# Effect of elimination of various causes of death on life expectancy: An Indian experience

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## Abstract

### Introduction and Rationale

Expectation of life at birth in India has increased considerably from a paltry 20.1years during 1911-20 to 66.1years in 2006-10. In India too, as the epidemiological transition theory suggests, the deaths due to Communicable diseases have gone down and the deaths due to non-communicable diseases have increased over the periods of time. Even though the state was able to reduce the burden of communicable diseases considerably through various public health measures, the proportion of deaths due to them are still significant.

### Objective:

This paper analyses the effect of various leading causes of death in India on the expectation of life.

### .Materials and Methods

The data for this study are from the 'Report on causes of Death in India 2001-2003' and the 'SRS based abridged life tables 2003-07 to 2006-10' published by the RGI.Cause elimination life tables are used for the analysis and interpretation of the data.

### Results

The life table analysis shows that the elimination of diseases like 'Tuberculosis', 'Perinatal conditions', 'Diarrheal Diseases' and 'Respiratory Infection' add more years to expectation of life at birth in comparison to other diseases in 'Communicable diseases group'.Among the non-communicable disease group elimination or limiting 'Cardiovascular' and 'Respiratory' diseases provides the maximum provides maximum increase in the expectation of life.

### Conclusion

Earlier efforts have mitigated the impact of communicable diseases in the Indian society; however they still contribute to a significant number of deaths in India.  Limiting the 'Communicable, Maternal, Perinatal & Nutritional conditions' can contribute to saving a lot of potential years of life.
**Keywords:** India, Cause elimination life tables, Epidemiological transition, Expectation of life

# Action Oriented Colour Coded Foot Length Calliper for Primary Health Care workers as a proxy for Birth Weight and Gestational period

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## Abstract

### Introduction and Rationale

 Birth Weight (BW) is widely accepted measurement of growth of the baby. The 'At Risk' baby due to low birth weight (LBW) remains undetected due to not weighing of babies as in governed health centres some times weighing machines are not functional. Under circumstances as foot length (FL) has a good co-relation with BW and gestational age (GA), could be used as proxy measure. FL can be measured without much handling of baby and is not affected by time lapse of a few days between the birth and the measurement.

### Objective:

To develop an appropriate technological tool to identify risk status of babies associated with BW and GA.

### Materials and Methods

BW, GA and FL of all consecutive singleton apparently healthy newborns, born to apparently healthy mothers knowing their Last Menstrual Period were included during period of 6 months. Cutoff values for FL were determined by ROC curve analysis for BW and GA groups. Same data on 107 newborns were collected during one month period to validate cutoff values.

## Results

Data of 615 neonates revealed that the correlation of FL with BW and GA was 0.714 (p<0.001) and 0.521 (p<0.001). ROC curve analysis determined FL cutoff values 6.1, 6.8 & 7.3cm for identification of babies for BW <1500, <2000 and <2500gm while 6.1, 6.8 and 7.0cm for identification of GA <32, <34 and <37wks. FL ≤7.3cm identified 22 out of 27 babies with BW <2.5kg and out of 23 with FL ≤7.0cm, all 8 (34.8%) were having GA <37weeks.

**Conclusion** Cutoff FL of 7.3cm has high sensitivity in identification of LBW babies as well as preterm LBW babies.

# Quantitative and qualitative analysis of Randomized Controlled trials in Physiotherapy from India.

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## Abstract

**Introduction and Rationale**

Increased scope of Physiotherapy (PT) practice also has contributed to research in the field of PT. It is essential to determine the production and quality of the clinical trials from India since, it may reflect the scientific growth of the profession. These trends can be taken as a baseline to measure our performance and also can be used as a guideline for the future trials.

**Objective:**

To quantify and analyse qualitatively the RCT's from India from the period 2000-2013'May, and classify data for the information process

**Materials and Methods**

Studies were searched in the Medline database using the key terms "India", "Indian", "Physiotherapy". Clinical trials only with PT authors were included. Trials out of scope of PT practice & on animals were excluded. Retrieved valid articles were analysed for published year, type of participants, area of study, PEDro score, outcome measure domains of impairment, activity, participation, 'a priori' sample size calculation, region.

