



# Bharath

## INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)  
(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4<sup>th</sup> July 2002)



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173, Agaram Road, Selaiyur, Tambaram,  
Chennai - 600 073. Tamil Nadu.

Ref. No.SMS-2018-O-04

Date: 16.08.2018

TO

Ms. S.Latha  
Assoc. Professor/Microbiology,  
BIHER.

Thro: Concern Head of the Department

Greetings!!!

We are happy to announce that the Research Advisory Committee has approved your proposal for Seed Money Scheme-2018 which was presented by you. You are requested to complete the proposal and send the progress report to the Dean Research in the prescribed time period.

**Title of the Project: Assessing the existing knowledge on diabetes to create awareness on its root cause**

**Seed Money Amount: Rs.1, 00,000/- (Rupees One Lakh Only)**

**Approved on: 06.08.2018**

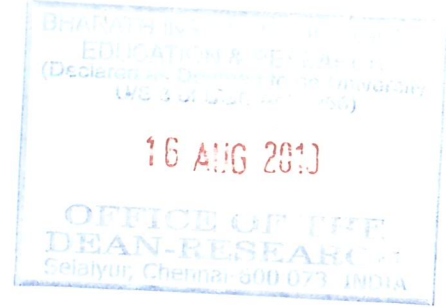
**Payment details:**

**Voucher No.49**

**Dated: 22.08.2018**

With Regards

Dean-Research



# Sharath University

SELAIYUR, CHENNAI - 600 073, TAMIL NADU, INDIA.

## CASH / PAYMENT VOUCHER

Date 22/08/2018  
V.No. H9

Debit \_\_\_\_\_ Amount \_\_\_\_\_

**Rs.**

PAID TO Dr. S. Latha

RUPEES One lakh only

TOWARDS Seed Money Scheme-2018



S. Latha

Payee's Signature

Cashier/Accountant

Finance Manager

Authorised by

## PROPOSAL SUBMISSION

### 1. Details of Principal Investigator

**Name** : Dr. S.Latha  
**Designation** : Associate Professor  
**Highest Qualifications** : Ph.D.  
**Department** : Physiology  
**E-mail** : [lathaviji.kumar@gmail.com](mailto:lathaviji.kumar@gmail.com)  
**Contact no** : 9445451480  
**Date of Joining** : 2.1.2014

### 2. Details of Principal Investigator

**Name** : Dr.R.Vijayakumar  
**Designation** : Professor  
**Highest Qualifications** : Ph.D.  
**Department** : Physiology  
**E-mail** : [sivanviji@gmail.com](mailto:sivanviji@gmail.com)  
**Contact no** : 9445383846  
**Date of Joining** : 2.1.2012

## Technical details

### 1. Introduction:

Glucose is a ubiquitous fuel in biology. High blood sugar levels stimulate the release of insulin, which increases the uptake of glucose by the cells to be used as energy and excess glucose will be converted as glycogen, stored in the liver and muscle cells, or used in the production of fats (insulin + Glucose) in adipose tissue. When the blood glucose level begins to drop several hours after food intake, results in decreased insulin production and rise in glucagon secretion which stimulates breakdown of stored glycogen into glucose which is released in blood stream to maintain the blood glucose level at 80 mg/dl. If the stored glycogen also depleted, then liver and muscle cells use fatty acids as fuel by breakdown of fat in the adipose tissue. When there is a lack of insulin secretion or cell resist to uptake glucose even in the presence of insulin leads to “diabetes mellitus.” Diabetes mellitus arises when insufficient insulin is produced, or when the available insulin does not function correctly, result in an abnormally high amount of glucose in the bloodstream causing from frequent urination to premature death. During 2012 about 1.5 million deaths due to diabetes making 8th leading cause of death.[1]

Diabetes prevention and effective management of diabetes should be a public health priority to reduce death and financial burden, warrants new research on preventive efforts rare than treatment. Awareness and education are the key role especially in screening, control, and better management for various diseases including diabetes and various researches also carried and presently more than 80% of the population well aware about diabetes, but still, India is second largest, next to China in diabetes population. About 99% of the awareness studies and education based only on treatment aspect such as symptoms, screening, management, and complications but none of the studies highlighted the awareness on preventive aspects by creating knowledge and awareness on the root cause for diabetes for which the people must be sensitized.[3] Although awareness and education are key role for better management but everyone at least graduates should aware about the basic knowledge on root cause for diabetes, by which they can create awareness among their family members, friends, and nearby population by which themselves will change their lifestyle, what to have, when to have, how much to have, what to do, what should avoid, etc.

