

TIP
LITERARY FINDINGS

ISSN: 2278-2311

JULY – 2015

ISSN:2278-2311



KONGUNADU PUBLICATIONS (INDIA) PVT.LTD



TIP

THE INDIAN PAGES

LITERARY FINDINGS

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

ISSN: 2278-2311

VOL: 4

JULY - 2015

ISSUE: 3

Editor

Dr. P. Sathyamoorthy

Madurai Kamarajar University
Madurai.

Editorial Board

Dr. C. Thiyagarajan

Annamalai University, Chidambaram.

Dr. G. Ramesh

Thiruvalluvar University, Vellore.

Dr. S. Srinivasan

Sri Venkateshwara College,
(Delhi University), New Delhi.

R. Chandrasekaran

Aringar Anna Arts and Science College, Namakkal.

Dr. K. Sankaranarayanan

University of Madras, Chennai.

Dr. S. Aranganathan

Tamilnadu open University, Chennai.

Dr. K.Kala

Joint Director of Collegiate Education, Trichy.

Dr. L.R. Gopinath

Vivekanandha Educational Institutions, Namakkal.



Kongunadu Publications (India) Pvt.Ltd

194, Kanna Complex, 2nd Floor,
Mettur Road, Erode – 638 011.

Ph: 0424 – 4562211

E-mail: kongunadupublications@gmail.com

Web: www.kongunadupublications.com

TIP

LITERARY FINDINGS

GUIDELINES FOR AUTHORS

TIP (The Indian Pages) a new bilingual International Journal(English & Tamil) being published from the house of **KONGUNADU PUBLICATIONS (INDIA) PRIVATE LIMITED**, Erode, Tamil Nadu, with ISSN (index in Google Scholar & DOAJ)

This journal is mainly devoted to research and scholarly views on broad issues in the field of **Arts, Science and Commerce**. The journal provides specialized opinion in the field of **Arts & Science** and will also bring out meaningful notes and research papers. And the Articles are welcomed at the most.

TIP (The Indian Pages) accepts only electronic submissions via e-mail as attached documents (**Microsoft word only**) which **must include Name, affiliation and country in the body of your submission**. (Submission must be in single attachment) Authors are requested to follow the **MLA** style strictly while preparing the articles. Authors are also requested to include the following in the format of their articles.

- Type area on a page should of standard size A4
- Uniform font (Times Roman) may be used
- Paragraph setting may be set as 1.5 lines

- Where ever necessary chapter should begin with a brief Abstract and key-words.

- Paper Title, Author Names/Affiliations, Abstract and Keywords should be specified accordingly.

1. ORDER OF THE CONTENT

The order of the content must be as per following sequence;

1. Title Page with Authors details (Including emails and affiliations)
2. Abstract & Keywords
3. Introduction
4. Methods, if applicable / any
5. Results, if applicable / any
6. Conclusions
7. Acknowledgements, if applicable / any
8. References
9. Appendices (if applicable / any)

2. FIGURES (Line Art Drawings) AND TABLES

Figures and tables may appear printed directly in the text and should be black and white or grayscale. Figure should appear soon after the citation in the text or if it is too large at the end of the manuscript. Legends/Captions for figures A caption should be provided for each figure.

TABLES

Indent tables slightly from the left margin, if it is necessary to use the full width of the page. Tables should be kept to a minimum and be designed to be as simple as possible. Tables are to be typed double - spaced throughout, including headings and footnotes. Each table should be on a separate page, numbered consecutively in Arabic numerals and supplied with a heading and a legend. The same data should not be presented in both table and graph forms or repeated in the text.

individually. For further clarification contact us: tip.theindianpages@gmail.com.

3. REFERENCES

References text type should be 10 point (Times Roman). In the text, a reference identified by means of an author's name should be followed by the date of the reference in parentheses. When there are more than two authors, only the first author's name should be mentioned.

4. SUBSCRIPTION FEE

Annual Subscription Fee for Individuals Rs. 1500/-, Institution Rs. 2000/- , Life Subscription Fee Individuals & Institution Rs. 10000/ in India.

5. MODE OF PAYMENT

Payment can be made by DD infavour of **KONGUNADU PUBLICATIONS INDIA PRIVATE LIMITED** payable at **ERODE** and address to **KONGUNADU PUBLICATIONS (INDIA) PRIVATE LIMITED** REGD OFF: 194, KANNA COMPLEX, 2ND FLOOR, METTUR ROAD, ERODE – 638 011. Payments can also be made via net banking. **A/c Name: KONGUNADU PUBLICATIONS INDIA PVT.LTD. A/C Type: CA, A/C No:1619135000005931, Bank: KVB, V.Chatram, ERODE – 638 003. IFSC: KVBL0001619** and the same may be intimated.

6. SELECTION OF ARTICLES

Our eminent Editorial team will scrutinize the articles and select for TIP without any bias. On selection the authors will be intimated

CONTENTS

1. Impact of Kamaraj's Administration	- P. Devaraju	5
2. Educational Myopia	- Dr. A. Mary Delphine	9
3. Activities of Government of Madras State in Health and Sanitation during the Period 1951 To 1957	- M. Sandhiya	13
4. Kalidasa's Portrayal of Women In <i>Sakuntala</i>	- Mr. A.Cruz Thivagaran	15
5. Women - Emotional Absues in Arundhati Roy's <i>The God of Small Things</i>	- U.Anbarasi	17
6. English Language – Diaspora Language	- P. Amudha	22
7. Exilement of Sita in Ramayana: A Critical View	- Dr.S.Radhika, Ms. K. Gowthami	24
8. Symbolism in Robert Frost's Poetry	- P.Mythili	28
9. EFFECTIVENESS OF EDU-DIGITAL SKILL AMONG COLLEGE STUDENTS IN VILLUPURAM DISTRICT	-Dr. N. MADHAVAN	30
10.PRICE SATISFACTION OF CO-OPERATIVE MILK PRODUCERS' IN KRISHNAGIRI TOWN	-Dr. N. SULAIMAN	35
11.HEALTH PROBLEMS OF ALCOHOLISM IN VILLUPURAM DISTRICT	-Dr. N. MADHAVAN	39
12. Digital HR Transformation – An empirical Study	-Dr. M.G.Loganathan	45
13. Isolation and Identification of Actinomycetes With Effective Antimicrobial Activity From Rhizosphere Soil of <i>Ocimum sanctum</i> and <i>Acorus calamus</i>	-Dr. L. R. Gopinath, Dr. K. Kala, A. Arunadevi, S. Reshmi & K. Premalatha	52
14. HERITAGE TOURISM IN KANYAKUMARI DISTRICT: WITH REFERENCE TO STRATEGIC FORTS BUILT BY DE LANNOY	-J. MUTHUKUMAR	59
15. திருமாலின் திருவுள்ளம் திளைப்பது திருவரங்கம்	-(முனைவர் எ.கற்பகம்	64
16. Alcohol-Associated Disorders: Pathophysiology, Manifestations and Treatment Strategies	-Dr.M.Shenbagam	68

IMPACT OF KAMARAJ'S ADMINISTRATION

P. Devaraju

*Part – Time Ph.D Scholar in History
Research and Development Centre
Bharathiar University, Coimbatore – 641 046
Tamil Nadu, India.*

INTRODUCTION

Kamaraj had already become the Leader of the Congress Party of Madras. The resignation of Rajaji paved the way for Kamaraj to succeed him as the Chief Minister of Madras. He was elected as the Leader of the Congress Legislature Party of the Madras state, with a sizeable majority. C.Subramaniam who opposed him in the election was defeated. Still Kamaraj never had any animosity to make him as his cabinet colleague. The first Congress ministry thus formed under the Chiefministership of K.Kamaraj had to work hard to safe guard the name and fame of the Congress Party which worked so hard in the freedom struggle, all those earlier years.

Kamaraj was sworn in as Chief Minister of Madras on 13 April 1954.¹ It was the dawn of a new age for state. Kamaraj the Chiefminister was a study in contrast with Kamaraj, the party boss. While he was the party president, he had been quick to anger and hit back at political rivals, as Chiefminister he was accommodating and gracious in victory.

C.Subramaniam had been his chief rival. He was a long – time Rajaji loyalist and no friend of Kamaraj. M.Bhaktavatsalam, a former supporter who had turned against Kamaraj, had proposed his (C.Subramaniam's) name. Both were senior ministers in the outgoing Rajaji cabinet.²

Everyone expected both of them to be dropped as payback for their opposition to Kamaraj

C.Subramaniam even resigned from his post as he expected to be sacked. To every one's surprise, when Kamaraj announced his cabinet, both men were retained. Kamaraj had trimmed the size of the cabinet to eight (including himself) and shed the light weights of the previous cabinet. But he retained the senior members. It was a dual stroke of genius.³

Besides showing the world that he was gracious in victory and did not bear grudges against those who opposed him, he was sending a subtle message to his opponents that his position was strong enough to include them in his cabinet Kamaraj also made S.S.Ramasamy Padayachi, the leader of the Tamil Nadu Toilers Party, a minister. Padayachi and another minister, Manickvelu Naicker, were leaders of the Vanniyar caste – based parties.⁴

They were strong in the northern districts they had been elected with the support of the DMK Kamaraj included them in this cabinet and eventually both the parties formally merged with the Congress.

In a single stroke, the emerging DMK was rendered helpless in its bastion. It was a rude lesson in political maneuvering for the DMK one they would not forget and later use with devastating impact against Kamaraj himself.⁵

With the cabinet settled, the first order of business was to take care of the Kula Kalvi mess

Rajaji had created. There was a general expectation that Kamaraj would scrap the scheme immediately. Periyar E.V Ramasamy, one of the scheme's most vocal opponents, had suspended his agitation when Kamaraj was sworn in as Chiefminister expecting it to be scrapped. Kamaraj did not disappoint him. Roughly a month after taking power, on 18 May 1954, C.Subramaniam announced in the Assembly that controversial scheme had been dropped.⁶

COMPULSORY ELEMENTARY EDUCATION

The controversial Elementary Education Scheme brought by the previous C.R.'s Ministry, that too very strongly supported by C.Subramaniam was totally rejected by the same person under the Chiefminister of K.Kamaraj the vehement opposition conducted by EVR, and his partymen was thus brought to a standstill.⁷

Naturally the DMK's agitation was also brought to a close.

After solving the education issue. Kamaraj quickly moved to get himself elected to the Assembly. He resigned his Lok Sabha seat and contested the by-election from the Gudiyatham Constituency.

