

CHAPTER 26

HOME SCIENCE

Doctoral Theses

01. AGGARWAL (Kanika)
Association of Cardio Metabolic, Dietary and other Lifestyle Factors with Risk of Incident Diabetes among Adults Residing in Urban Delhi : A Nested Case – Control Study.
Supervisors: Dr. Ravinder Chadha and Dr. Nikhil Tondon
Th 24525

Abstract
(Not Verified)

Association of cardiometabolic and lifestyle factors with risk of incident diabetes was assessed in a case-control study nested within the Centre for cArdiometabolic Risk Reduction in South Asia (CARRS)-Surveillance study (Nair et al. 2012). The sample comprised newly diagnosed cases of diabetes (n=100) and their age and gender matched controls (n=200, ≥20 years) residing in urban Delhi. Data on socio-demographic characteristics, family history of disease, dietary intake, physical activity, household food expenditure, tobacco use and alcohol consumption was collected using a questionnaire. Dietary assessment was done using 3-day 24-hour dietary recall and a semi-quantitative food frequency questionnaire. Participants underwent anthropometric, body composition, blood pressure and biochemical assessments. A unitary increment in weight (OR-1.06, 95% CI: 1.03-1.10), waist circumference (WC) (OR-1.08, CI: 1.03-1.12), body mass index (BMI) (OR-1.19, CI: 1.09-1.30), waist-height ratio (OR-1.11, CI: 1.02-1.21), body fat per cent (OR-1.12, CI: 1.04-1.21), serum triglyceride level (OR-1.006, CI:1.002-1.009), presence of hypertension (OR- 2.36, CI: 1.12-4.96) and pre-hypertension (OR- 1.83, CI :1.04-3.20) significantly increased the risk of incident diabetes. This was substantiated by panel data (over a period of two years) for unitary gain in weight, WC, BMI and body fat %. For every 10 minutes increase in daily moderate intensity activity (OR-0.89, CI: 0.80-0.99), 50 g increase in daily intake of whole grain (OR-0.72, CI: 0.53-0.98), and a unitary increase in protein intake (1g/day) (OR-0.94, CI: 0.89-0.99) there was a significant decrease in the risk of diabetes. Every increase in daily intake of visible fat (OR-1.27, CI: 0.99-1.62) and 1 g per day in total fat intake significantly increased risk of diabetes (OR-1.06, CI: 1.01-1.10). Every Rs 100 increase in monthly household expenditure on pulses significantly lowered the risk of diabetes (OR-0.49, CI: 0.26-0.93). Results support the role of cardiometabolic and lifestyle (diet and physical activity) factors in development of diabetes.

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02. ANAND (Shweta)
Community Radio and Communications About Women's Health: An Intervention Study of Henvelvani Community Radio, Uttarakhand.
Supervisors: Dr. Archana Kumar
Th 24528

Abstract
(Not Verified)

Community radio working on the principles of participatory communication has unique media characteristics which can be appropriated to influence the perceptions of community members. The scope of Henvallvani Community Radio (HCR), functioning in Tehri-Garhwal district, Uttarakhand in influencing community's perceptions negatively impacting the health of local women was explored. Two intervention groups and two control groups were formed for applying a research method of four group design. Exposure to health series Khushiyon ke aangan mein (KKAM) by HCR formed the intervention. A total sample of 480 was taken. Community members were involved in every step of the study. As brought out by FGDs and narratives, the prevailing perceptions encompassing women's health and their care seeking behaviour revolved around the issues of reproduction and family planning, household dynamics and quality of available health services. Message matrix prepared collectively by local women and the government health functionaries during a workshop conducted by HCR guided the creation of content of the series. HCR, government doctors and family identified as credible health information sources were utilized. After yearlong broadcast of the series by HCR, the knowledge levels of the respondents showed significant increase. Dialogic communications by HCR during KKAM brought out the discrepancies in the exiting belief systems of the listeners, led to critical self reflection and creation of public sphere where normative issues, communication around which had remained silenced for long, can be discussed and dialogued. Most Significant Change (MSC) stories of the listeners indicated the positive influence of KKAM at micro and macro level in terms of demystification of myths, improved communication, increased sensitivity towards women's health issues, etc. Hence, as a credible and acceptable community media, HCR was able to influence the perceptions and break the barriers of communication around some prevalent socio-cultural norms and beliefs.