**Results**

47 valid articles were retrieved from the year 2000-2013'May. The majority of articles were done on symptomatic participants (81%). The frequencies of conditions repeated more were low back pain (n-7) and diabetes (n-4).PEDro score with mode 5 and upper limit of 8 and lower limit 4 was found. 97.2% of studies measures the outcome at the impairment level, 35.1%   in activity level, 27.8% in participation level.29.7% of studies did 'a priori' sample size calculation. Correlation of year trend and PEDro score found to be not significant (p>.05). Individual PEDro item analysis showed, randomisation(100%),Concealment(33%)Baseline(76%),Blin dingSubject,Therpist,assessor(7.1%,0%,23.1%),follow-up(89%)ITT(18%),statistics between groups(100%), measures of variance(87.2%).

**Conclusion** The trend shows an upward slope in terms of RCTs published from India which is a good indicator. The qualitative analysis showed some gaps in the clinical trial design, which can be expected to be, fulfilled by the future researchers.

**Keywords**: RCT, India, PEDro.

# Sampling Issues in Research Methodologies

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## Abstract

### Introduction and Rationale

Research is an academic activity and as such the term should be used in technical sense. It refers to systematic method consisting of enunciating the research problem, formulating a hypothesis, collection of facts or data , analysing the facts and reaching certain conclusion either in the form of solution(s) towards the concerned problem or in certain generalised formed theoretical formulation. The purpose of research is to discover answer to question through the application of scientific procedures. This lecture is a discussion on sampling in research mainly designed to equip beginners with knowledge on general issues on sampling, its purpose, types of sampling design and guide for deciding the sample size to get the quality results findings.

# Risk Screening of Expectant Mothers at Community level In Western Development Region of Nepal

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## Abstract

### Introduction and Rationale

In "Risk Care Approach " identification of high risk pregnancies at an early stage at community level helps anticipate complications and timely care to reduce mortality and morbidity.

**Objective:** To screen the Risk status of Pregnant mothers at community set up using a simple scoring system and validate cut off point.

**Materials and Methods :** A prospective cohort of 187 antenatal cases at Western Region of Nepal were followed up using a scoring system of 28 prenatal and 16 intrapartum factors.

**Results :** Out of initial 187 cases , 75.4% were in low risk group, 24.6% in high risk group. Subsequently 96.5% low risk cases remained low while 4.3% were converted to high risk status.80.43% initial high risk cases were converted to low risk group but in 19.57% status remained unchangedOut of 46 high risk cases the neonates of 21.74% had unwanted outcome while out of 141 low risk cases 3.65% had the same. The unwanted outcome includes low birth weight and neonatal death. (P<.ooo3).It is seen that the frequency of unwanted outcome increases with the

increase in risk score. For mothers with no risk score the incidence is Zero. For mothers having 5 risk factors the frequency is as high as 36.36%.If the risk scores are arranged in the descending order of magnitude & risk scores of 5 ,4 and 3 are used to define the high risk group , the scoring system would identify different numbers and percentages in the four categories viz. true and false positive and true and false negative.Cut off point of risk score 3 in the present scoring system gives a satisfactory balance between predictive powers of positive and negative tests and proves effectiveness of the test. This is reinforced by the levels of relative risk scores and "sensitivity" and "Specificity" of the test with maximum average 72.87% in comparison to other scores, proving score '3' as the optimum cut off score point.

**Conclusion** : The study suggests that a simple scoring system to screen out the at risk expectant mothers by identifying risk factors present in them at community level is possible with the available resources within the frame work of present health care system.

