

A/c. \_\_\_\_\_

Voucher No. \_\_\_\_\_

# Ramniranjan Jhunjhunwala College, Ghatkopar

Date 31/8/22

RECEIVED from the Principal, Ramniranjan Jhunjhunwala College,

the sum of Rs. One thousand only

towards ISBN Publication Online Frontiers in Life Science Volume VI Bhumi Publication.

Rs. 1000/-

**T 24**  
Amit Choudhary for TDS

*[Signature]*

Signature



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI || NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

The college has sanctioned the Amount of Rs One thousand

to Mr/Ms Shashi Mishra

from Department of Sociology

Designation Associate Professor

towards ISBN publications Frontiers in Life Science volume VI Bhumi Publication

**IQAC Coordinator**

**IQAC CO-ORDINATOR**

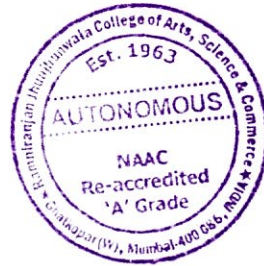
Hindi Vidya Prachar Samiti's

Ramniranjan Jhunjhunwala College of Arts,

Science & Commerce (Autonomous)

Ghatkopar (W), Mumbai-400086,

Maharashtra, India



**Principal**

PRINCIPAL

RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No. Aff./ICD/18-19/440 - 08.06.2018)

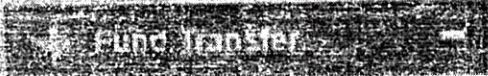
+ Add to

818122  
110552  
18001  
SP=67

ARUNKUMAR V  
MISHRA SHASHI



LAST USED 20/06/2022 10:59:15 IST



Mobile Funds Transfer

Transaction Status

Money to World

Bank Fund Transfer

Generate/Retrieve MMRID

Manage Policies

Pay Bills

Inward Remittance

Recharge



Your payment is Successful.

Please find below the transaction receipt



Transaction Reference Number: 218014400202

Transaction Date: 20/06/2022

From ICICI bank Account



ARUNKUMAR V MISHRA, SHASHI A  
MISHRA

ARUN@ICICI

To Payee



BHUMIPUBLISH

XXXXXX XXXXXXX

Amount transferred

₹ 1,800.00

Transaction Type

Transfer Funds to BH account via  
Other Bank through NEFT path  
[20/06/2022]

Remarks

Shashi Mishra

**DONE**

SAVE AS FAVOURITE

ISBN: 978-93-91768-01-0

# **Frontiers in Life Science**

## **Volume VI**

### **Editors**

**Dr. Shakun Mishra**

**Dr. Balaji Rajbhoj**

**Dr. Suchita C. Warangkar**

**Dr. Sujith R.**



  
*Bhumi Publishing*

**First Edition: 2022**

# Frontiers in Life Science Volume VI

(ISBN: 978-93-91768-01-0)

## Editors

### **Dr. Shakun Mishra**

Department of Botany,  
Govt. S. N. P. G. College,  
Khandwa (M.P.)

### **Dr. Balaji Govindrao Rajbhoj**

Department of Botany,  
Sundarrao More Arts Commerce and  
Science College Poladpur,  
Dist Raigad. Maharashtra

### **Dr. Suchita C. Warangkar**

Department of Microbiology,  
Netaji Subhash Chandra Bose Arts,  
Commerce and Science College,  
Nanded 431605, MS, INDIA

### **Dr. Sujith R.**

Department of Microbiology,  
SRM Institute of Science and Technology,  
Potheri, Chengalpattu Dt., Tamilnadu



*Bhumi Publishing*

**2022**

**First Edition: June, 2022**

**ISBN: 978-93-91768-01-0**



**© Copyright reserved by the Editor**

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: [www.bhumipublishing.com](http://www.bhumipublishing.com)

E-mail: [bhumipublishing@gmail.com](mailto:bhumipublishing@gmail.com)

Book Available online at:

<https://www.bhumipublishing.com/books/>



## **PREFACE**

*Life Sciences have always been a fundamental area of science. The exponential increase in the quantity of scientific information and the rate, at which new discoveries are made, require very elaborate, interdisciplinary and up-to-date information and their understanding. Enhanced understanding of biological phenomenon incorporated with interdisciplinary approaches has resulted in major breakthrough products for betterment of society. To keep the view in mind we are delighted to publish our book entitled "Frontiers in Life Science Volume VI". This book is the compilation of esteemed articles of acknowledged experts in the fields of basic and applied life science.*

*This book is published in the hopes of sharing the new research and findings in the field of life science subjects. Life science can help us unlock the mysteries of our universe, but beyond that, conquering it can be personally satisfying. We developed this digital book with the goal of helping people achieve that feeling of accomplishment.*