The present study was designed to make an attempt on the preventive aspect to assess the existing knowledge on diabetes to create awareness about the root cause for diabetes among those who completed their science graduation from in and around Pondicherry, India, using a structured, pre-tested questionnaire.

### 2. Review of status of Research and Development in the subject

International Diabetes Federation. (2013). *Clinical guidelines task force: Global guideline for type 2 diabetes*. Brussels: International Diabetes Federation. Retrieved from [www.idf.org/diabetesatlas](http://www.idf.org/diabetesatlas).

Type 2 diabetes is on the increase as a result of obesity, aging, physical inactivity, history of gestational diabetes, impaired glucose tolerance, family history of diabetes and race/ethnicity (CDC, 2011). Thus, modifying factors such as obesity, poor diet and nutrition, physical inactivity, smoking, among others, can reduce the risk of type 2 diabetes (IDF, 2017). Blacks, specifically African Americans, are for instance 1.7 times more likely to develop type 2 diabetes than Whites are, and they are more likely to experience more disabilities from complications of diabetes (Centers for Diseases and Prevention [CDC], 2011). In fact, the death rate for blacks with diabetes is 25% higher than the death rate for whites (CDC, 2011). Over the past 30 years, prevalence of diabetes among blacks has quadrupled (IDF, 2013).

The prevalence rate of diabetes in Ghana in 2014, was 3.3% with 450,000 people (20–79 years) with diabetes and 337,900 adult cases undiagnosed (IDF, 2017). In 2017, 518,400 Ghanaians had diabetes with 257,600 adult cases undiagnosed and a prevalence rate estimated at 3.6%. The increase in prevalence (in 2017) by 0.3% is evident in increasing cases of diabetes in Ghana, as well as the cost of treatment. Treatment of diabetes in Ghana in 2014 cost \$148.4, per person and diabetes-related deaths recorded in that year was 8528 (IDF, 2017). This cost of treatment decreased in 2017 to \$106.5 although deaths recorded increased to 9778 (IDF, 2017).

### **2.1. International Status:**

Globally 422 million people living with diabetes during 2014, and the prevalence rate is 8.5 percentages (%). The prevalence of diabetes has been steadily increasing and most rapidly in low- and middle-income countries, and about 62% of people with diabetes were undiagnosed with the prevalence may still bound to increase several folds. China, India, and the USA are among the top three countries with a high number of the diabetetic population.[2] In India, numbers climbed from 11.9 million in 1980 to 64.5 million during 2014. Prevalence of diabetes has more than doubled for men 3.7% (1980)–9.1 % (2014) and 80% (4.6%– 8.3%) among women population in India. It has been estimated that the globally annual expenditure cost for diabetes is more than USD 827 billion, which impose a large economic burden on the health-care system.[3]

### **2.2. National Status:**

NIL

### **3. Progress/ achievement so far, if any**

- a). Reference papers was collected.
- b). Literature survey was studied.
- c). Materials and methods were designed.