**Keywords**: Risk Scoring , ANC, Western Region, Nepal

# Some Statistical Issues in Research on Vulnerable Population

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## Abstract

**Introduction and Rationale**

Vulnerable population are those groups of population which bear unequal burden in research because of their easy availability in the settings where the research is being conducted. These type of population include prisoners children pregnant women subordinate employees in an organisation since there might be a possibility that they might join as research participant under compulsion because of less autonomy. It is expected from the research system that the benefits and risks are equally distributed among all sections of population and rights of vulnerable population are protected. There is obvious need to have well defined ethical principles which currently ICMR guidelines

# Distance Correlation Coefficient:  An Application with

# Bayesian Approach in Clinical Data Analysis

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## Abstract

**Introduction and Rationale:**

The significance of dependence occurs in various filed of applications. It is important to compute the structure of dependence between bivariate and multivariate data. Distance correlation coefficient is a choice to explore the relation between variables.  It is based on product-moment approach.   It becomes zero if the vectors of the random variables are independent.The Bayesian approach is power full tool to draw the statistical inference with credible intervals.   The aim of this paper is to illustrate the application of Bayesian approach in Distance correlation coefficient with prior information. The prior information about the relation between BP and Serum cholesterol was applied to formulate the distance correlation between them.  The conjugate prior is considered to formulate the posterior estimates of the distance correlations.   The illustrated method is simple and handy.   It can be suited in other experimental studies.

# A Demographic study of Homicide in Thrissur area of Kerala

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## Abstract

**Introduction and Rationale:**

Homicide is a global problem and incidence and trends vary from place to place. To know the regional incidence, sex, age and religious relationship, relation between the deceased and the accused, commonly used methods, fatality, cause for the ideation, clinical and postmortem examination findings etc a six year study was conducted during the period 2001 to 2006 at Thrissur Government Medical College retrospectively. It was a descriptive study. The detail note preserved in the department of Forensic Medicine was used for the study and all the notes of postmortem examination done during this period was perused and the homicide cases were selected for detail study. The data are entered in the printed proforma and were analyzed with Epi Info Version 3.5.4 and Tableau statistical software. Males outnumbered the females (1.98: 1) and the highest incidence being in the third decade of life. The age ranged from new born (n=26 (4.4%) to 82years with the maximum number seen in the age range from 20 to 29 and 30 to 39 years of age. Large number of cases are from Hindu community compared to Christians and Muslims (73:13:14).Found dead in a murdered state are the maximum (20%) and the mothers killing their children due to various reasons were more (13.7%). In 42 cases ( 10. 3%) the husbands are the accused. Blunt injury to head found to be the commonest method (15.4%) used. In 30 cases (07.4%) strangulation was the method used. Moral deterioration, familial disharmony and financial problems were found to the main causes which are found to be correctable and thus can reduce the incidence.

**Keywords:** Homicide, blunt injury head, infanticide, familial disharmony.Oral Presentation.

# Comparative study of foot length cutoff values derived from three statistical methods in identification of low birth weight babies

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## Abstract

**Introduction and Rationale:**

Birth weight plays significant role on health. Low birth weight (LBW, birth weight <2500 grams) is a major public health problem in developing countries including India. An early identification and prompt referral of LBW newborns is vital in preventing neonatal deaths. Among various anthropometric measurements used as a proxy for birth weight when weighing facility is not available, foot length is an easy anthropometric measure in identification of LBW baby as it requires very less handling of the baby.

**Objective:** To determine cutoff values of foot length that most correctly classify a baby in an appropriate birth weight category**.**

**Materials and Methods :** 615 consecutive birth weights and foot lengths of normal single born babies born in a teaching hospital from Western Maharashtra were included to determine foot length cutoff values. Statistical techniques Mean ± 2SD, ROC curve and discriminant analysis are used to determine the cutoff value(s). After determination of cutoff values, 107 newborn babies' birth weights and foot lengths were recorded to assess correct predictive ability of the cutoff values.

**Results :** The sensitivity and false positive values were found to be varying by statistical techniques as well as by birth weight categories

**Conclusion** : The study revealed that cutoff values determined by ROC curve technique classified high proportion of babies in correct category.

**Keywords :** LBW, foot length cut off, ROC curve analysis

# Knowledge, attitudes and practices on medical researches among intern medical officers in Sri Lanka

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## Abstract

**Introduction and Rationale**

As more enthusiasm is focused on evidence based medicine, research skills become an essential competency of a modern medical officer. It is important to assess knowledge, attitudes and practices on researches among intern medical officers as they are at a crucial stage of career.