*The articles in the book have been contributed by eminent scientists, academicians. Our special thanks and appreciation goes to experts and research workers whose contributions have enriched this book. We thank our publisher Bhumi Publishing, India for taking pains in bringing out the book.*

*Finally, we will always remain a debtor to all our well-wishers for their blessings, without which this book would not have come into existence.*

**Editor**

## CONTENT

Sr. No.	Book Chapter and Author(s)	Page No.
1.	<b>INNOVATIONS, TECHNIQUES AND MODERN BIOTECHNOLOGY INCLUDING GENETIC ENGINEERING PLANT TISSUE CULTURE IN <i>MENTHA ARVENSIS</i></b> Mandalaju Venkateshwarlu	1 - 15
2.	<b>A STUDY ON IMPACT OF STRESS ON EATING BEHAVIOUR AMONG IT EMPLOYEES</b> M. Sivasakthi and G. Ramya	16 - 22
3.	<b>RECENT TRENDS AND ROLE OF CHOLINERGIC TRANSMISSION IN ADVANCED PHARMACOLOGY</b> Anamika P. K., Deborshi Nath, Fahad Aziz Bhat, Jubilee Santhosh and Jayanth N	23 - 33
4.	<b>PANDEMIC OF COVID-19 AND THE SERICULTURAL ENTERPRISE</b> Vitthalrao B. Khyade	34 - 46
5.	<b>POST-TRANSLATIONAL MODIFICATIONS (PTMS)</b> Surendra Kumar, Aranav Yadav and Ankitesh Kumar	47 - 54
6.	<b>FRESH WATER FISH FAUNA OF PANZARA AND KAN RIVERS OF SAKRI TAHSIL, MAHARASHTRA (INDIA)</b> S. S. Bhoi	55 - 62
7.	<b>HYBRID RENEWABLE ENERGY SYSTEM FOR NATURAL RESOURCE CONSERVATION</b> K. Suganya, R. Jayashree, R. Rizam and P. Bhavani	63 - 73
8.	<b>ABATING ETHNO MEDICINAL KNOWLEDGE</b> Manohara Acharya, Ravindra B. Malabadi and Rajukrishna Chalannavar	74 - 78
9.	<b>HEALTH MANAGEMENT PRACTICES FOR SOME IMPORTANT VIRAL POULTRY DISEASES</b> Devendra Singh Porte and Pushpraj Singh	79 - 91
10.	<b>CHILD HEALTH AND NUTRITION IN INDIA</b> Shashi A. Mishra	92 - 96



---

11.	<b>THE POTENTIAL APPLICATION OF THIN CELL LAYER (TCL) CULTURE IN PROPAGATION OF ORCHIDS</b>	97 - 108
	Girish K and Ashok N. Pyati	
12.	<b>CHARECTERIZAION OF CHITINASES AND ANTIMICROBIAL ACTIVITY</b>	109 - 128
	Aboli Kshirsagar	
13.	<b>LYMPHATIC FILARIASIS AND MASS DRUG ADMINISTRATION: A REVIEW</b>	129 - 133
	Dilip Haribhau Dudhmal	

---

## **CHILD HEALTH AND NUTRITION IN INDIA**

**Shashi A. Mishra**

R. J. College of Arts, Science and Commerce (Autonomous)

Ghatkopar (West), Mumbai 400086

Corresponding author E-mail: [sash2mash@yahoo.co.in](mailto:sash2mash@yahoo.co.in)

### **Abstract:**

In human beings life childhood is the period related with physical, mental and social wellbeing. With increasing age there is physical and psychological maturation, which influences activity, body composition, feeding skills and food choices. Perfect diet with nutritional food is essential for overall development in infants and children. Thus Proper intake of nutrition among children is necessary for the physical and mental growth of child. Poor nutrition increases the risk of health illness and is responsible directly or indirectly for children deaths among less than five years of age. Unhealthy food habits and lack of proper nutritional diets leads to obesity among children. While adequate nutrition is important throughout childhood, it is crucial during the first five years of a child's health when rapid growth occurs in the physical structure of child and this is the period where family members, grandparents, caregiver to infants and mother play a very important role to fulfil the nutrition level of the child. Nutrition has major effects on health of every individual and crucial effect on child's health.

**Keywords:** Childhood, food choices, poor nutrition, physical structure

### **Introduction:**

Mental, emotional and physical growth and development depends on the food and nutrition of Child diet. Poor nutrition increases the risk of health illness and is responsible directly or indirectly for children deaths among less than five years of age. Malnutrition refers to any imbalance in satisfying nutritional requirements. Malnutrition among children is often caused by the collective effects of inadequate or improper food intake, repeated episodes of parasitic or other childhood diseases such as diarrhoea. Malnutrition is an important factor for high morbidity and mortality among children. It can also affect growth potential and risk of morbidity and mortality in later years of life. Proper intake of nutrition among children is necessary for the physical and mental growth of children. Infants who are by birth underweight are more vulnerable and are at higher risk towards morbidity. Focusing on the young child's health and their improved nutritional level is directly linked with socio-economic development of nation.