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1. Introduction 2. Review of literature 3. Methodology 4. Findings. Discussions and conclusions. Summary. References. Annexures.

03. ANJALI

Nutritional status and Perceived Barriers to Physical Activity among Collegiate Students (18-24 years) of Delhi.

Supervisors: Dr. Manisha Sabharwal

Th 24912

Abstract
(Not Verified)

The decline in physical activity among college youth has been associated with certain perceived barriers which lead to overweight, obesity and NCDs later in life. The study assessed the nutritional status and perceived barriers to physical activity among 409 college students aged 18-24 years. Demographics, physical activity, dietary and substance abuse information among participants was assessed using the questionnaire. Data for food intake was collected using dietary record and food frequency questionnaire. Anthropometric and body composition assessment was done using standard procedures. The perceived barriers to physical activity were assessed by mixed methods approach through Likert type rating scales and focus group discussions. The mean BMI of subjects was 21.57 ± 3.92 . Overweight

and obesity was observed among 21 %, while 23.5% participants were underweight. Obesity by body fat% was found among 14.4% participants. Around 75.5% participants were sufficiently active and only 24.5% were insufficiently active. Low level of physical activity was observed in 24.5%, 64.0% were in the moderate level of physical activity and 11.5% showed a high level of physical activity. Gender ($p<0.001$), living arrangement ($p<0.006$) and perceived personal barriers like stress ($p<0.030$) and self-efficacy ($p<0.002$) were significantly associated with participant's physical activity. FGDs revealed predominantly personal barriers followed by environmental and social barriers. Dietary information indicated meal skipping (76%) and frequent snacking (79.0%) between meals. Despite diet diversity, inadequate food group intake was noted with a very low intake of vegetables ($\approx 50\%$), except for the milk and milk products. Low percent adequacy of Vitamin-B12 (46.67%), Pyridoxine (12.58%), Iron (69.83%), copper (68.5%), chromium (0.07%), zinc (45.9%), and selenium (0.16%) was observed. There is a need for a country based instrument for assessment of physical activity barriers which can help in the development of future college-based physical activity interventions to cater to the specific needs of young adults.

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04. CHATURVEDI (Swapna)
Nutritional and Lifestyle Risk Factors Associated with Non Alcoholic Fatty Liver Disease (NAFLD).
 Supervisor: Dr. Neena Bhatia and Dr. Naval K. Vikram
Th 24533

Abstract (Verified)

NAFLD is a pathological state, resulting in excessive accumulation of fat in liver, in absence of alcohol intake, and is associated with obesity, diabetes and metabolic syndrome. This study aimed to identify the nutritional and lifestyle risk factors associated with NAFLD. Metabolic and lifestyle risk factors including dietary pattern, dietary intakes, physical activity patterns and other lifestyle factors (tea, alcohol, smoking, stress and sleep) were analyzed in detail, in a hospital based case control study. A total of 320 subjects (160 per group) constituted the study population based on inclusion and exclusion criteria. Regression analysis was carried out to identify the risk factors [Odds Ratio (OR) & 95 % Confidence intervals (95 % CI)]. Central obesity, impaired fasting glucose, dyslipidemia, high blood pressure and metabolic syndrome showed significant association with NAFLD. Subjects with low levels of physical activity had higher odds of NAFLD compared to patients with moderate level of physical activity ($p<0.05$). An evening snack intake and alcohol intake showed a significant and positive association with NAFLD ($p<0.05$). The food groups analysis by 24 hour method identified a significant and positive association of edible oil with NAFLD. A higher SFA percent had a significant and positive association with NAFLD. The risk factors that were identified on multivariate analysis included central obesity (waist circumference >80 cm in females and >90 cm in males), low physical activity, high intake of edible oil (>25 g for males and >20 g for females), evening snack intake, high intake of SFA (more than 8 % of total calories), alcohol intake, total cholesterol higher than ≥ 200 mgs and family history of DM. The highest

attributable risk was contributed by waist circumference (46.4 %), followed by low physical activity (38.0%). The above identified risk factors could be used for planning preventive programs for NAFLD.