## 4. Work plan

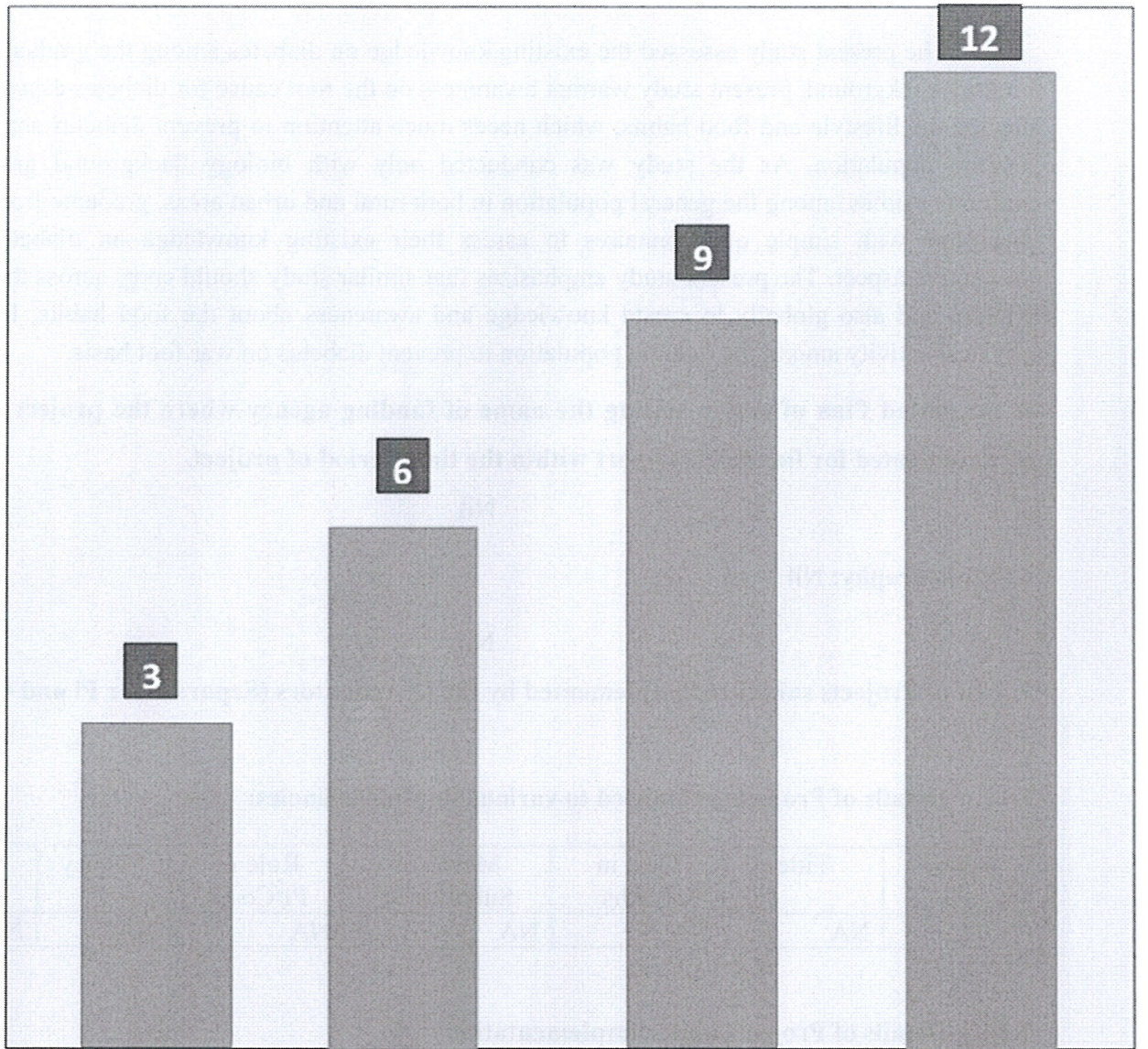
### 4.1 Methodology

The study was carried between January and June 2017 from in and around Pondicherry, India, and Institutional Ethics Committee approval was obtained. The study was conducted among 642 graduates includes Medical (MBBS), Paramedical (BDS, Nursing, Physiotherapist), and Arts and Science (Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology, Zoology, and Biotechnology) who voluntarily participated. A briefing was given about the objective of the study, and confidentiality was assured in the collection of personal data. A structured and pre-tested questionnaire relevant to existing knowledge relevant to the root cause for diabetes, complication, and its symptoms, was assessed. A scoring mechanism was used for each correct answer by awarding one score. After collecting the filled questionnaires, in detail about the cell membrane, importance about omega-3 essential fatty acids and cis-unsaturated fatty acids, what food to take and not to take, how diabetic complication developed, symptoms, management, and how to prevent were explained for about 15 min.

### 4.2 Time Schedule of activities giving milestones through BAR diagram. (Maximum of 1/2 pages)

S. No	Activity/ mile stolen	1 <sup>st</sup> Year			
		1-3 month	4-6 month	7-9 month	10-12 month
1	Literature review	1-3 month			
2	Analysis of existing work	-	4-6 month		
3	Designing & work initiated	-	-	7-9 month	
4	Statistics & Discussion with results	-	-	-	10-12 month

Month



1

2

3

4

Duration

#### 4.3 Expected outcome within the time period of See Money Scheme

The present study assessed the existing knowledge on diabetes among the graduates with biology background, present study warrant awareness on the root cause for diabetes especially to change the lifestyle and food habits, which needs much attention to prevent diabetes among the healthy population. As the study was conducted only with biology background graduates, warrants studies among the general population in both rural and urban areas, graduate from other discipline with simple questionnaires to assess their existing knowledge on diabetes with preventive aspect. The present study emphasizes that similar study should carry across the State, Nation, and also globally to create knowledge and awareness about the food habits, lifestyle, physical activity among the healthy population to prevent diabetes on war foot basis.