### **Factors affecting child nutrition**

A number of factors affect the health and child nutrition. The most common factors are food availability and dietary intake, breastfeeding, prevalence of infectious and parasitic diseases, access to health care, immunization against childhood diseases, vitamin A supplementation, maternal care during pregnancy, water supply and sanitation, socioeconomic status, and health-seeking behaviour. In India due to illiteracy blind belief, early marriage of girls child bearing years for women increases and due to lack of awareness of proper family planning programme birth interval in two children among rural women is very low. It affects the availability of nutrition level among children which in turn affects the health of child and mother. Inadequate or improper food intake and repeated episodes of infectious diseases adversely affect children's nutritional status and health. If disease like diarrhoea, among children is tackled carefully it will have positive impact on survival rate of children's mental health and personality growth. Sanitation, washroom facilities, supply of clean water is equally important for the positive health of mother and child. Discrimination against girls in feeding and health care are reasons for poorer nutrition and higher mortality among girls than boys in many developing countries.

### **Impact of Malnutrition on Children's Health**

Allover the world 792 people are affected by malnutrition as it is reported by the world health organization. At least one third of them are children. In childhood malnourishment among children's health have very negative effects on their health in terms of **Stunting**. Malnutrition can hinder a child's ability to grow normally, leaving both his height and his weight well under normal when he's compared with children of the same age. Severe malnourishment can lead to permanent damage among child. *Marasmus* is characterized by a lack of nearly all nutrients, particularly protein and calories, severe weight loss, thin and papery skin, hair loss and leads to severe health damage among children. In India protein deficiency among children, known as *Kwashiorkor* is found large in number. Symptoms of kwashiorkor include discoloured, brittle hair that has a copper sheen, rashes, water retention, a distended belly caused by bloating, an enlarged liver. Malnutrition can involve not only insufficient macronutrients such as protein, carbohydrates and fat, but also insufficient micronutrients such as vitamins and minerals and also water.

### **Malnutrition among Children's Health in India**

According to the 2010 Global Hunger Index, India has more hungry people and the highest burden of child malnutrition than any country in the world. Though India is having higher GDP compared to many less developed countries but child nutritional deficiency is very high in India. Close to 1.3 million children die every year in India because of malnutrition.

according to the World Health Organization (WHO). Death among children due to malaria in rainy season, diarrhoea related to unhealthy and unhygienic food, prevalence of pneumonia is very high. Worldwide, over 100 million children are underweight. In India large number of young children are underweight, going through the disease like stunting and child nutritional level ailments.

In India deficiency of vitamins and protein in the body number of anaemic children is high. Although poverty is an important factor, nutritional deficiencies are widespread even in households that are economically well off. Inadequate feeding practices for children make it difficult to achieve the needed improvements in children's nutritional status, and nutrition programmes have been unable to make much impact with these serious nutritional problems. India is in the position of having very high levels of malnutrition despite large stocks of food grains resulting from increased agricultural productivity. Major two situations responsible for child malnutrition are -firstly, a significant proportion of the population remains unable to buy enough food; secondly, the whole population is vulnerable to becoming malnourished due to exposure to diseases like diarrhoea and parasitic infections resulting from poor sanitation and living conditions.

#### **Malnutrition among children: Health in Maharashtra**

According to National Family Healthy Survey 2005-2006 the nutrition situation in Maharashtra is slightly better than the national average with improvements from 1998-99. The feeding practice for children aged 6-9 months shows an alarming pattern with only 48% of children receiving solid or semisolid food and breast milk. 56% less in terms of national average chart requirement. The prevalence drops to 40% for rural areas compared with the national average of 54% and as low as 23.3% for non-educated mothers compared with the national average of 49%. Rural areas of Maharashtra malnutrition is very high. Almost 38% of children under age three are stunted (India - 38.4%) and almost 40% are underweight (India 45.9%). Wasting affects 14.6% of children under age (India 19%). Compared with urban areas, under-nutrition is higher in rural areas and also in Mumbai. In Maharashtra, there is a strong correlation between child malnutrition and the level of maternal education showing a two-fold difference between non-educated and well-educated mothers. Almost 72% of children under age three are anaemic (India 79.2). There is a significant urban-rural divide with Mumbai having the lowest prevalence with 59.5% compared with 76.8% in rural areas. The non-educated versus educated mothers difference is not as strong with 75% and 71% relatively. This may be linked to a more general poor quality of nutrition and hygiene conditions and limited access to iron supplementation. 53% of children are fed only breast milk for the first 6 months (India 46%).