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05. CHITKARA (Surbhi)
Role of Stakeholders in Eco-Efficient Practices Towards Packaging Materials Used for Fast Moving Consumer Goods (FMCG).
 Supervisor: Dr. Sushma Goel
Th 24531

*Abstract
(Verified)*

The research entitled 'Role of Stakeholders in Eco-efficient Practices towards Packaging Materials used for Fast Moving Consumer Goods (FMCG)', was undertaken to assess eco-efficient practices of stakeholders during the life cycle of a package. The study was conducted in Delhi and NCR. Stakeholders in the sample included manufacturers of Packaging Materials (10), retailers selling packaged FMCG (28), consumers using packaged FMCG (200) and recyclers of Packaging Waste (5). All retailers were from kirana stores that sold FMCG to local area consumers. A total of four manufacturers developed paper packaging, three flexible packaging, while two and one of them were metal and glass packaging manufacturers respectively. Selected recyclers were engaged in packaging waste collection, segregation and processing. A criteria was developed to assess the eco-efficient practices of manufacturers which consisted of 9 indicators namely; primary and ancillary raw material consumption, use of recycled raw material, selection criteria of raw material, technologies used in production, labelling and printing on packaging, quality check measures, waste handling and management, logistics in packaging and eco-friendly packaging initiatives. Practices and preferences of consumers and retailers were measured by finding purchase frequency of consumers, their packaging preferences and marketing strategies used by retailers. Practices concerning waste disposal were also measured by assessing the types of waste generated in households and retail stores, and the methods used for waste disposal. Operations of Recyclers were studied to prepare a checklist of their practices. The methods of waste collection and processing were studied for each of the recycler. Gaps in eco-efficient practices of stakeholders that restrained the functioning of efficient life cycle of packaging materials were identified. Recommendations were provided for creating better systems in packaging industry so that stakeholders adopt eco-efficient practices and minimize the waste generated from packaging of FMCG.

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06. DEVI (Saroj)
Extraction of Fibre from Corn Stalk for Development of Composite Material.
 Supervisors: Dr. Charu Gupta
Th 24530

Abstract
(Not Verified)

Presently corn is cultivated on over 9 million hectares in India. The corn stalk specifically hybrid cultivars is less palatable and cannot be fed to the livestock though the leaves and tender parts can be utilized as dry fodder. To utilize the increased biomass of corn efficiently and to avoid problems like residue burning its textile application can be explored for making ecologically sustainable agriculture. However, the fibre extraction process of the hybrid corn under Indian conditions is not optimized. In this backdrop, a study was planned for optimization of the fibre extraction from the corn stalk. The hard woody corn stalk was used for optimizing alkali extraction process parameters i.e. duration, temperature, material to liquor ratio (MLR) ratio and alkali concentration in experimentation. To optimize these parameters observations like bundle strength and yield of extracted corn stalk fibre were recorded. It was found that optimum concentration for hybrid corn stalk fibre extraction was 5g/l concentration of alkali (NaOH). The highest bundle strength and fibre yield of corn stalk were recorded by this concentration along with temperature, time duration and MLR of 100°C, 60 min and 1:50, respectively. The characterization of extracted fibres was carried out by scanning electron microscope (SEM), X-ray diffraction analysis (XRD) and Fourier Transform Infrared (FTIR) analysis. The fibre properties like fineness, strength, elongation, and moisture regain properties were estimated to compare the documented values of various physical properties of cellulosic fibres with our cornstalk-extracted fibres. It was found that Epoxy resin have good mechanical properties which would be appropriate for valuable applications to make the waste biomaterial in to a sustainable and precious bio composite material. Different physical and chemical properties of the extracted corn stalk fibers indicated that it could be used for making biodegradable composite materials.

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1. Introduction 2. Review of literature 3. Materials and methods 4. Results and discussion. Summary and conclusion. Bibliography. Appendix.