The D.K and the DMK, both of which had been implacable foes of the Congress so far, announced their support for Kamaraj. Periyar even campaigned actively for him, While Anna wrote a series of articles in the DMK newspaper "Dravida Nadu" explaining why Kamaraj was good for the country. Only the Communists opposed his candidacy and put up their own candidate.⁸

On 4 August 1954. Kamaraj was elected to the Assembly with a thumping majority. As he became busy with the administration, he decided to resign from the presidency of the Tamil Nadu Congress Committee. He did not want his party responsibilities to be a distraction. On 30 December 1954, he was replaced by his loyal follower P.Kakkan as the TNCC Chief. Thus began Kamaraj's nine-year term as Chiefminister, and what an age it turned out to be!⁹

Kamaraj's term as Chiefminister is now most remembered for his pioneering reforms in education. The Indian Constitution directed the State and Central governments to provide free education to all citizens

till the age of fourteen. But neither the States nor the Union government had a fraction of the money that was needed to fulfill the goal of universal education. According to the 1951 census, nearly 80 percent of the population of Madras was illiterate.¹⁰

The state was able to allocate only around 5 percent of the estimated expenditure to provide education to all children. Instead of trying to increase funding, Rajaji had gone in the other direction – trying to cut down the hours of schooling and pretending that time spent at home was somehow an alternative vocational schooling.¹¹

Kamaraj decided to turn this policy around by 180 degrees.

He concentrated the state's resources on primary education directing the local bodies to prioritize funding for primary over secondary education.

Every child has to be made to attend primary school first. From the academic year 1955, the free education given to Dalit children was extended to all poor children whose parents earned less than Rs.100 a month. The fee concession scheme, which halved the fees for children of backward classes and economically weak government servants was extended to all students. The restriction on concessions for children retained in the same class for two years was removed. This was a small but necessary step to bring children in to schools and retain them.¹²

SCHOOLS TO EVERY VILLAGE

Kamaraj turned his attention towards increasing the number of schools in the state. In 1957, a survey was ordered to ascertain the number of villages without schooling facilities. It revealed shocking statistics – more than 6,000 villages in the state did not have a school. Kamaraj quickly moved to rectify this school deficit.¹³ Tapping into the 'Relief for the Educated Unemployed' funds provided in the first

Five – Year Plan, he started a massive program of school expansion in the villages of Madras State. During the next four years, all villages with a population greater than 300 were provided with a school staffed by at least one teacher, 4,267 schools were constructed thus and 6,076 unemployed

graduates were appointed as teachers. This killed two birds with a single stone – employment for the youth and education for the children.¹⁴

As part of the plan to reduce the number of dropouts, Kamaraj introduced the scheme which went on to become the best known feature of his tenure as Chiefminister – the noon meal scheme.¹⁵

THE NOONMEAL SCHEME

Kamaraj became the pioneer in bring about the Mid-day meal scheme, otherwise known as the Noon meal scheme. Whether it is true or not, in those days a story was spread about how this scheme flashed across his mind, for the first time in the whole of India. Poverty and the hardwork meant for getting food everyday was the root cause in not sending the children for schooling, even during the early age, say four or five the children both boy and girl were compelled to take care of the cattle on the lands from morning till night.¹⁶

Kamaraj happened to see such children on the lands. When he came across such herders on the lands, he stopped his car, brought the children beside him and enquired the reason for their not going to the schools at such an early age. Pat came the reply from them. Poverty was the root cause. Even for one meal a day for all the family members, they had to work together Kamaraj decided not only to increase the number of schools all over Tamil Nadu, at least one school in every village having a population of 300 and more, but also to give mid-day meal for every child during all the working days.

Thus the noon meal scheme was born.¹⁷

In November 1957 Kamaraj threw the full weight of the state government behind the free noon meal scheme. It was expanded to schools all over the state and placed under the local administrative bodies.¹⁸

It was funded by a mixture of public and private funds-the government bore 60 percent of the cost while contributions from the local public made up the rest.¹⁹

During 1957-61, it was carefully expanded in stages to cover all the rural schools in the state. In 1957, around 8,200 of the state's 22,000 odd schools

had noon meal centres that fed 2.29 lakh children. By 1962, the numbers had increased to around 27,000 schools (nearly 97 percent of all schools in the state) and 12.65 lakh children. Also in 1961, Kamaraj was able to secure the support of international aid organizations like American.²⁰

International Voluntary Organisation and CARE expanded the scheme to urban schools. The scheme was a rousing success to schools.

The scheme was a rousing success by providing a solution to their children's hunger, it succeeded in convincing the people that schooling was affordable. Once it made it easier for parents to send their kids to schools. Kamaraj took steps to ensure that they did not drop out. In 1960-61, he made primary education compulsory in the state. He made it mandatory for every child who had completed six years of age to be enrolled in a school and made sure that those enrolled should not drop out before completing class V.²¹

TEACHER – STUDENT RATIO

The Teacher – student ratio stood at 1:35 in 1957. Though the ratio increased in subsequent years. Kamaraj exempted the hiring of specialist teachers like physical training tutors and Tamil language teaches. To retain the best talent, he introduced a slew of perks and incentives for the teaching community- Provident Fund contributions, pensions, free education for their children, increased pay, interest – free loans and cash incentives for the best performers, among other things. The mid to late fifties were spent in strengthening the primary education sector. By the early sixties, it was time to concentrate on secondary education.²²

A.L.MUDALIAR COMMITTEE ON SECONDARY EDUCATION

As early as 1957, Kamaraj had constituted a committee under the educationist Arcot Lakshmanasamy Mudaliar to draft a white paper on the state of secondary education in Madras. After lengthy consultation and extensive debates in the legislature, he formulated an action plan to strengthen secondary education in the state. It was two-pronged– increasing enrolment through increased spending while at the same time reducing the expense of educating a single student.²³

This was to be accomplished by building more schools and reducing the number of dropouts. In 1961, with the help of increased funding from the Five – year plans free of cost. More secondary schools were built, new diversified courses in various subjects were introduced, and hostel facilities were improved. It was during this time that the 5+3+3²⁴ system of education was introduced in Madras. The Kamaraj government was always on the look out to improve education standards in the state. It conducted regular school education conferences in localities where the government couldn't fund schools. Local people were encouraged to volunteer their money, efforts and ideas to improve schools in their areas By making ordinary people involved in the process. Kamaraj was able to bring about great improvements while spending less money. His efforts did not stop with improving school education. He also had a lasting impact on college education in Tamil Nadu.²⁵

Once school education improved he started opening new colleges in the state to accommodate the larger number of students graduating from the schools. His eleven years in office saw the number of arts and engineering colleges in the state doubled.²⁶

Most of the education statistics during his tenure show similar growth patterns the number of elementary schools doubled, secondary schools tripled, student enrolment and budgetary allocation for education nearly tripled. But these statistics, however impressive they might be, do not tell the whole story, Kamaraj's biggest success was psychological. He made people believe in education and see it as an investment for their children's future. He turned education from a luxury beyond the reach of the masses to something that everyone could afford to have. That was his real legacy.²⁷

Footnotes:

1. The Life and times of K.Kamaraj, Bala Jayaraman, Rainlight Publicers, New Delhi,2013, p.42
2. Ibid., p.43
3. Ibid., p.44
4. Ibid.,
5. Ibid.,
6. Ibid., pp.43-44
7. Ibid.,
8. Ibid.,
9. Ibid.,

10. Ibid.,
11. Ibid., p.45
12. Ibid.,
13. Ibid., pp.45-46
14. Ibid.,
15. Ibid.,
16. Ibid.,
17. Ibid.,
18. Ibid., p.46-47
19. Ibid.,
20. Ibid.,
21. Ibid., pp.47
22. Ibid., pp.47-48
23. Ibid.,
24. Ibid., p.48
25. Ibid.,
26. Ibid.,
27. Ibid.,

EDUCATIONAL MYOPIA

Dr. A. Mary Delphine

*Principal, St. Justin's College of EDN,
Madurai - 9.*

INTRODUCTION

Higher Education in India, despite the innovations and sustainable developments it has inculcated, is still with its own Myopia. Today, education like Tsunami is devouring the desiring minds to reach the level of Globalization. In this scenario, our culturally, Socially, economically, psychologically crippled education system is both a boon and a burden. **Ethical values enliven any society.** **Environmental education** (EE) an, organized effort to teach about how natural environments function and, particularly, how human beings can manage their behaviour and ecosystems in order to live sustainably is a form of ethics. Environmental ethics focuses on: Awareness and sensitivity about the environment and environmental challenges, Knowledge and understanding about the environment and environmental challenges, Attitude concern for the environment and help to maintain environmental quality, Skills to mitigate the environmental problems and Participation for exercising existing knowledge and environmental related programs. It is high time that planning, implementing and evaluation is taken to the grass root level of the individuals to create ethical awareness on environment. This study aims at this awareness and education of environmental ethics in female population in Madurai district for they play a vital role in educating the society significantly.

SIGNIFICANCE OF THE STUDY

Environmental education has crossover with outdoor education and experiential education. Both fields of education complement environmental education yet have unique philosophies: **Outdoor education** means learning “in” and “for” the outdoors. It is a means of curriculum extension and enrichment

through outdoor experiences.”(Hammerman, 1980) Environmental education is often taught or enhanced through outdoor experiences. The out of doors experience, while not strictly environmental in nature, often contain elements of teaching about the environment. **Experiential education** is a process through which a learner constructs knowledge, skill, and value from direct experiences” (AEE, 2002) Experiential education can be viewed as both a process and method to deliver the ideas and skills associated with environmental education. This study thus focuses on the outdoor and experiential education of the female population in Madurai District.

OBJECTIVES OF THE STUDY

1. To find out the level of awareness on environmental ethics among women.
2. To educate women on environmental ethics.
3. To find out the significant differences in the awareness on environmental ethics among women.

HYPOTHESES OF THE STUDY

1. There is average level of awareness of environmental protection among women
2. There is a significant difference among women in environmental protection in terms of the following variables:

- i) Status
- ii) Level of Study
- iii) Locality
- iv) Mode of travel
- v) Income

METHODOLOGY: The investigator adopted Survey method for the present study.

POPULATION OF THE STUDY: The population of the current study consisted of female students (UG & PG) and teachers in Madurai district.

SAMPLE: Random Sampling technique was adopted. 100 female students (UG & PG) and teachers in Madurai district were selected randomly as samples of the study.

TOOL USED: The investigator used a self constructed tool for the present study.