**Objective:** To describe knowledge on research methodology and attitudes and practices on researches among interns and determine their correlates.

**Materials and Methods :** A descriptive cross sectional study was conducted among intern medical officers in Galle district. All currently serving interns of all hospitals in Galle district were invited and a self administered questionnaire was used. Knowledge was assessed by 15 items with a composite score. Maximum was 20 and 10 or above was considered as satisfactory. Practices and attitudes components were consisted of 5 and 7 questions respectively. Again a composite score of 15 was calculated for practices and above 8 was taken as satisfactory.

**Results :** Among all interns, 73 were participated (response rate was 90.1%). Mean age of study population was 27.9 (range 26-30) while majority of them were females (54.8 %). Most of them were products of Ruhuna medical faculty (n=37,50.7%) while Colombo(n=12) and Peradeniya(n=11) graduates were followed in number.

Only 17 (23.3%) showed satisfactory level of knowledge while female interns obtained a higher score though it was not statistically significant (p value 0.86). Among graduates from Colombo faculty, 50% scored above 10 while interns from all other faculties showed a poor level.

Only 13.7% showed satisfactory level of practices as 15% of interns only had at least a single research publication. Among all 56.2% acknowledged that conducting researches is an essential responsibility while 83.6% indicated that their knowledge on research methodology should be improved.

**Conclusion :** Overall knowledge and practices on research methodology is not satisfactory among intern medical officers. Therefore more exposure during undergraduate and in-service training is recommended.

# Video based fall prevention programme on balance among older adults

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## Abstract

**Introduction and Rationale:**

The frequency of falling in older population increases with age.

Banes C, Tully S had designed an Interprofessional Falls Prevention Program of 12 weeks, with group education, exercise sessions, follows up visits and individual counseling for improving physical function, balance and reducing the fear of falling in seniors with a history of falls. The tools used were Berg Balance Scale, timed up and co test, Falls Efficacy scale and Morse Fall Risk scale and the result showed that there were improvement in the participants balance, strength, functional mobility and fear of falling.

A key component of health related quality of life is the ability to take care of oneself and function independently[4]. For the prevention of falls; assessment, exercise, attention to coexisting medical conditions and environmental inspection and hazard abatement is necessary.

The main purpose of study is to assess the balance and effectiveness of video based fall prevention programme on balance among older adults and the findings can be used to educate older adults to improve their balance and thereby preventing falls.

**Objective:**

1. Assess the balance of older adults residing in old age homes of Mangalore.

2. Assess the effectiveness of video based fall prevention program on balance among older adults.

3. Find out the association between balance among older adults and selected variables.

**Materials and Methods :** An evaluative approach with one group pre test-post test design was used. The sample consists of 70 adults from which the baseline data was collected by using demographic proforma and balance by Berg Balance Scale. Among the 70 individuals majority of elderly persons 56(80%) had low fall risk and 14 (20%) had medium fall risk. 14 from medium fall risk and 36 sample who had a high score from the low fall risk category making a total of 50 samples were included for the video based fall prevention programme. From the 3rd day, exercises were taught to them and were instructed to practice the exercise

twice weekly for 30 to 45 minutes for duration of 4 weeks. On 5th week a post test was conducted to assess the gain in balance.

Results: Mean pre-test balance scores of elderly persons were 41.78, whereas the post-test mean scores were increased to 42.86, which showed slight improvement in the balance level after intervention. Hence video teaching programme is effective strategy for improving balance among older adults. It has also found that there was no significant association between pretest balance and selected variables like age, marital status, type of family, religion, source of income and length of stay in institution.

**Conclusion** : The pre-test findings showed balance among the older adults was inadequate before administering the video based fall prevention programme, the post test scores showed slight improvement in the balance among older adults. Hence it was concluded that planned video teaching programme was an effective method to improve the balance among the older adults

**Keywords :** balance, elderly, fall prevention, old age home