07. GAUR (Sonal)
Study of the Revival of Mendh Printing Craft of Rajasthan.
 Supervisors: Dr. Simmi Bhagat
Th 24527

Abstract
(Verified)

The present study is an attempt to initiate the process of reviving the languishing craft of Mendh printing of Rajasthan. Mendh, a mixture of pine resin, castor oil and beeswax, enjoys a uniqueness owing to its fragrance and the practice of application of the hot resist paste on fabric. The three primary resist printing clusters of India, Sanganer, Bagru and Akola were selected as the study centres to determine the current status of mendh craft and the reasons leading to its decline. The technique of mendh printing was standardized in the laboratory. The proportions by weight of the key ingredients in resist paste were optimized based on the Hunter's whiteness index. The pre mordanting step, dye concentrations used during traditional process were also standardized so as to achieve the maximum K/S of the sample dyed thereafter. The various optimized recipes of printing and dyeing were used to print samples and subjected to physical, colour fastness and antimicrobial testing so as to establish their end

use utility. Three methods of cleaning viz; home laundry, dry cleaning and enzymatic cleaning were selected for the study to study the prospects of conservation. The artificially aged samples were tested for resistance to colour change and staining to select three methods. The last phase of knowledge dissemination was achieved through workshops, conducted in Sanganer and Bagru with craftsman and textile design students with an aim to strengthen the Mendh printing sector. In a follow up to this phase, the researcher collaborated with interested craftsman to develop swatches and products to test the validity of standardized method of printing. To summarize the findings of the study, a craft business model was formulated with the objective of craft sustenance.

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08. GUPTA (Vaishali)
Knowledge, Attitude and Practices among Eco-Club Students in Delhi Schools towards Solid Waste Management.
 Supervisor: Dr. Sushma Goel
Th 24529

Abstract (Not Verified)

The study was conducted in Delhi in two phases. Phase I included a survey and phase II involved an experimental study. Methodology included 26 schools and 624 student volunteers selected using purposive sampling technique. Other stakeholders included eco-club teacher coordinators (26) and solid waste handling personnel (26) for survey, for experimental study, two schools for solid waste assessment and 48 student volunteers for KAP study. Case profiles revealed that schools were doing little. Single waste bins were placed in classrooms for disposing all kinds of waste. Only five schools were actively involved in lead eco-club programme. Throwing waste into landfill without segregation was the preferred method of disposal by majority of schools and their association with environment based organizations was found to be limited to one-time activity. Mapping of solid waste was conducted in three stages – solid waste generated, sorting of solid waste and management of solid waste. Most of the waste generated in schools was getting discarded (52.86%) without sorting. Ranking of eco-club activities showed North Zone – School 1 (78.3 percent) obtaining highest rank, followed by South Zone - School 2 (75.0%). Among KAP scales, students gender and age affected the level of knowledge and attitude with girls and students in age groups (13-14 years) showed higher level of knowledge and better attitude towards solid waste management at 1% level. Knowledge, attitude and practices were significantly associated with school grade as VIII-IX grade was found to be the most active group. Solid waste generated before and after implementation of educational package showed a diversion rate of more than 15% in both schools and it was significant at 1% level (t-test analysis). Chi-square analysis of the association between students' KAP showed a significant change at 5% implying that the educational package had a positive effect on students' KAP.

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09. KAUR (Harveen)
Assessment of Eco-Sustainable Practices for E-Waste Management.
 Supervisors: Dr. Sushma Goel
Th 24526

Abstract
(Verified)