**5. Suggested Plan of action stating the name of funding agency where the project will be communicated for financial support within the time period of project.**

Nil

**6. Bibliography: Nil**

Nil

**7. List of Projects submitted/implemented by the Investigators (Separate for Pi and Co-PI)**

**7.1 Details of Projects submitted to various funding agencies:**

S.No	Title	Cost in Lakhs	Month of Submission	Role as PI/Co-PI	Agency	Status
1	NA	NA	NA	NA	NA	NA

**7.2 Details of Projects under implementation**

Sl. No.	Title	Cost in lakhs	Duration	Role as PI/ Co-PI	Agency
1	NA	NA	NA	NA	NA

**7.3 Details of Projects completed during the last 5 years**

Sl. No.	Title	Cost in lakhs	Duration	Role as PI/ Co-PI	Agency
1	NA	NA	NA	NA	NA

**8. List of publications published by the Investigators, if any:**

**a) Principal Investigator**

S. No	Author names	Title of paper	Name of Journal	Vol (Issue)	Page No.	Year
1.	Sandhya Rani T, R Srikumar, E Prabhakar Reddy, S <b>Latha</b> , Naveen Kumar	Virulence Factors of Candida Species Isolated From Pulmonary Tuberculosis with Diabetes Mellitus.	Indian Journal of Public Health Research & Development	10(5)	10-15	2019
2.	V Shwetha, S Latha, Vineeth K Kumar	Assessment of Salivary Function and Prevalence of Candidal and Noncandidal Oral Soft Tissue Pathologies in Type 1 Diabetics: A Cross Sectional Study	Research journal of Pharmaceutical Biological and Chemical Sciences	7(5)	828-835	2016
3.	V Deepika, R Vijayakumar, S <b>Latha</b> , P Jayakumar	Analysis of Body Fat Composition Using Bioelectrical Impedance Method among Young Normotensives and Pre Hypertensive Individuals	Research journal of Pharmaceutical Biological and Chemical Sciences	7(2)	146-151	2016
4.	<b>S. Latha</b> , R. Venkataramanan, Ramasundaram Srikumar, R. Vijay Kumar	Effect of triphala on noise stress induced alteration in glucocorticoid and carbohydrate metabolism	International Journal of Pharma and Bio Sciences	6(2)	B655-B662	2015
5.	Deepika Veluswami, B Ambigai Meena, S <b>Latha</b> , I Gayathri Fathima, K Soundariya	A Study on Prevalence of Phenyl Thiocarbamide (PTC) Taste Blindness Among Obese Individuals	Journal of clinical and diagnostic Research	9(5)	CC04-CC06	2015
6.	S. Bhagavathy*1 and <b>S.Latha</b> 2	Anticarcinogenic effects of Cinnamomum verum on HL60 leukemia cell lines	Journal of Pharmacy Research	9(12)	650-661	2015

**b). Co-Principal Investigator**

S. No	Author names	Title of paper	Name of Journal	Vol (Issue)	Page No.	Year
1.	R. Yuvaraj <sup>1</sup> , R. Vijayakumar <sup>1*</sup> , G. Bupesh <sup>2</sup> , S. Vasanth <sup>2</sup>	Effect of Saraswatarishta on sleep deprivation induced behavioral changes in mice	Drug Invention Today	12 (8)	1741-1744	2019
2.	Velusami Deepika <sup>1,2</sup> , Raman Vijayakumar <sup>3</sup>	Impact of Body Mass Index on Arterial Stiffness in Young Prehypertensives: A Cross Sectional Study	Journal of Research in Health Sciences	18(1): e00402	1-6	2018
3.	Deepika.V <sup>1</sup> , R.R.Vijaya Kumar <sup>2*</sup> , S. Latha Vijaya Kumar <sup>3</sup> And Dr.R.Srikumar <sup>4</sup>	Impact of body mass index on corrected QT Interval in prehypertensives	International Journal of Pharma and Bio Sciences	8(1): (B)	266-270	2017
4.	S Latha, R Vijaya Kumar, BR Senthil Kumar, G Bupesh, TSV Kumar	Acute and repeated oral toxicity of antidiabetic polyherbal formulation flax seed, Fenugreek and Jamun seeds in Wistar albino rat	Journal of Diabetes & Metabolism	7(3)	1-7	2016
5.	Vijaya kumar R, Kishor kumar.C, Christy A, Sasikala C	Prevalence of Prehypertension among school students in Puducherry	Research Journal of Pharmaceutical, Biological and Chemical Sciences	6(1)	631-637	2015