The items were framed under three dimensions as follows:

1. Personal behaviour 2. Social behaviour 3. Environmental Care

VARIABLES STUDIED: In the present study the socio demographic variables considered Were: Status (Student/ Teacher), Level of study (UG /PG- in case of students), Mode of travel (Public/ Private), Locality(Urban/Rural) and Income (below 25,000 per month/ Above 25,000 per month- in case of teachers).

STATISTICAL TECHNIQUES USED: Mean, Standard Deviation and ‘t’ test

ANALYSIS AND INTERPRETATION:

1. Hypothesis 1: There is average level of awareness on environmental protection among women

TABLE 1. Mean and SD of female population in the level of awareness on environmental protection

S. No	Group	N	Mean	S.D
1.	Female	100	56.3	4.25

The above table indicates that the mean of the female population in the level of awareness of environmental protection is 56.3 and standard deviation is 4.23. Hence the hypothesis “ There is average level of awareness on environmental protection among women” is accepted.

2. Hypothesis 2 (a): There is a significant difference among women in environmental protection in terms their Status.

TABLE 2 Difference among women in environmental protection in terms their Status.

S. No	Status	N	Mean	S.D	‘t’ Value	Level of significance	Result
1.	Students	75	55.3	3.716	0.158	0.05	NS
2.	Teachers	25	59.2	4.86			

The above table shows that the ‘t’ value (0.158) is less than the table value 1.96 at 0.05 level. Therefore the research hypothesis “There is a significant difference among women in environmental protection in terms their Status” is rejected.

Hypothesis 2 (b): There is a significant difference among women in environmental protection in terms of their Level of Study.

TABLE 3 Difference among women in environmental protection in terms their Level of Study.

S. No	Students' Level of Study	N	Mean	S.D	't' Value	Level of significance	Result
1.	UG	50	59.6	4.039	0.389	0.05	NS
2.	PG	25	53.6	3.286			
The above table shows that the 't' value (0.389) is less than the table value 1.96 at 0.05 level. Therefore the research hypothesis "There is a significant difference among women in environmental protection in terms their Level of study" is rejected.							
Hypothesis 2 (c): There is a significant difference among women in environmental protection in terms of their Locality.							

TABLE 4 Difference among women in environmental protection in terms their Locality.

S. No	Locality	N	Mean	S.D	‘t’ Value	Level of significance	Result
1.	Urban	70	56.86	4.501	0.248	0.05	NS
2.	Rural	30	54.60	3.209			
The above table shows that the ‘t’ value (0.248) is less than the table value 1.96 at 0.05 level. Therefore the research hypothesis, “There is a significant difference among women in environmental protection in terms of their Locality” is rejected.							
Hypothesis 2 (d): There is a significant difference among women in environmental protection in terms of their Mode of travel.							

TABLE 5 Difference among women in environmental protection in terms their Mode of travel.

S. No	Mode of Travel	N	Mean	S.D	‘t’ Value	Level of significance	Result
1.	Public	85	55.03	4.131	0.571	0.05	NS
2.	Private	15	57.40	4.929			
The above table shows that the ‘t’ value (0.571) is less than the table value 1.96 at 0.05 level. Therefore the research hypothesis “There is a significant difference among women in environmental protection in terms their Mode of travel” is rejected.							
Hypothesis 2 (e): There is a significant difference among women in environmental protection in terms of their Income.							

TABLE 6 Difference among women in environmental protection in terms of their Monthly Income

S. No	Income	N	Mean	S.D	't' Value	Level of	Result
-------	--------	---	------	-----	-----------	----------	--------

significance

1.	Below Rs. 25,000	8	55.58	8.992			
					0.431	0.05	NS

2.	Above Rs. 25,000	17	56.6	5.629			
The above table shows that the 't' value (0.431) is less than the table value 1.96 at 0.05 level. Therefore the research hypothesis "There is a significant difference among women in environmental protection in terms of their Income" is rejected.							
FINDINGS OF THE STUDY							

1. There is average level of awareness of environmental protection among women
2. There is a significant difference among women in environmental protection in terms of the following variables:

(i) Status ii) Level of Study iii) Locality iv) Mode of travel v) Income

CONCLUSION:

The Study concludes with the urge to approach the environmental issues with the state of emergency as every species and race of human beings are at stake with the deterioration of ethical standards in our cosmos. It is the strong belief of the researcher that Women can bring change and change for sure of specific patterns in life style of individuals as they impact day to day living significantly.

References:

1. Gruenewald, D.A. 2004. "A Foucauldian analysis of environmental education: toward the socioecological challenge of the Earth Charter," *Curriculum Inquiry* 34(1): 71-107.
 2. Hoelscher, David W. 2009. "Cultivating the Ecological Conscience: Smith, Orr, and Bowers on Ecological Education." M.A. thesis, University of North Texas. [Environmental Education Research 12\(1\): 101-114.](http://digital.library.unt.edu/ark:/67531/metadc12133/m1/Kyburz-Graber, R., Hofer, K., & Wolfensberger, B. 2006.)
- Lieberman, G.A. & L.L. Hoody. 1998. "Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning." State Education and Environment Roundtable, Poway, CA.
 - Malone, K. 1999. "Environmental education researchers as environmental activists," *Environmental Education Research* 5(2): 163-177.

ACTIVITIES OF GOVERNMENT OF MADRAS STATE IN HEALTH AND SANITATION DURING THE PERIOD 1951 to 1957

M. Sandhiya,

*Part-Time Ph.D Scholar in History,
Research and Development centre,
Bharathiar University Coimbatore - 641 046.
Tamil Nadu, India.*

HEALTH AND SANITATION

Health is wealth. Education is the manifestation of Destiny. People in the Madras State had faith in these concepts.

The population of the composite Madras State was 5,716,002 and 5,305,675 according to the census report of 1951 and 1956. The birth rate per 1000 of the estimated population was 29.5 in 1951 and 29.38 in 1952. The composite state of Madras was bifurcated into Madras state and Andhra state from first October 1953. This decline of the birth rate, death rate and infant mortality rate reveal that the government had taken necessary steps in public health and medicine.

The epidemic diseases like cholera, small pox, plague, leprosy, tuberculosis, venereal diseases and malaria fever were controlled to a great extent by the government of Madras through the departments of public health and medicine.

Twenty five primary centres were functioning in the composite state of Madras and sixteen primary centres in the bifurcated Madras state after the formation of the Andhra state. Three government mobile were also functioning in the state. Everyday minimum one hundred and maximum seven hundred

people were getting medical assistance from these primary centres. The government of Madras adopted the structure created by the British the health and Public Health Administration

There are many units of the Public Health Administration in the Madras state and they are general hospital Madras, Medical college hospitals, District Head quarters hospitals, village Primary Health Centres. Health propaganda and publicity were carried out in the Madras state by the health staff with the help of the pamphlets, posters, leaflets, lantern lectures and cinema shows.

In Madras city, a mobile dispensary had been introduced with effect from November 1956 to cater to the needs of insured workers who resided in separate areas where there were no employees state insurance dispensaries.

The government of Madras completely reorganised the Medical department and other medical related departments in 1951. A separate department was inaugurated to look after the Public Health. All the Medical colleges were brought under the control of the Director of the Medicine and Deans, who were appointed for each Medical college.

A neurological unit for the benefit of the public was opened in the Government General Hospital

at Madras. The General Hospital at Madras was the largest public Hospital in Asia from 1900-1964.

The Director, King Institute at Gindy, in Madras continued to the secretary of the Madras State Research committee and the government of Madras sanctioned a block grant of rupees twenty five thousand for promotion of Medical Research for the year 1951-1952 to 1956-1957.

In the corporation areas of Madras city, Sanitary Engineering branch was established in 1952. Sanitary Engineering Divisions were created in the Madras corporation area and in the Districts.

In orientation training centre at Poonamalle, training was continued to the health staff from six participating states during the years 1956-57 ninety six maternity and child welfare centres were additionally sanctioned under the five year plans to bring the total number of centres to 192.

During 1947-57 state level authorities of Health were Health minister, secretary and director. In district level the heads were medical officer RMO and Doctors of the hospitals.

Twenty nine schemes were introduced in stages to develop the sanitary facilities in all the districts of the Madras state in municipal, non municipal, urban and rural areas in 1955 technical sanction to forty five schemes aggregating to rupees 14,60,130 was accorded to supply and drainage improvements by the sanitary engineer.

Spending to the social sector for the social causes is the important responsibility of any government. The government of Madras all did it for a decade. In addition to health and sanitation activities attention was also given to educational reforms during the above period.

References:

1. Administration reports of the Madras state 1947-57.
2. Annual report of the Director Public Health and Medicine 1955 TNAC.
3. Madras state Administration Report 1953-1954 government of Madras, TNAC.

4. Administration Report of the Madras state 1953-54, government of Madras TNAC.

Kalidasa's Portrayal of Women in *Sakuntala*

Mr. A.Cruz Thivagarar, M.A., M.Phil., PGDCA.,
Assistant Professor of English,
Selvamm Arts and Science College (Autonomous),
Namakkal - 637003.

Kalidasa was a classical Sanskrit writer, who was regarded as the great dramatist and poet in Sanskrit language. His age (birth) was not confirmed. It is believed that, he has been lived during 1st century. There is no information about where he has been lived in Himalayas (or) Ujjaini (or) Kalinga, because his work 'Kumarasambhava' gives the detailed summary of Himalayas. His work Meghaduta shows his love for the country Ujjaini.

His work Raghuvamsa gives a eulogistic description about the kalingan Emperor Hemangada. He got the name Kalidasa, because of his workshop to the Hindu goddess Kali. He was the great devotee of Goddess Kali. People believed that Kali gave him knowledge. He became the court poet of Chandra Gupta's palace and believed to be married a princess of Ujjaini named Vidyotama.

Critics said that he was killed by Kumaradasa, the king of Cylon, because of treachery. Kalidasa's plays and poetry are primarily based on the Hindu Puranas and Hindu Philosophy. He wrote epic poetry and plays. His notable works are 'Abhijñanasakuntalam, Raghuvamsa, Meghaduta, Vikramorvasiyam and kumarasambhava'.

Abhijñanasakuntalam is a well known Sanskrit work by Kalidasa. It is considered as the greatest Sanskrit work. Kalidasa took his subject from the Epic Mahabharata. In this work he deals with the life of Dhusyanta, king of Hastinapura and Sakuntala. In Sanskrit the title sakuntala means that

'recognized by the ring', which means Sakuntala who was recognized by the token (ring).