The research entitled “Assessment of Eco-sustainable Practices for E-waste Management” was conducted in NCT of Delhi comprising of bulk consumers, consumers, manufacturers and government officials as stakeholders. A cross-section of bulk consumers (educational institutions, private institution, bank and government office) used a wide range of electronics (laptops, PCs, telephones, CCTV and ACs). Educational institutions were found not possessing a policy for proper disposal of EEEs while bank and government office had. Electronics were stocked for a long time until they were irreparable, when they were sold to kabariwalas rather than to authorized recyclers. Most consumers had an annual maintenance contract for their ACs. Most mobile phones lasted for 1-3 years and consumers changed them as per their preference. Disposal was made either to kabariwala or the second-hand market. To evaluation criterion towards compliance of regulations by manufacturers revealed that four companies were found to be performing moderately while two companies poorly. Concurrent inspections, monitoring, rewards and penalties could compel manufacturers to adopt e-waste regulations. Manufacturers had to submit an EPR plan to seek EPR authorization from SPCB/CPCB which had to state the collection mechanism. Most manufacturers partially adopted eco-sustainable practices for mandatory regulations i.e., labelling (minimum usable life, EoL, life of EEE and quality). EPR authorizations were 153 till 2012 and 726 in 2018. Based on inspection reports towards EPR and RoHS compliance, CPCB released a certificate of compliance. Compliance with regulations was poor by bulk consumers as they did not maintain records and obtain a certificate from authorized recyclers. Authorization approvals granted to dismantlers and recyclers were 178 in 2012 and 275 in 2018. Officials levied fines for non-compliance during surprise inspections. For effective e-waste management system, an eco-sustainable portal catering to diverse needs (collection & disposal) of stakeholders was designed to connect all stakeholders at one platform.

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10. KAYINA (Hriiyiphro)
Relationship Between Emotional Value and Retention of Products: A Study with Reference to Chair and Wedding Attire.
 Supervisor: Dr. Sushma Goel
Th 24534

Abstract
(Verified)

With increase in the availability of products, consumer’s sense of product ownership extends beyond usability. It becomes difficult for consumers to choose products that are relevant to their lives, appealing to their senses, emotions and values that influence their decisions of product choice, use, retention and disposal. A throwaway culture is created where people dispose products while they are still useable, leading to an unsustainable dependency on products. People tend to retain certain products whereas they easily dispose of other products depending on the emotional value they attach with them. Sustainability of people’s consumption patterns can be increased

by extending the lifespan of products owned and used by stimulating the degree of emotional value people attach towards their products. This study looks into consumer's sense of product ownership through the concept of emotional value and its relation to product attachment and retention with reference to chair and wedding attire. An emotional value measurement scale having four possible determinants of emotional value: semantic value, experience value, identity value and romantic value was constructed for the study. After multiple level assessments of data, statistical analysis and validation with subject experts, the four determinants each with multiple dimensions was verified for relationship of emotional value with product attachment and retention. The findings of the study led to development of an emotional value framework for product ownership which can potentially be applied to diverse product categories. This framework is the first step for all stakeholders to tread towards product sustainability. A careful consideration of the framework will help designers have a better understanding of the needs and emotions of their clients and allow consumers to enjoy acquisition and ownership of products in a more meaningful way. A meaningful product experience can increase product lifespan leading to product sustainability.

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11. KHAWLNEIKIM (Shishi)
Mahatma Gandhi National Rural Employment Guarantee Scheme and Livelihood Security: A Study in Manipur.
 Supervisors: Dr. Minakshi Mittak
Th24532

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1. Introduction 2. Review of literature 3. Methodology 4. Findings and discussions. Summary and conclusion. Bibliography. Annexures.

12. MAJINA SHAHEEN
Lifestyle and Dietary Evaluation of Frailty in Elderly Residing in Urban Delhi.
 Supervisors: Dr. Seema Puri and Dr. Nikhil Tandon
Th 24916

*Abstract
(Verified)*

The present research was an exploratory study to assess prevalence of frailty and influence of lifestyle and dietary factors on frailty in elderly above 60 years of age living in urban Delhi. Sarcopenia was assessed as presence of low muscle mass and function. Frailty was assessed as meeting ≥ 3 out of 5 criteria: unintentional weight loss, exhaustion, weakness, slowness and physical inactivity. MNA-SF and one-day 24-hour dietary recall were used to assess diet and nutrition profile. Anthropometric measurements included height, weight, waist and hip circumferences, BMI, WHR, WHtR, muscle and bone mass, total body fat and visceral fat percentages. Biochemical assessment included FPG, HbA1C, total cholesterol, triglycerides, HDL and LDL, serum urea and creatinine. Functional ability was assessed using ADL and IADL. Mini-Cog test and PHQ-9 were used to assess the psychological health. Quality of Life was assessed using EQ-5D 5L. Prevalence of sarcopenia and frailty was 18.1