**9. Budget**

Sl. No	Head	Amount (Rs.)
1	BP Apparatus, Stethoscopes, Body weight weighing machine, SPSS version 16 Chicago, IL, USA, ECG machine	45000
2	Consumables (gels bottles, cotton, sprit, testing charges, tools, etc.)	10000
3	Travel support for the purpose of research work.	10000
4	Contingency	25000
5	Others consumables	10000
	<b>Total</b>	<b>1,00,000</b>

\*In case of any joint proposal for purchasing a same equipment, each of the associated PLs is also required to give separate budget (without any clubbing) to avoid any ambiguity, if all the associated projects are not awarded by committee.

**10. Name of at least two subject experts from the Institute and one from the outside Institute with their contact details:**

<p><b>1. Dr. Dr. Deepika</b> Associate Professor in Physiology Sri Manakula Vinayagar Medical College and Hospital, Puducherry <b>Mobile No:</b> 9962279360 <b>E-mail id:</b> deepy843@gmail.com</p>	<p><b>2. Dr. B R Senthil Kumar</b> Professor in Physiology, National Siddha College, Chennai <b>Mobile No:</b> 9962240516 <b>E-mail id:</b> senthikumarbr@gmail.com</p>
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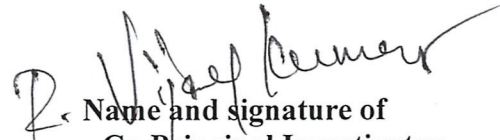
## CERTIFICATE FROM THE INVESTIGATOR

**Project Title: Assessing the existing knowledge on diabetes to create awareness on its root cause: A preventive study**

It is certified that

1. I do hereby agree to submit a complete proposal for financial support to the external funding agency within the time period of SMS-2018.
2. I undertake that spare time on equipment procured in the project will be made available to other users.
3. I agree to submit a certificate from Institutional Biosafety Committee, if the project involves the utilization of genetically engineered organisms. I also declare that while conducting experiments, the Biosafety Guidelines of Department of Biotechnology, Department of Health Research, GOI would be followed in to.
4. I agree to submit ethical clearance certificate from the concerned ethical committee, if the project involved field trails/experiments/exchange of specimens, human & animal materials etc.
5. I agree to abide by the terms and conditions of SMS-2018, BIHER, and Chennai.

  
Name and signature of  
Principal Investigator

  
Name and signature of  
Co-Principal Investigator

**Date: 25.07.2018**

**Place: Pondicherry**

  
**Forwarded by Head of the Department**

**Signature of the Head**

  
**DEAN**  
**SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES**  
OSUDU, AGARAM VILLAGE,  
KODAPAKKAM POST,  
PUDUCHERRY - 605 502

## PROJECT EVALUATION FORMAT


### Recommendation sheet

Name of the Principal Investigator	Mrs. S. Latha
Name of the Co-Principal Investigator	Dr.R.Vijayakumar
Name of the Department	Physiology
Title of project	Assessing the existing knowledge on diabetes to create awareness on its root cause: A preventive study
Recommendation of the evaluation committee (Recommended/Revision/Not Recommended)	Recommended
Financial allocation recommended	Rs. 1,00,000/-

SI. No.	Head	Amount
1	BP Apparatus, Stethoscopes, Body weight weighing machine, SPSS version 16 Chicago, IL, USA, ECG machine	45000
2	Consumables- Gel bottles, cotton, sprit, testing charges, tools, etc.	10000
3	Travel support for the purpose of research work.	10000
4	Contingency	25000
5	Others consumables	10000
	<b>Total</b>	<b>1,00,000</b>

Name and Signature of the Research Advisory Committee members with date.



  
(Dr. G. Jayalakshmi)