Sakuntala was the daughter of a sage Viswamirtha and Apsara Meenaka. Viswamirtha rejects the child. So, Menaka had no option, She abandoned the child into the forest. She was found by the Sylvan hermit Kanva; she named the child Sakuntala, because he was found in the nest of the Sakuntala bird. He brought her up as an innocent maiden. At the other hand Dhusyanta, son of Ilina and Ralantara, who was the king of Hastinapura? He didn't have any heir's to decorate his kingdom but he was not upset by this. He ruled his country with honesty and loyalty.

He was very brave; the play opens with a prologue followed by King Dhustantha chasing a male deer which enters into a hermitage. So the hermitage that lived there stopped him and the animal is protected. The king also leaves the animal and promised that he will never harm any animal. So the hermit blesses him that he will soon have a child who will rule the country after Dhusyanta.

Dhusyanta was distracted by hearing the voices of the sweet maiden. He was attracted by the beauty of Sakuntala. The maiden's are plucking flowers in the garden. The bees are disturbed the maidens. Suddenly Dhusyanta appears and saved Sakuntala. She was also attracted by him, but he doesn't reveal his identity as a king.

Days passed, clown Madhavya appears he gives some instruction to the approach Sakuntala. Then he discusses the country affairs. After revealed his identity as a king, he bravely approached Sakuntala; he talked romantically and also replied with love songs. So Sakuntala's friends leave them. Shakuntala was escorted by king Dhusyanta. She also accepted to marry him. They married in a Gandharva system, which is the secret marriage system. Then Dhusyanta leaves his wife with a promise that he will be back soon to take her back to the palace.

Sakuntala was always in the memory of his husband. At that time the sage Durvasa visits the hermitage Sakuntala was put on charge to attend the sage. But he didn't do her work properly because of her thoughts and feelings about the husband. So Dursava curses her, that whom she would about to forget her completely. So Sakuntala's friends explain it. Sakuntala states that she was separated from her husband after their marriage.

Durvasa said, the glimpse of lovable token will restore everything. Sakuntala is waiting for her husband to return. But he won't. So Sakuntala prepares to leave the place. Her friends accompanied her, while traveling Shakuntala lost her ring in the river. Without a ring she entered into a palace. She thinks that she and her friends are ill treated. Dhusyanta had forgotten her completely. She tried to explain everything, but it was vain. Some people are questioning her purity. She got fury and leaves the palace at once.

Some days passed. A police man caught a fisherman who had a royal ring. The fisherman tells that he got the ring in the belly of the fish. After seeing the ring, he remembers everything. But it was too late. He sends soldiers to every side to search for Sakuntala. After being rejected by the king, Sakuntala leads a lonely life in the forest. She had a son. Dhusyanta was in great grief, but he fought with Asura's and get the blessings of Indhra.

Years passed, Dhusyanta visits the celestial hermit Maricha, while he is sitting beneath the tree, and he saw a boy who was wrestling with Lion's hub. Dhusyanta saw some remarks on the boy; he also put an amour to the boy which was only put by his parents. It filled correctly. So he came to know that the boy none other than his own son "BARATHA". He saw sakuntala and beg for forgiveness. She also

forgives him and accepts him. The family reunited after six years. Thus Kalidasa ends his play in a happy note.

Work Cited

Kalidasa, Sakuntala. London: Arrow Books, 2004, Print.

Bakceer, Carlos, Hemingway and his critics: An international Anthology. New York: Hill and Wang Inc, 1961. Print.

Drrabble, Margaret. Oxford Companion to English Literature. Avon: The Bath, 1916. Print.

Labor et.all. A Handbook of Critical Approaches to Literature. New Delhi: OUP, 2010. Print.

Women - Emotional Absues in Arundhati Roy's *The God of Small Things*

U.Anbarasi,
*Assistant Professor in English,
Vels University, Chennai*

“Big Things” such as the caste system, political affiliations, and marriage, Roy directs the reader to the “Small Things.” These can be small creatures and their activities-the “whisper and scurry of small lives”- as well as secrets, promises, sins, and other emotional ‘creatures’ All of these things seem to have no place in the lives of characters like and. They want to strive for culturally significant ideals such as an honorable family and a noble political life. recognizing the powerful presence of “Small Things” means knowing that we are never alone; there is always someone watching, even if it is a flea or even a microbe are the disciples of “The God of Small Things.” They also bear the brunt of the weight of the sad and dangerous “Small Things” that go on in their family’s life it is the manifestation of the ugly secrets that the family refuses to acknowledge.

Since they are forbidden from being acknowledged openly, they are forced to seep into the world of “Small Things” through language, dreams, and daydreams. Although they do their utmost to hide it, the family members’ lives are filled with scandals. The characters almost rely on scandal to make their lives interesting, but they continually banish scandals to the world of “Small Things” to the extent that they reemerge in unexpected, often grotesque ways. Refrains Roy uses in *The God of Small Things* is, “Things can change in a day.” This phrase encapsulates the tumultuousness of the characters’ lives; when change happens to them. Roy also focuses on the way that events and ideas are preserved.

The world of “Small Things” is a quiet repository for those things that the world of “Big Things” finds unacceptable. These include small secrets and pains. Small things can change, but to look at the flip side of mutability, they also can be preserved. Instead of being acknowledged and worked through, these types of socially-uncomfortable topics are relegated to the safe, sacred, “untouchable” world. Once time has passed and a secret or scandal has been preserved, there is no way to go back and be sure of what exactly happened.

Therefore the pickled secrets allow the characters’ lives to be intriguing but not wholly incriminating, painful, or understood. Roy has said that one of the things that brought her back to her childhood home of Ayemenem as the setting for her novel was the cultural diversity she remembers thriving amidst in her own life. When religions, cultures, and castes clash in Ayemenem, the results can range from minor disturbances to major acts of violence.

Mistreatment of the powerless is abusing; the abuse may start with the infliction of physical, sexual, financial, verbal or emotional violence. Abusing especially emotionally distressing is a serious social evil. Arundhati Roy’s *The God of Small Things* explores how the under privileged endures emotional abuse as a consequence of other forms of abuse. The story portrays the emotional distraught of the victims that entails disaster in their lives. Quite a long period of time, women are subjugated under the patriarchal power of men through physical violence, sexual assault

and psychological abuse. To handle and suppress the unemployed women emotionally and economically under the control of men, they use physical violence as their weapon.

Mammachi, Ammu, Kochamma and Rahel, transgressions of these characters, openly subversive or outside the boundaries of the institution of marriage as practiced in post-colonial India, and the “Love laws” that predate Western colonialism lead to a scathing interrogation of the basic values and structures of the post-colonial Indian society. Thus Roy shows a way for the Indian women for resisting local as well as global inequities.

Firstly, Roy’s Mammachi, as a victim of patriarchy, encountered violent beatings from Pappachi. This disappointment infuriated Pappachi resulting in black moods and sudden bouts of temper for which he found vent in beating his wife Mammachi. Out of jealousy over her innate talent of playing violin, making pickles and efficient running of the Paradise pickles factory, Pappachi abused her physically. . He even snapped her budding musical venture by breaking the violin into two mercilessly. His superiority complex as a man prevented him to help Mammachi in her business and to appreciate her entrepreneurial skill. Besides her achievements, Mammachi did not protest his male arrogance rather accepted the insults and rejections and lives like a slave to his ego. She stands for the stereotypical traditional Indian woman remaining docile to any kind of repression. When Mammachi became bread winner of the family and got the support of Chacko, Pappachi took revenge by ignoring her and spoiling her name in the town. He never touched Mammachi again. But he never spoke to her either as long as he lived. In order to retain his power over his wife Pappachi decided to abuse her psychologically neglecting her service and insulting her at public. The unassuming Mammachi endured the mistreatment passively. The motivation behind the passive aggressive behaviour is just to withhold the emotional support and nurturance from Mammachi. So she cried more at Pappachi’s funeral because she was used to him than because she loved him.

The drastic consequence of this emotional abuse on Mammachi got reflected on herself when she attained power over the family after Pappachi’s death.). Chacko, the Marxist mind exploited the

poverty of the pretty factory women in the name of Trade Union classes. His orthodox mother Mammachi who adhered to caste laws and other discriminatory cultural traditions accepted this “feudal libido” as “Man’s needs” (168). She even offered them money to keep the libertine relationship secret. This kind of sexual abuse is tolerated and fostered by her for the sake of her own secured life under the shadow of Chacko - “Her Man. Her only Love” (80). But when she was aware of the clandestine affair of her daughter Ammu and the untouchable Velutha, she, as a subject of discriminatory abuse, drove her away from the house and him from the world.

Emotional abuse includes verbal attacks, harassment, belittling, excessive possessiveness, isolation of partner, and deprivation of physical and economic resources. Secondly, Ammu was the most victimized woman of all sorts of emotional abuse. Her instant decisions at the state of psychological trauma produced dire consequences not only in her life but also in that of people loved her most. The men she confronted from her childhood expressed violence in any form. When she was exposed to the real face beneath their masks, she was psychologically harassed. Ammu’s roles as a divorced woman, a single mother and as an educated woman denied of her rights of inheritance as a sexually sentient being who is deprived by the pre-colonial “Love laws” the freedom to choose her partner and is penalized for it, stands on different issues side by side with other subalterns, whether of caste, class or gender.

Ammu, craving to take control of her life that is so much suppressed by a social order, is faced against a system where her “Marxist” brother Chacko exploits the poor women labourers in his factory, both financially and sexually, and goes unchecked. She sees characters like Mammachi, being appropriated by patriarchy and be asphyxiated and distorted by it. She sees Velutha being accused of the accidental drowning of Sophie Mol. Her father Pappachi worked hard to create a good public profile as a sophisticated, generous, moral man, wonderful husband and father. ; but alone with wife and daughter, he was a monstrous, vicious and suspicious intimidator. Her silent endurance of his father’s cold blooded atrocities at the age of nine in cold winters of Delhi taught her “to live with this cold, calculating cruelty. She developed a lofty sense of injustice and the mulish,

reckless streak that develops in Someone Small who has been bullied all their lives by Someone Big” (Roy 181-82).

This distressing and disgusting backdrop under the clutches of her ill-tempered father and bitter, long-suffering mother made Ammu desperate and think for escaping routes. Her exposure to her father’s cruelty left her vulnerable before the mighty and her mind looked for escapism rather than to fight against it. In her adolescence, to get rid of the dictatorship of her cruel father Pappachi, she took the flight of love marriage challenging the traditional system of arranged marriage. When her husband tried to trade her modesty for his job survival, leaving him to her parents’ home, she took her second flight defying the age-old system of marital relationship. When she had to satisfy her needs as a woman, disobeying the hackneyed social demands, she pursued the forbidden fruit Velutha.

