisted conception. Assisted conception offered both hope and despair to couples, and the treatment journeys were rife with familial, financial, and emotional upheavals which could be dissipated with personal agency, spousal support and familial support.

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1. Introduction: What, Why, Where and How of Assisted Conception 2. Failed Conception: Self, Body, and Agency 3. The Road to Conception 4. Media, Market and Middlemen 5. Clinic, Clinician and Couple 6. Dealing with Distress: Sources, Idioms, and Coping Mechanisms 7. Conclusion: In God's House There is Delay, Not Denial. References. Appendices

09. SHARAN (Kanika)
Women and Politics: Issues of Representation and Identity Among the Gaddis of Himalaya.
 Supervisor: Dr. Avitoli G. Zhimo
Th 27295

Abstract

Issues of representation and identity have been an essential part of Anthropological studies. As a topic of research, it has a vast scope for study. There are various ways that a researcher can work based on the context of representation and identity. Anthropology contributes to this mounting body of research by giving new life to the study of representation and identity concerning women and politics, which for a long time received insufficient attention. This study seeks to understand the political representation and identity issues of marginalized Gaddi women of the Himalayas. The thesis is the outcome of the fieldwork in the three Gaddi villages of the smart city Dharamshala of Kangra district in Himachal Pradesh, India. This research attempts to study the marginalized Gaddi women regarding their political representation and identity. The study outlines the socio-political factors that impact their political representation and their roles and responsibilities as candidates, representatives, political activists, and voters. This study also focuses on Gaddi women in the digital era, where they are using their agency for self-representation. This study unravels how the masculine nature of media has always looked at marginalized Gaddi women from a colonial, masculine, and tourist gaze. And how Gaddi women have used digital media to redefine their identity and represent themselves in political space to reclaim their autonomy. This study also discovered the precarity and obstacles Gaddi women face in male-dominated politics and how they negotiate their political space to represent themselves. The study will also explore how the Constitutional Amendment acts 73rd and 74th and other

governmental programs and policies are helping muted Gaddi women reclaim their agency for representation in political institutions.

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1. Introduction 2. Field Experiences and Research Methods 3. Ethnographic Profile of the Gaddis of Himachal Pradesh 4. Politics, Women and Representation 5. Women in the Digital Era 6. Precarity, Agency and Negotiation 7. Summary and Conclusion. References. Appendix: Consent Form. Research Publication.

10. SINHA (Sohini)
Anthropological Understanding of the Dynamics of Depression Among Women During there Post-Partum Period.
 Supervisor: Dr. Vipin Gupta
Th 27296

Abstract

The prevalence of mental health hazards has emerged as a significant global concern, impacting a substantial section of the population in contemporary times. The mental health sector is currently receiving less attention, indicating a need for more focus on its prevalence. This cross-sectional study examines the mental health of women in the post-partum period, taking into account several elements such as biological, socio-economic, and lifestyle factors, in order to provide a comprehensive assessment. The study's distinctiveness stems from its comprehensive examination of the symptomatic manifestations of mental health, incorporating an assessment of many lifestyle and socio-economic determinants, as well as an analysis of the WHO-5 Well-Being Index, HAM-D, and EDPS questionnaires. The present study revealed a prevalence rate of 28% among women experiencing postpartum depression. Additionally, the study emphasized the identification of different risk factors and psychosocial stressors associated with this condition. Consequently, these findings contribute to our understanding of the importance of implementing preventative strategies aimed at mitigating or eliminating the variables that negatively affect mental health. This study encompasses an examination of the biological and social mechanisms, as well as cultural patterns, associated with post-partum depression. By understanding these factors, health professionals can provide comprehensive treatment for individuals experiencing post-partum depression. Additionally, policymakers can utilize this knowledge to develop more effective policies addressing maternal and child health concerns. The consideration of psychiatric comorbidity is vital and necessitates careful attention in order to improve the mental well-being of women both during and after pregnancy. This approach is crucial to ensure optimal outcomes for their offspring, particularly in terms of their future health.

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1. Introduction 2. Aims and Objectives 3. Review of Literature 4. Methods and Methodology 5. Results 6. Discussion 7. Summary and Conclusion. References. List of Presentations and Workshops. List of Publication.

11. YADAV (Neha)
Cognitive Impairment and its Biosocial Correlates: A Cross-Sectional Study in Rural Punjab, India.
 Supervisor: Dr. N. Kiranmala Devi
Th 27298

Abstract

Background: Cognitive impairment (CI) is a growing global health concern. In India's rural areas, demographic changes, increased life expectancy, and inadequate healthcare infrastructure make the situation especially challenging. Understanding the role of sociodemographic, lifestyle, genetic, and epigenetic factors in CI etiology is crucial for identifying high-risk groups and providing targeted interventions. The one-carbon metabolic pathway is particularly relevant to CI's etiology. However, research on the socio-cultural, genetic, and biochemical interactions in rural Indian populations is limited. Aim: This study aims to assess the CI status and identify its correlates in terms of sociodemographic, lifestyle, biological, and environmental variables among rural adults in Mansa district, Punjab, India. Methods: A total of 1206 rural adults were recruited. Screening for CI was conducted using the MMSE and RUDAS. Sociodemographic and lifestyle data were collected using a pretested interview schedule. Physical activity and sedentary behavior were assessed using the GPAQ. Biochemical (folate, B12, homocysteine), genetic (MTHFR C677T, MTR A2756G, CBS 844INS68), and epigenetic (global DNA methylation) analyses were performed using standard protocols. Statistical analysis was conducted using SPSS software version 22. Results: The prevalence of CI was 40.3% using MMSE and 28.7% using RUDAS; however, reduced to 9.07% when age and education stratified norms were used. Both tools showed moderate to good concordance. Higher age, female sex, and non-literacy were significant risk factors for CI. Low physical activity negatively impacted cognitive health in older adults, while high sedentary behaviour affected both middle-aged and older individuals. No independent association of CI with biochemical markers, genetic polymorphisms, or global DNA methylation was found. Conclusion: The study found a significant prevalence of CI in the population, with age, gender, literacy, and lifestyle factors being key risk factors. Targeted interventions focusing on modifiable lifestyle factors and education may be crucial to mitigating CI risk in this population.

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