Breast feeding among illiterate women in rural areas as well as in urban area is high. 51.8% of children under three years are breastfed within one hour of birth (India 23.4%) with no significant difference between urban and rural areas and between well-educated and non-educated mothers. Only 47.8% of children aged 6-9 months receive solid or semisolid food and breast milk. 32% of children age 12-35 months received vitamin A supplements in the six months (India 23%) with the highest prevalence in urban areas (34.2%) followed by rural areas (29.9%) and in Mumbai (27%).

### **Factors Affecting India's Nutritional Health Challenges**

Population growth, unemployment, livelihood issues, fragmentation of land holding, contractual jobs has reduced purchasing power and led to poverty in Indian society. India's rapid urbanization and overcrowding makes households vulnerable to malnutrition by reducing access to support services, healthcare, clean water, and sanitation. Gender equity is considered as a particularly strong factor in the high rates of maternal and child malnutrition seen in South Asia; women are undervalued in society and eat least and last. National rates of child anaemia, caloric deficiency, and child illness also point to non-optimal feeding practices, which in turn reflects poor maternal nutritional status, economic limitations, sociocultural settings, high fertility rates, limited access to education, and mothers' young ages. India's notably low public health expenditures compound issues of access. These wide factors show that undernutrition follows lines of high and rising levels of inequity in the country. Compare to urban area in rural areas malnourishment and undernourishment is very high. Main reason is poverty which is widely prevalent in rural areas. Children from scheduled tribes have the poorest nutritional status on nearly every measure, and the highest prevalence of wasting among under-fives.

### **Government's Initiatives in India towards Child's Health and Malnutrition**

To check malnutrition, is one of the top agendas in the priority list of the government. Indian Government has implemented various developmental schemes and approach to curb the issues of malnutrition by adopting various sectoral approach. Integrated Child Development Services (ICDS) specially programmed for lactating and pregnant mothers and children below the age of 3, National Rural Health Mission (NRHM), Mid Day Meal Scheme (MDM), Rajiv Gandhi Scheme for Employment of Adolescent Girls (RGSEAG), Indira Gandhi Matriyo Sahayog Yojana (IGMSY). However, in spite of the sincere efforts of the government, gaps exist between the government envisaged nutrition programs and their actual implementations due to various factors like lack of voluntary manpower in the different states. Madhya Pradesh has the highest malnutrition rate (55%) and Kerala the lowest (27%). Even today one in three children in India are stunted, therefore the Niti Aayog has come out with a national strategy to fight maternal and

child malnutrition and anaemia. The focus is on 100 poor performing districts in terms of stunting zero. The national nutrition strategy aims to bring nutrition to the centre stage of the National Development Agenda and has outlined a vision of Khuposhan Mukht Bharat (Malnutrition Free India), reducing all forms of malnutrition by 2030.

### **Way Forward**

Each of the factors affecting malnutrition are extremely complex and emphasizes that there are significant social dimensions to it among children. We must think about such growth among children, where rising incomes and government revenues target improvements in health, nutrition, infrastructure, and education of all. It is also important to emphasize that India is an enormous and diverse country, and much of health and nutrition programming is directed at the state level. By keeping regional issues and their problems in society steps can be taken to address the problems of malnutrition. It is an important thought process that how India is going to address its nutrition challenges, and what opportunities exist for improvement. In India among infants due to lack of awareness programmes for parents especially to young mothers certain communicable disease like measles and diarrhoea which are highly prevalent in India are responsible for leading into malnutrition and undernutrition among children and infants. Mothers should be made informed about importance of exclusive breastfeeding for six months and continuing to breast feed up to two years or beyond. Other important knowledge which should be conveyed are damage caused by irrational beliefs and cultural practices of feeding, Proper work and implementation by all stakeholders at various levels should be addressed efficiently.

### **References:**

- Basavanthappa, B (2015). Child health nursing. Jaypee Brothers Medical Publishers
- David A. S. (2022). Global maternal and child health. Series Editor
- Jonathan, B. K. (2012). Maternal and child health: programmes, problems and policy in public health. Jones and Bartlett Publishers.
- Klaus V. G. *et al.* (2010) Global Hunger Index: The challenge of hunger, Focus on the crisis of child undernutrition, IFPRI, Concern worldwide
- Michaelsen K. *et al.* (2003), Feeding and Nutrition of infants and young children, World Health Organisation, Regional Office for Europe Copenhagen
- Ministry of Health and Family Welfare Government of India. (2007), National Family Health Survey (NFHS-3) 2005-2006