It is the internal emotional flight which she took to restore her from emotional deprivation. When she failed in her quest to change her state from non-being to individual, losing all her relations and emotions, she quitted to another world. It is highly pity that the decisions and flights Ammu took emotionally availing the space she could enter also involved her in many ways of abuse than ever. Ammu being a girl child was denied higher education. The expensive marriage system and reckless father did not bring her any suitor. The unfortunate Ammu weighing the odds to marry the one who proposed accepted the strange Baba, whom she met at Calcutta. But marriage too cheated her in the form of a full-blown alcoholic husband. She endured his fraudulence but was exasperated to a degree she never thought herself capable of when he forced her to cater to the carnal desires of his manager Mr. Hollick. He tortured her in a pattern. When his bouts of violence began to include the children, Ammu left her husband and returned, to her unwelcomed parents. In Ayemenem, Ammu had to deal with emotional, discriminatory, verbal, financial exploitation instead of physical violence. It became a great blow to her that her father, an Anglophile could not believe that an Englishman would covet another man’s wife. Ammu was marginalised under four grounds. She was

4) “a divorced daughter from a [sic] intercommunity love marriage” (45-46)

Along with that she was a mother of two Half-Hindu hybrids. However hard she worked in the pickles factory, she could not claim any partnership or any profit. Chacko used to abuse her verbally denoting the financial abuse, ‘What’s yours is mine and what’s mine is also mine.’ (57) To overcome the alienation, frustration, and disillusionment about her future life, Ammu listened to songs that she loved on the radio. Roy vividly brings out the emotional ordeal and psychological trauma of Ammu, the divorced mother of twins in a poetic language. Ammu for her emotional plight, fight and flight to reach out a happier place. Roy calls the battle inside Ammu as an “unmixable mix. The infinite tenderness of motherhood and the reckless rage of a suicide bomber.” (44) In order to safeguard the precious feelings of others, she failed to realize the feelings of her own children. This unfriendly rudeness made her son conceal the sexual abuse of the Orangedrink and Lemondrink man. Even his twin Rahel could sense the unsmooth relation between Estha and the man that caused fever in him. Ammu failed to notice the evil desire behind his surprisingly sweetness with Estha. In the fear of encountering the man again, he often repeated saying that anything could happen to anyone; it’s best to be prepares. To the children being abused emotionally, “the World became angry-colored” (85)

Ammu also made a mistake of emitting her outrage on the social setup at the innocent children who came forward to share about her worries. Her careless words hurt them and made them loving her less. Her emotional burst out directed the children to leave the house. When Ammu was deprived of every relationship, she was fated to meet the Inspector Thomas Mathew who verbally and physically abused her. He called her “veshya” and her children “illegitimate” (8) and he tapped her breasts with his baton. Emotionally disturbed and embarrassed Ammu was unable to bear the humiliation and the fact that she could not save the life of Velutha. The hardship she endured in the police station and the alleged charge on her for violating the Love Laws of whom should be loved and how much affected her psyche. She became broken and felt lonely when she sent Estha to Calcutta and left Rahel in Ayemenem and this had the worst impact on her health with asthma. The recurrent dream of getting arrested by police with

- 1) “a married daughter” at parent’s home
- 2) “a divorced daughter”
- 3) “a divorced daughter from a love marriage”

scissors to hack off her hair as a sign of prostitute tormented her psyche often. In the Bharat Lodge in Alleppey, the fearful Ammu made her last flight alone from the tormenting world life at the age of thirty one, “a viable, die-able age” (161). Her heavily tormented soul being daughter, wife, sister and mother was solemnly released at the end. Yet, her body was denied to be buried in the Church and it was cremated in the Electric Crematorium.

The worst effect of emotional abuse is that the victim is susceptible to commit crimes due to either the domination of the events occurred in early childhood or the frequent exposure to violence for a short or long term. Thirdly, The ex-nun Kochamma lived her life backwards; her afflicted mind renounced the material world but later she chose to embrace it. At the age of eighty three, she decked her with gold and diamond jewels and coloured her lips and hair. Her psyche being distressed by the neglect of a man at younger age made a profound impact on her adult behaviour. Baby Kochamma took revenge on Velutha for no reason he had personally. After her public humiliation in the Marxist Procession, she focused all her fury on Velutha. “She sharpened it like a pencil.” (Roy 82) In her mind she grew to represent the march and all the men who forced her to wave the Marxist Party flag, who christened her Modalali Mariakutty and who laughed at her.

Finally, Raphel, deprived of parents and paralysed by the separation of her twin brother Estha and the death of Velutha, Rahel behaved wayward and was first blacklisted in Nazareth Convent at the age of eleven. She collided violently against the breasts of the senior girls, smoked and set fire on Housemistress’s false-hair bun. The complaint that she didn’t know how to be a girl and her moral perversion made her expelled from schools. Estha refusing to go to college, with all surprise did the household activities voluntarily. Rahel became aggressive and violent. Police excised their power through the norms of social codes. They practised double standard of morality for the ruling and working class separately. The political hypocrites extracted Velutha’s physical labour and kicked him down and smashed when he attempted to climb up. This inhumane merciless treatment of Velutha would be an emotional threat to other untouchables who violate the taboos. Such brutal and violent practices might have trained Velutha’s father

Vellaya Pappen and his predecessors to be so submissive.

The role of these terrifying experiences made an imprint in their psyche. a well-framed story on the play with emotions and passions of the characters with dual identity, double life, ironic disposition, unmixable desires, resenting grudges and so on. The novel emotively demonstrates that the silent sufferers too have emotions and just because they yearn to reach out, the same emotions are verbally and violently crushed under the hands of malicious feelings. The most corrosive effect of nonphysical or psychological abuse is that it creates impact not only on the life of the abused but also his/her generation as well. The abusive tactics of Pappachi, Baby Kochamma and Chacko on Ammu and her children exert control over them and destroy their self-esteem. They involve deliberate or unintended infliction of mental and emotional harm on the victim’s feelings. Pappachi’s passive aggressive ways to damage Mammachi’s name, Baby Kochamma’s constant criticism denigrating the children to impart sense of worthless and insignificance and her tactics intimidating them to obey her are the parts of emotional abuse. Ammu was controlled and dominated in all the four spheres of her life – her decisions, her relationships, her surroundings and her self-image.

Roy explained how the individual and institutional power structures instill fear through violence with invisible scars, that later provokes contempt out of fear in the newer generation. This contempt for the subjugating paradigms of power triggers the abused to transgress. Roy’s three generation of characters belong to the Ipe family pass through all these emotional transitions. Love would therefore be an emotion that can be explained only in terms of two peoples’ cultural backgrounds and political identities. Love, ideals, and confidence all are forsaken, consciously and unconsciously, innocently and maliciously, and these deceptions affect all the characters deeply.

Works Cited

Berg-Cross, Linda. “Intimate Relationships, Psychological Abuse and Mental Health Problems”.

National Register of Health Service Psychologists.
n.d. Web. 12 Nov 2014.

Roy, Arundhati. *The God of Small Things*. New Delhi
: Penguin Books, 2002. Print.

“Review of the Roots of Youth Violence: Literature
Reviews”. Ontario Ministry of Children and Youth
Services. 5.2(2010). Web. 21 Nov 2014.

Roy, Amitabh (2005). *The God of Small Things : A
novel of social commitment*. New Delhi, India:
Atlantic Publishers and Distributors.

Roy, Arundhati (2009). *The Shape of the Beast:
conversations with Arundhati Roy*. New Delhi, India:
Penguin.

Roy, Binayak (2009). The Title of The God of Small
Things: A subversive salvo. *ANQ*, 22(3), 56-63.
Surendran, K. V (2000). *The God of Small Things:
A saga of lost dreams*. New Delhi, India: Atlantic
Publishers and Distributors.

Bose, Brinda (2006). *In desire and in death:
Eroticism as politics in Arundhati Roy's The God
of Small Things*. In Murari Prasad (edited).
Arundhati Roy: Critical perspectives. New Delhi,
India: Pencraft International.

Dwivedi, O.P (2010). The Subaltern and the text:
Arundhati Roy's *The God of Small Things*. *Journal of
Asia Pacific Studies*, 1(2), 387-394.

English Language – Diaspora Language

P. Amudha M.A., M.Phil.,

Assistant Professor,

*Prince Shri Venkateshwara Arts and Science College,
Chennai.*

Indian English literature refers to the work by writers in India in English language. India has numerous languages. English has become one of the numerous languages of India. It is frequently referred to as Indo – Anglian literature. As a category, this production comes under the broader realm of post colonial literature – the production from previously colonized countries such as India. The entrance of foreign countries into India influenced the literature of India.

Indian writers' work was in their native languages before colonization. During colonization English language spread slowly into India mainly for communication. It is important to note that most of the Indian – English writers have been bilingual. Therefore it would be proper to say that they blended the Indian sensibility with the nuances of the English language.

Before analyzing the contribution of various artists to Indian English literature, it would be appropriate to find this brand of writing. Macaulay, who introduced English as the language for higher education in India, the first and the foremost reason for this introduction was it would primarily serve the needs of the colonial rules in administering the vast sub – continent without much difficulty. Macaulay felt that Indian languages would do well through an exposure to the English language and western thought. Thus slowly post – colonization lead to diaspora writing. It was strongly advocated by many Indian writers and the credit for being the first to support this idea goes to the vociferous patriot Raja Ram Mohan Roy.

There was already a vast, ancient and rich literature in India in the regional languages before the

coming of the British. The English language merely added another means of communication. Thereafter many Indians began to write in English. Indian writing in English began with Raja Ram Mohan Roy, the first of the Indian master of English prose. He was a social reformer.

The novel, in spite of tracing its ancestry to the epic, is a new literature form in India. Novel writing in its present form began in Bengali. Bankim Chandra Chatterjee (1838 - 1894), wrote the first novel *Rajmohan's Wife* (1864) in English. It was followed by many other novels by him in Bengali and in English translation. India during the independence struggle and afterwards provided the best material for a novelist. The political ambition of the people was well portrayed by the fiction writers. The most important novelists of these times are Mulk Raj Anand, Raja Roy and R. K. Narayan followed by many others writers till today.

English language writers belongs to a category, and it is also associated with the works of members of another category called the Indian diaspora, especially people like Salman Rushdie who was born in India, now living in the United Kingdom, who was the most notable among Indian writers. He used a hybrid language. English generously peppered with Indian terms – to convey a theme that could be seen as representing the vast canvas of India. He is usually categorized under the magic realism mode of writing most famously associated with Gabriel Garcia Marquez. Bharati Mukherjee, author of *Jasmine* (1989), has spent much of her career exploring issues involving immigration and identify with a particular focus upon the United States and Canada.