and 19.7 percent, respectively. About 73 percent were pre-frail and 7.3 percent were non-frail. There were no significant differences between the socio-demographic, anthropometric, biochemical profile (except in serum urea), functional ability, lifestyle, psychological health or quality of life of the frail, pre-frail and non-frail elderly. Majority had a normal nutritional status with no significant difference except in the mean MNA score. More frail elderly were inadequate in intakes of calcium, chromium, iron, zinc, thiamine and vitamin C as compared to the non-frail elderly with no significant differences. Frailty was significantly positively correlated with age, serum urea and vitamin A and negatively correlated with niacin intake. The significant predictors of frailty were marital status, low protein intake, tobacco consumption and physical inactivity. The intervention strategies for prevention of frailty should focus on improving nutrition, promotion of physical activity and preserving functional ability to ensure independence and quality of life.

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13. SAVITA SAGAR
Perceptions of Life Experiences among Women College Teachers Who Availed Scheduled Caste Based Reservation.
 Supervisor: Prof. Vinita Bhargava
Th 24915

Abstract (Not Verified)

The Constitution of India obligates the State to provide special provisions for the betterment of the socially and educationally backward. This study attempts to explore how Scheduled Caste reservations have facilitated the development of lower caste women who availed reservation. The specific objectives of the study were to explore the perceptions of women college teachers regarding the reservation policy, document their life experiences and ascertain their subjective well-being. The sample consisted of 60 Dalit women in the age group 30-45 years working in government educational institutions of Delhi. The college teachers were contacted through the Delhi University's Schedule Caste Association. Purposive sampling technique and snowballing method was used for selection of sample. A mixed method approach was used for collecting and analysing of data. The tools used for data collection were unstructured interview guide, the Diagrammatic Representation of the Life Course tool (Bhargava, 2005), Flourishing Scale (Diener & Biswas-Diener, 2009) and Comprehensive Inventory of Thriving (CIT) (Diener, Su, & Tay, 2014). The findings revealed that reservation has played a very significant role in motivating and providing opportunities to get education, employment and as a result enhance the standard of living of the participants. The teachers were first-generation women in their family to be working outside the home and were highly educated. They were considered to be remarkable examples in their community and were extremely satisfied with their achievements. Other than reservation, parents, family members, peers, teachers and colleagues were identified as motivational agents. Participants had experienced different forms of caste based discrimination in schools, colleges and work places. However this did not impinge on their overall well-being. They saw themselves as leading a purposeful life, had good relationships, and were self-reliant. In conclusion, the study indicates that caste reservations are required but with the conditionality of an economic criterion.

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14. SINGHAL (Divya)
Zari in Silk Brocades: Cleaning for Conservation.
 Supervisors: Dr. Simmi Bhagat
Th 24524

Abstract
(Verified)

The present study was a combination of exploratory and empirical research. Data about the zari manufacturing craft was collected from Surat in Gujarat and Banaras in Uttar Pradesh, as these two are the major zari producing centres of India. However, the traditional process and the raw materials used in this process have undergone a radical change in last hundred years. The main factors for this being technological upgradation and increasing cost of precious metals like gold and silver, which were traditionally used in making zari. Thus, limited number of brocade fabrics having pure zari and the intricacy of design have survived, mostly in museum collections, or as family heirlooms. Material investigation of different zari varieties helped in assessing the problems of brocade fabrics, which are tarnishing, corrosion, and soiling. These factors are responsible for lost lustre of brocade fabrics. Hence, the study explored the various zari cleaning procedures selected through review of literature and interactions with area experts. The cleaning methods were broadly divided into three categories- mechanical, aqueous, and solvent cleaning. The experiments were carried out on brocade samples patterned using real and imitation zari. The samples were artificially corroded, tarnished, and soiled using methods adopted from AATCC and IS standards. The results of cleaning experiments were summarized and their efficacy was tested on a brocade costume. The research concluded with organisation of an awareness workshop with the stakeholders, sharing the knowledge about types of zari yarns, identification methods, preventive care of brocade fabrics, and cleaning methods for zari. An IEC booklet titled, 'Zari in Brocades: Tradition to Preservation', was developed and distributed among the participants of the workshop.