Vikram Seth, author of *A Suitable Boy* (1994) is a writer who uses a purer English and more realistic themes. Being a self – confessed fan of Jane Austen his attention is on the story, its details and its twists and turns.

Shashi Tharoor, in his *The Great Indian Novel* (1989), follows a story telling (though in a satirical) mode as in the Mahabharata drawing his ideas by going back and forth in time. His work as UN official living outside India has given him a vantage point that helps construct an objective Indianness. Other authors include Anita Desai, Kiran Desai, Arundhati Roy, Chitra Banerjee Divakaruni, Raj Kamal Jha, Jhumpa Lahiri, Bharati Kirchner, Khushwant Singh, Amit Chaudhuri, Amitav Ghosh, Vikas Swarup, Robinton Mistry, Kiran Nagarkar and C R Krishnan. It was Rushdie's statement in his book – "The Ironic preposition that India's best writing since independence may have been done in the language of the departed imperialists is simply too much for some folks to bear" – Created a lot of resentment among many writers, including writers in English. In his book, Amit Chaudhuri questions – "Can it be true that Indian writing, that endlessly rich, complex and problematic entity, is to be represented by a handful of writers who write in English, who live in England or America and whom one might have met at a party?"

The views of Rushdie and Amit Chaudhuri expressed through their books "The Vintage Book of Indian Writing" and "The Picador Book of Modern Indian Literature" respectively.

Chaudhuri feels that after Rushdie, Indian writers started employing magical realism, bagginess, non – linear narrative and hybrid language to sustain themes seen as microcosms of India and supposedly reflecting Indian conditions. He contrasts this with the works of earlier writers such as Narayan where the use of English is pure, but the deciphering of meaning needs cultural familiarity. He also feels that Indianness is a theme constructed only in Indian writing in English and does not articulate itself in the vernacular literature. (It is probable that the level of Indianness constructed is directly proportional to the distance between the writer and India). He further adds, "The post – colonial novel, becomes a trope for an ideal hybridity by which the west celebrates not so much Indianness, whatever that infinitely complex thing is, but its own historical quest, its reinterpretation of it-

self".

The renowned writer V.S. Naipaul, a third generation Indian from Trinidad and Tobago and Nobel prize laureate, is a person who belongs to the world and usually not classified under Indian writing in English. Naipaul evokes ideas of homeland, rootlessness and his own personal feeling towards India in many of his books.

Jhumpa Lahiri, a Pulitzer Prize winner from the US is a writer uncomfortable under the label of Indian writing in English. Recent writers in India such as Arundhati Roy and David Davidar show a direction towards contextuality and rootedness in their works. Arundhati Roy, a trained architect and the 1997 Booker prize winner for her '*The God of Small Things*', calls herself a "Home grown" writer. Her award winning book is set in the immensely physical landscape of Kerala. Davidar sets his '*The House of Blue Mangoes*' in southern Tamil Nadu. In both the books, geography and politics are integral to the narrative. In his novel '*Lament of Mohini*', Shreekumar Varma touches upon the unique matriarchal system and the sammandham system of marriage as he writes about the namboodiris and the aristocrats of Kerala.

As the number of Indian writers in English keeps increasing, with everyone with a story to tell, trying to tell a story, and as publishing houses in India vie among themselves to discover the next new land up with world fame.

English language in India stands as a diaspora language. Regional languages have given wonderful excellent, artistic works in Indian literature. After English language inauguration in India, some works got translated into English and artistic works given in the English language also.

Thus, the English Language stands as a diaspora language in India. The works by Indian writers are sometimes both in English and in regional languages.

Exilement of Sita in Ramayana: A Critical View

Dr.S.Radhika,

Ms. K. Gowthami,

*Assistant Professor, Department of English,
Kongu Engineering College, Perundurai*

Exile, in its literal sense, is a physical condition but the sense of exile is not necessarily a manifestation of a dislocated existence. Even if there is a geographical displacement, the exilic condition in many cases is only superficially physical and fundamentally psychological and spiritual. The external exile either compounds or, occasionally, suppresses these internal conditions. The Indian diaspora in the West has experienced a physical displacement but in a globalized world migrants are not treated as aliens, moreover the newer migrants have migrated of their own will, and hence there is little cause for them to feel the sense of being in exile. The world as a global village facilitates the feeling of being at home in the cosmopolitan urban quarters of the world. It is in these situations that the external circumstances of displacement become of less importance and the internal circumstances, that is the psychological and spiritual condition of the mind, gain prominence. Despite being in a diaspora there is little consolation of any hope of escape into any pre-exilic state. It is, as Rushdie says in reference to diasporic writers, a haunting of the mind: It may be that writers in my position, exiles or emigrants or expatriates, are haunted by some sense of loss, some urge to reclaim, to look back, even at the risk of being mutated into pillars of salt. But if we do look back, we must also do so in the knowledge – which gives rise to profound uncertainties – that our physical alienation from India almost inevitably means that we will not be capable of reclaiming precisely the thing that was lost; that we will, in short, create fictions, not actual cities or villages, but invisible ones, imaginary homelands, Indias of the mind.

This mental condition can only be tackled by catering to the psychological and spiritual aspects of life – a self-fashioning of the mind and the spirit. India is not merely a geographical space on the world map. It occupies a well-defined space both in history as well as in culture. Thus, the Indian migrants in the West look back not only at the spatial contour of the subcontinent but at its history, society, and culture too. This looking back is paradoxically aided by technological innovations that help keep intact one's link with the past – a past that reminds of one's roots. Films, music, magazines, the cyber communities, and all other media of communications continually keep refreshing the link. Hamid Naficy notes in the essay "Framing Exile: From Homeland to Homepage" that due to "the globalization of travel, media, and capital, exile appears to have become a postmodern condition" (Naficy 4). It is basically this postmodern condition that produces a gnawing feeling of being in exile for the Indian diasporic community despite having the advantages of easy telecommunication and speedy travel. The trope of exile is a perennial presence in all religions. Its prototypical model can be found in the Jewish "exodus", the Muslim "hegira", and so on. Exile plays a pivotal role in both the two great Hindu epics The Ramayana and The Mahabharata . In fact the Hindu pantheon of Gods and Goddesses is replete with the concept of mobility symbolized by the deities' "vahans" or the animals on which they ride – the lion for Durga, the ox for Shiva, the peacock for Kartick, the mouse for Ganesh, the owl for Lakshmi, the swan for Saraswati, and others. The psyche of the Indian immigrant fed on the mythologies of movement and

exile is preconditioned to succumb to the sense of estrangement, alienation, non-belonging, and dislocation at the slightest pretext. Hence, physical displacement is only a catalyst that generally aggravates a pre-existing psychological and spiritual sense of loneliness. But this generalization is not sweeping because sometimes it so happens that physical displacement allays the cosmic sense of loneliness. It is because of this complex and apparently paradoxical nature of the exilic condition that it is equated with the postmodern condition.

Since by birth human beings are exiled from the womb; one's home, one's family, one's country, one's culture, and so on stand as metaphorical imagery of that natal refuge. This inherent mental condition either acts in conjunction with physical displacement or in opposition with it – either compounding the exilic state or suppressing it. That is why exile is taken as a human condition – some are exiles from happiness, some are exiles from peace, some are exiles from love, and some from their Maker.

The Ramayana is not just Rama's story (*Ramasya Ayanam*). It is also Sita's story (*Ramayah Ayanam*). Both Sita and Rama are thought to be paragons of virtue in the Indian culture. Just as there are many versions of the Ramayana from Rama's point of view, there are texts that present the story from Sita's perspective. In many folk traditions Sita's story is told through songs—her sufferings, her pain, the ill-treatment that she undergoes from various people and her victimisation through circumstances, fate and the people closest to her. Women have been listening to the story of the Ramayana and sharing the pain and agonies that Sita underwent in her life. Sita's story finds a resonance in many women's lives especially the number of times that she was exiled to new and strange environments. Every woman goes through similar experiences even today in the Indian social background.

Exile by custom and tradition

Rama was about sixteen years old and Sita was of 'marriageable age' when the Swayamvaram took place and Rama won her hand. Janaka says to Rama: "This Sita, my daughter will be your constant companion in all your noble deeds. May good always happen to both of you. Take her hand in yours and she will be totally devoted to you. She is a lucky girl

and will follow you like your shadow." And that is what Sita does.

The first time that Sita relocates is when she comes as a new bride to Ayodhya. At her Baraat or wedding party, as was the custom, only men from Kosala came to Mithila for the marriage ceremony. Her new life that awaited her in Ayodhya was only known through hearsay. The prospect of one unseen, strange mother-in-law would be daunting to the most intrepid of women. . . .three mothers-in-law must have been a nightmare.

She left her familiar surroundings, family, kith and kin with only her sister and two cousins as other brides given to the three other sons of Dasaratha and accompanied a strange man—never mind the instant recognition of a soul mate—to a strange country with a different language, people and terrain. There is no mention of a familiar mother figure who accompanied her, the advantage Kaikeyi had with Mantara as a maid/nurse whatever. Sita's choice here was dictated by custom and traditions that a woman should leave her home and go away to her husband's home and adopt them as family.

Exile by Choice

Rama and Sita spend the next twelve years together growing up into adults. When Rama was banished from Ayodhya, he tried to dissuade her from accompanying him to the forests. She was adamant and like the shadow that her father had advised her to be, she refused to be separated from Rama. At that time her age was eighteen. A girl who knew only luxury and the comforts and security of palaces and a cloistered life, chose to leave everything and accompany her husband into exile saying, "Where Rama is, that is my Ayodhya'.

Exile by force

Thirteen years of the 'vanavaasam' was not without its trials and tribulations. Sita learnt to be a Hermit's housewife and adapted to running a household by doing all the chores, something that she had never done as a Princess, and managed the day to day affairs of a Spartan life. She had no neighbours, no peers or any other women to depend on or ask for advice.

Then she was kidnapped and exiled by force when Ravana imprisoned her in the Asoka grove in his city, Lanka. Sita literally and figuratively faced daily demons and her life was that of a prisoner, in isolation.

Exile by Fire

Sita was rescued after a bloody war where thousands died. The women of Lanka did not blame her but lay the onus of the war and their widowhood on Surpanaka who inflamed Ravana's lust for pretty women by targeting Sita.

The sense of peace and security that Sita felt when she met Rama after she was rescued from the Asoka Vanam was short-lived. The one person from whom she expected total acceptance and succour failed to give her that support and love. Her husband needed proof of her purity to show the world that she had not been violated in Ravana's captivity. She calmly accepted the dictat of her husband to do an Agnipariksha. She swore her faithfulness to Rama by word, deed and thought as she mounted the pile of wood and flames. The Divine came to her rescue and vouched for her purity by dousing the fire.

Exile by abandonment

Rama and Sita returned to Ayodhya and were crowned King and Queen. However, the comforts, luxuries and pleasures of a Queen's life within the framework of family were short lived for Sita.

Sita became pregnant and the whole world awaited the birth of the next ruler of Kosala. Rama, the righteous King, was shaken to hear about the opinion of his subjects who doubted his wife's chastity. Without consulting or informing her of his decision, Rama asked Lakshmana to take her away on some pretext and to abandon her in the forests—an exile again but this time only for the shadow, Sita.

She accepted the sudden exile gracefully without a word against Rama. She took it as her fate and did not complain saying that Rama was but doing his duty as a King.

Self-Exile

Sita spent many years in the wilderness and with the help of Sage Valmiki, she brought up her twin sons to take their rightful place as heirs apparent. Sage Valmiki, who composed the Ramayana, taught

the boys, Lava and Kusa, to recite the epic to the public. Rama heard them singing of his exploits and realised that Sita, in spite of his distrust and banishment, had remained honourable and faithful and had taught her sons to love their father.

Sita was again brought to Ayodhya by circumstances, but she did not choose to reunite with Rama. She handed over her sons to him and exiled herself into the waiting chasm of Mother Earth.

Exiles for the modern women

For the majority of Indian women, Sita is their favourite mythical role model. When a blessing is given to a bride nobody says, "Be like Draupadi". Sita and Savitri are held up as the ideal women as they are seen to be saviours. Savitri saved her husband, Satyavan, from death, Sita saved Rama from disgrace.

Even today the situation has hardly changed. Women grow up in one home, move to another after marriage and make the necessary adjustments to blend both families harmoniously. They are taught from birth that they have to leave home and that compromise, adjustment and forgiveness are the bedrocks of family life. Many women's careers are abruptly aborted after marriage.

Very often women are exiled to a 'vanavaasam'—to other cities, states and countries—where they learn to exist without support systems, family bonding and cultural identities. Like Sita, they learn to cope with environmental issues, with physical illnesses and discomforts, personal and emotional abuse and crisis. Their careers are mere jobs for they have to abandon or subordinate it when their men are transferred and relocate. Many women also bring up children on their own as single parents or because they have a long distance marriage. Finally they are left on their own to cope with old age and loneliness.

Exiles happen to many women even today and are justified as necessary for economic reasons, for the security of families. Sita's exiles then and now are not mere myth.

Work Cited

Primary text:

Pattanaik, Devdutt. "SITA: An illustrated retelling of the Ramayana". Penguin books India, New Delhi, 2013

Secondary sources:

Naficy, Hamid. "Framing Exile" from *Home, Exile, Homeland – Film, Media, and the Politics of Place*, Ed. Hamid Naficy, New York: Routledge, 1999.

Rushdie, Salman. *Imaginary Homelands: Essays and Criticism 1981 – 1991*, London: Granta Books, 1991.
(Rushdie, *Imaginary* 10) <http://www.the-criterion.com>
The Criterion: An International Journal in English. ISSN 0976-8165 Vol. I. Issue III 1December 2010.

SYMBOLISM IN ROBERT FROST'S POETRY

P.Mythili

Asst.Prof.of English

Nandha Arts and Science College

Email:mythilipalanisamy12@gmail.com

A Poet may employ symbols in order to convey his meaning or thought it is called symbolism. Thus symbolism means a veiled or oblique mode of communication. A symbolic poem would be the richer and more profound by virtue of its use of symbols. In such way Robert Frost had symbolized many thoughts to the world;

In "Mending Wall", the narrator questions the need for a wall at all, since he had an apple orchard while his neighbour has pine trees. But the other man is of the view that "Good fences make good neighbours", and so they go on constructing the barrier between them. Here the fences or the wall has a symbolic meaning. The poem states one of the serious problems of our time should national boundaries be made stronger for our protection? Should national boundaries be removed because they restrict our progress towards mutual understanding and eventual brotherhood? According to another interpretation, the clash is between the spirits of restraint, which insists that conventions must be upheld, build up and continually rebuilt as a matter of principle. Also the wall as a symbol serves to focus the constant tension of opposing elements, which Frost saw as the essence of the human condition.

Another symbol of this tension is explored in the poem called "Birches". It conveys the poet's belief that full experience grows out of a balancing of opposed forces-ideal and the real. The poem is a meditation on the best way to leave earth for heaven. The final passage of the poem is a reflection of the poetic hunger for withdrawal which permits a swift

and exciting return to a new sense of life.

"I'd like to get away.....coming back"

The poem called "Stopping by Wood on a Snowy evening", too, has a symbolic statement of the conflict which everyone has felt between the demands of practical life, with its obligations to others, and the poignant desire to escape into a land of day-dreaming and reverie. The dark woods silently filling up with the coldness of snow symbolize death, which have a strange attraction for the speaker of the poem. But the speaker turns away from the call of the woods, because he decides with a certain weariness and yet with quite determination to face the needs and demands of life:

*"The woods are lovely, dark and deep
But I have promises to keep,
And miles to go, before I sleep,
And miles to go, before I sleep"*

"The Road Not Taken" is superficially considered the poem is about a man who feels undecided which of the two roads to take and who ultimately chooses the one of the seemed to have been less frequented. Symbolically interpreted, the poem deals with the choice of the poet faced with two different lines of poetic development. The poet follows the path which had not been followed by too many people, although on the surface the difference between the two paths was not very substantial. The choice seemed very important to the poet and that choice,

as he tells us has “made all difference”. A poet’s destination is thus determined by the spirit behind the man.

In “After Apple-Picking” the concrete experience of after apple-picking is communicated firmly and realistically, but the poem invites a metaphorical and symbolic extension. The task of apple-picking is any task; it is like itself. The drowsiness which the speaker feels after the completion of the task is associated with the cycle of the seasons. Death might be considered to be something eminently natural, a sense of fulfillment with a great deal of honest weariness and a sense of something well-done, even though a few apples have remained un-picked.

The “Mountain” is another poem with a symbolic meaning. The poem tells the story of a man living at that foot of a mountain, who has never climbed to the top either to see the great view from there or to see the brook that flows there, or merely for the sake of climbing. But on a deeper scrutiny the man living at the foot of the mountain symbolizes the inquisitive, unadventurous and unambitious spirit. There are others symbolized by the traveler in the poem. The traveler symbolizes the opposite temperament.

In the poem “Fire and Ice”, Fire symbolizes passion, while ice symbolizes cold hatred and both are capable of destroying the world. The underlying symbolic meaning is that the intensity of man’s passion, the very thing which makes him human creator the inhuman forces of disaster. Another interpretation is that fire symbolizes “desire” and ice symbolizes “reason”.

In the poem “West Running Brook”, The poet indirectly speaks of his own struggles and conflicts. The picture of the backward motion of the water of the brook symbolically means the play of the tug between various opposites in the world. Frost in his poem tends to find, sermons in stones and lessons in running brooks.

“Neither out far or in deep” shows the deepest fact and restraint in its symbolism. The ocean symbolizes the endless query of man. Here the folk stand on the shore and wonder, though they can see neither out far nor in deep.

“But when war that ever a bar
To any watch they keep?”

The poem carries symbolic overtones of man’s ultimate dependence on what he can never quite subdue.

In “Directive” drinking from the broken cup in order to be whole again beyond confusion symbolizes human acceptance of nature as an entity that is sane by means of such as acceptance man can become whole and sane.

Then there is a poem called “Design”. Frost considers the appearance of order in the natural world and hints at the probable cause of this order. The poem merely asks question but by doing so, shows the importance of design and pattern.

Thus through the above said poems Robert Frost symbolizes many thoughts to the world.

Works Cited:

K.Chellapan. *Experiencing Poetry*, Emerald Publishers

Ramji lall. *Robert Frost An Evaluation of his poetry*, New Delhi:Aarti book centre,

Biyot Kesh Tripathy. *Joys of poetry*, New Delhi: S.Chand & company Ltd.

EFFECTIVENESS OF EDU-DIGITAL SKILL AMONG COLLEGE STUDENTS IN VILLUPURAM DISTRICT

Dr. N. MADHAVAN,

Assistant Professor, Management Wing,
Directorate Distance Education, Annamalai University, Annamalai Nagar

ABSTRACT

The present study aims to find out the effectiveness of edu-digital skill among college students in Villupuram District. A samples of 100 college students selected randomly were studied. A questionnaire method of survey was used to find out the effectiveness of edu-digital skill students. The data were collected by using questionnaire as an instrument. Primary data were collected by conducting direct structured interview using questionnaire. All the respondents were asked the same questions in the same fashion and they were informed the purpose of study. t-test, Regression and correlation analysis were applied to test the hypotheses. The findings and observations are the result and outcome of the interpretations made during the study of analysis. The result found that edu-digital skill are positively correlated with students.

Keywords : Edu-Digital Skill, College Students and Demographic Variables

INTRODUCTION

Education, the foremost weapon for social reform, is now under the forces of change. Newly formed branches of knowledge and techniques of education facilitate the physical, mental and emotional development of the learners. Colleges have an unavoidable role in acquainting the students with the nature of changing field of education and in making necessary changes in the instructional techniques. In the modern world of technological innovations, all educational institutions are trying to improve their quality in terms of facilities and academic outputs.

Scientific knowledge is exploding every day. Knowledge available to mankind today is emerging in the form of science and technology. There is no limit or end to the accumulation of scientific knowledge. It also satisfies the intellectual thirst of human beings. Science education is a bridge between science and education, using psychology. It links the most powerful concepts of science to the growing minds of student through active experimental pedagogy. Science education plays a prominent role in Indian educational system. It has, as its objective, the aim of providing individual learners a firm grasp of the concepts and processes of science as also to impart the ability to use scientific method of problem-solving. As a result of it, every aspect of human civilization has been influenced to a very great extent.