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15. SINGH (Kavita)
Influence of Material, Household and Community Factors on Birth Weight : A Comparison between Urban and Rural Poor Resource Communities of Delhi.
 Supervisors: Dr. Geeta Chopra and Dr. Seema Puri
Th 24913

Abstract
(Verified)

Despite rapid economic and medical sector growth, India continues to have a high prevalence of low birth weight. This highlights the need to look beyond the hospital-based approaches to improve reproductive indicators. The present study, thus, was undertaken to determine factors operating at the maternal, household and

community level affecting the birth weight in urban and rural communities. The study was designed as a prospective longitudinal cohort. Mix methods approach was adopted to achieve the objectives. A total of 318 pregnant women completed the survey; data was collected at three-time point contact; at enrollment (2nd trimester), mid-term (3rd trimester) and end-line (at term). A semi-structured interview schedule was used to elicit information on the socio-demographic profile, obstetric history, current pregnancy, family relationships and dynamics, weight and height of the respondents. Stress and social support were assessed using Depression Anxiety and Stress Scale (DASS-42) and Multi-dimensional Scale of Perceived Social Support (MSPSS). One-day dietary recall and food frequency questionnaire were used to assess the diet and nutrient intake. For the newborn, birth weight and length were taken. For the qualitative method, Focus Group Interviews (FGI) were conducted with pregnant women (PW) and mothers-in-law (MIL) to map their perceptions on the factors affecting pregnancy outcome. A total of 12 FGIs were conducted. The prevalence of LBW was 32.2 %. At the maternal level, low maternal education, low IFA consumption, and depression during pregnancy were significantly associated with birth weight ($p=0.000$). At the household level, relationship with husband, domestic violence was significantly associated with birth weight. Diet during pregnancy, stress related to the gender of the child and family dynamics emerged as significant factors in the FGIs. Findings suggest that factors affecting birth weight operate at multiple levels. Hence, a comprehensive and target specific intervention package is needed to improve the birth outcomes.

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1. Introduction 2. Review of literature 3. Materials and methods 4. Results and discussion. Summary and conclusion. Bibliography. Appendices. List of publications.

16. TRIPATHI (Divya)

Development of mHealth based Intervention and Assessment of its Feasibility in Nutritional Management of Type 2 Diabetes.

Supervisors: Dr. Neena Bhatia

Th 24914

Abstract (Not Verified)

The present study was conducted to develop a mHealth based intervention and assessment of its feasibility in nutritional management of Type 2 diabetes. The study was conducted in three phases. The phase I comprised of need assessment study among 100 newly diagnosed type 2 diabetes patients, by assessing their knowledge, attitude, practice and self-efficacy. Identification of barriers and facilitators in diabetes management was done by conducting 2 Focus Group Discussions (FGDs) with patients and 15 interviews with Healthcare providers. In the second phase mHealth based intervention, a hybrid web app (Diabetes Sutra) was developed. In the third phase, feasibility of the developed App was tested by conducting a pre-post study on 80 subjects. Need assessment highlighted poor to moderate knowledge, positive attitude, sub-optimal practices and moderate level of self-efficacy in type 2 diabetes patients. Personal, social and environmental barriers and facilitators were identified based on FGDs and health care provider's interviews. The App (DiabetesSutra) comprising of three modules (patient, evaluation and healthcare provider) was developed and implemented on the intervention group in addition to routine medical care. Although HbA1c showed significant improvement in both the groups post intervention, a significant increase in knowledge scores was observed only in the intervention group. There was no significant change in knowledge and attitude scores in the control group. Positive changes in dietary, physical activity, blood glucose monitoring and foot care practices were observed in the intervention group. Log book,

nutrition information, plate method and symptom checker were the most utilized features of the App. In conclusion, routine medical care along with a mobile app and reminder messages have the potential to increase the compliance of persons with type 2 diabetes towards their diabetes care regime.

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