REVIEW OF LITERATURE

She, Hsiao-Ching and Chen, Yi-Zen (2012) examined how middle students constructed their understanding of the mitosis and meiosis processes at a molecular level through multimedia learning materials presented in different interaction and sensory modality modes. The dependent variables included subjects' pre-test, post-test, and retention-test scores, showing their understanding of mitosis and meiosis process at

molecular level. The results of the study showed that the group which used multimedia learning material has a greater amount of visual attention and consistent with their long term retained learning than the group which did not use the same. This study adds empirical evidence of a direct correlation between the length of eye fixation behavior and the depth of learning. Moreover, it provides insight into the multimedia effect on students' cognitive process through the use of eye fixation behavior evidence.

Anboucarassy (2012) studied the effectiveness of Multimedia in Teaching Biological Science to college students. The results of the study revealed that experiment group performed better than the control group due to the exposure of multimedia based learning. Thus multimedia helps the students to sustain their interest and also their retention power compared to the traditional method of teaching. The constant use of multimedia will make students understand more and achieve more in their academic achievement. Hence it was concluded that the multimedia approach is considered to be one of the best techniques for biology teaching at college level.

Ponraj and Sivakumar (2012) studied the effectiveness of Computer-Assisted Instruction in Teaching Zoology in Relation to Learners' Personality. The major findings of the study indicated that achievement scores of experimental group students were higher than the control group students after the treatment.

Yusuf, Mudasiru and Afolabi, Adedeji (2012) investigated the effects of computer assisted instruction (CAI) on secondary students' performance in biology. The findings of the study showed that the performance of students exposed to CAI either individually or cooperatively were better than their counterparts exposed to the conventional classroom instruction. Based on the research findings recommendations were made on the need to develop relevant CAI packages for teaching biology in Nigerian students.

OBJECTIVES

- ❖ To know the edu-digital skill among college students in Villupuram district.
- ❖ To find out the effectiveness of Multimedia Programme in teaching among college students.

METHODOLOGY

Research may be termed as a systemic inquiry of verified knowledge, it is an organized deliberate effort to collect information, to analyze it, to put it together and finally to evaluate it. This research paper on methodology describes elaborately, the sample that was chosen, research design, objectives of the study, data collection, statistical techniques used for data and analysis.

Population

Population selected for this study was 100 college students in a selected at Villupuram District.

Data Collection

Primary data, required for the present research work were collected by conducting direct interviews using questionnaire. All the respondents were given sufficient information about the Project work. These respondents were provided with the same questionnaires. They were also informed that they have to answer in the same fashion.

HYPOTHESIS

- There is no significant difference between the pre and post test mean scores of experimental group students in their attitude towards multimedia programme.

Administration of retention test

The Attitude Scale towards Multimedia Programme was constructed and validated by the investigator and was administered to the subjects of the experimental group. The pre test scores on attitude towards multimedia programme were collected. Thus pre test and post test scores on attitude towards multimedia programme were computed for analysis.

ANALYSIS AND INTERPRETATION

To find out the significance of the difference between the pre and post test mean scores of experimental group students in their attitude towards multimedia programme the 't' test was used.

Table 1

Distribution of 't' value between the pre and post test mean scores of experimental group students in their attitude towards multimedia programme

Group	N	Mean	S.D	't' value	Level of Significant
Pre test	50	42.08	10.42	24.47	p<0.05
Post test	50	93.58	2.57		

There is no significant difference between the pre and post test mean scores of experimental group students in their attitude towards multimedia programme.

The obtained 't' value is statistically significant since it is greater than the table 't' value 1.96 at 0.05 level of significance. Hence the null hypothesis is rejected. It shows that there is significant difference between the pre and post test mean scores of experimental group students in their attitude towards multimedia programme. It is therefore concluded that the experimental group students show more favourable attitude towards multimedia programme in the post test than the pre test.

Table 2

Showing the Stepwise regression analysis predicting factors influencing effectiveness of edu-digital skill among college students and demographic variables

Sl.No	Step/Source	Unstandardized Coefficients	Beta	Beta	Std. Error	
	Standardized Coefficients	Beta	Beta	Step t	P	
1.	Gender	1.144	0.156	0.242	7.324	0.01
2.	Father education	1.254	0.359	0.163	3.495	0.01
3.	Mother education	2.615	0.462	0.361	5.661	0.01
4.	Monthly Income	2.175	0.402	0.280	5.410	0.01
5.	Father Occupation	1.022	0.513	0.137	1.992	0.01

* P < 0.01

Five variables viz Gender, Father education, Mother education, Monthly income and Father Occupation have significantly contributed for predicting the factors influencing effectiveness of edu-digital skill among college students. The first variable Gender seems to be 7.324, Father education seems to be 3.495, Mother education seems to be 5.661, Monthly income seems to be 5.410 and Father occupation seems to be 1.992. The predictive value of these variables separately is 0.01.

Table 3
Showing the correlation between the effectiveness of edu-digital skill among college students and demographic variables

Factors	Effectiveness of edu-digital skill among college students
Gender	0.920**
Father education	0.849**
Mother education	0.914**
Monthly Income	0.880**
Father Occupation	0.855**

* Significant at 0.01 level

Effectiveness of edu-digital skill among college students is positively and significantly related to Gender (0.920), Father education (0.849), Mother education (0.914), Monthly income (0.880) and Father occupation (0.855). So, the direct relationship between the effectiveness of edu-digital skill among college students and selected demographic variables.

CONCLUSION

Computer and multimedia technology for education offers a number of benefits. They allow the teacher to structure and present the information with varying special effects to the students. They can also be used for the storage of audio-visual information of various types. Multimedia programmes provide a lot of benefits. The benefits for learners include flexibility of scheduled instruction at a location convenient to learners, reduced student time, assured progress in skill development, increased achievement and increased retention and continuous report to the learners of progress and accomplishments, specified performance criteria, good response and feedback.

The application of multimedia programme would definitely create a good learning environment in classroom, sustaining attention and motivating the students to learn effectively. The application of multimedia may create a congenial learning climate in colleges and can bring real life situations.

The investigator has chosen the topic for the present study in order to address the problem faced by teachers, teaching science, to foster involvement in new teaching approaches, to get a feeling of satisfaction through learning in the classroom, to create joyful learning environment and to stimulate active information processing for effective learning,

In a vast country like India, enormous work is now being done in the field of education, but it is still not possible to equip each and every college with all the facilities for teaching science. Colleges need high quality teaching aids. Multimedia, as a teaching aid, is very much effective with colour, sound and graphics, which are found in the audio, video movie media. Any diagram can be explained in detail with 3D effects, which helps the students understand clearly. The students can get a live vision of life's aspects and scientific factors. Multimedia includes use of computer.

The present study has found out that the multimedia programme is very effective in college level. As the present teaching-learning process in college classes is very rigid, time bound and outmoded, it was proposed to use multimedia programme.

As multimedia programme develops a favourable attitude towards multimedia programme, motivates the students to involve in the process of learning, attracts students' attention in learning, accelerates the students' understanding of concepts of subjects, increases the retention power and that it is highly suitable for all categories of students ranging from low to high achievers, it is suggested that this multimedia programme be widely adopted and implemented in educational institutions as computer laboratory facilities are available in all the colleges to enable the learners to learn the subjects of their choice according to their own pace and ability. Learning through multimedia programme is very easy, understandable and comfortable to all categories of students for all types of subjects.

REFERENCES

- Anboucarassy, B. (2012).** Effectiveness of Multimedia in Teaching Biological Science to college students. *Edutracks*, 9(5): 37-38.
- Kanmani, M., & Radha, M. (2012).** "Effectiveness of CAI package in basic electronics teaching", *Journal of All India Association for Educational Research*, 21(1): 47-50.
- Korakakis, G., Pavlatou, E.A., Palyvos, J. A., & Spyrellis N. (2012).** 3D visualization types in multimedia applications for science learning: A case study for 8th grade students in Greece. *Computers & Education*, 52(2): 390-401. Retrieved March 21.
- Ponraj, P., & Sivakumar, R. (2012).** Computer-Assisted Instruction in Zoology in Relation to Learners' Personality. *EDUTRACKS*, 9(6): 34-37.
- Yusuf, Mudasiru O., & Afolabi, Adedeji O. (2012).** Effects of Computer Assisted Instruction (CAI) on Secondary students' performance in biology. *TOJET: The Turkish Online Journal of Educational Technology*, 9(1): 62-69. Retrieved March 21.

PRICE SATISFACTION OF CO-OPERATIVE MILK PRODUCERS' IN KRISHNAGIRI TOWN

Dr. N. SULAIMAN

Assistant Professor cum Liaison Officer, Annamalai University

ABSTRACT

The Indian co-operative movement, like its counterpart in the other countries of the world has been essentially a child of distress. It has emerged out of that turmoil and dissatisfaction which prevailed during the last quarter of the 19th century and worked as a direct consequence of the Industrial Revolution. The Revolution led to the decay of cottage industries and growing pressure on land, making agriculture an uneconomic venture; greater mobility of rich people from villages to towns and of capital to new channels of investment; the growth of middlemen acting as parasites to the disadvantage of small producers; new debt legislations which changed completely the borrowing and the lending system; the change in the method of payment of land revenue from kind to cash, throwing the cultivators into the clutches of the money-lenders, etc. All these destroyed the self-sufficient economy of the villages; the failure of rains and frequent famines added fuel to the fire. The present study aims to find out the Price satisfaction of co-operative milk producers' in Krishnagiri town. A samples of 50 respondents selected randomly were studied. The data were collected by using questionnaire as an instrument. The findings and observations are the result and outcome of the interpretations made during the study of analysis.

INTRODUCTION

Milk is an essential item used by the people as vegetarian diet more consumption of milk depend not only on its factors but also on the availability of children and also by practice of talking coffee, Tea etc. The chief factors which influence the consumption of milk are availability level of income of people and prices milk is not only an essential items but also most frequently and commonly used by the people. Dairy development in India has been most spectacular in recent years while chief contributing factors to their achievement is the 'ANAND PATTERN' of dairy cooperative dairying considered as a whole consisted of 3 very important elements milk production procurement and marketing. India is the second producers of milk in the world and has highest cattle population in the world. Milk and productions are second major source of income to the farmers and it contributes 17per cent of countries total agricultural outputs.

The dairy development wing of the ministry of agriculture and planning commission recognised the need of developing dairy industry, and started to make special financial out lay beginning with milk first five year plan (1951-61) for starting dairy scheme setting up city milk dairies and milk collections and chilling centers. The key with the schemes and intensive cattle development projects of animal's husbandry department lent support to milk production programmes. The Indian council of agricultural research to be the major co-coordinating agency for all agricultural activities including livestock and dairy research and played vital in the encouraging and financing various aspect of dairying. Dairy development in India received a fill up after independence with industrialization the establishment of organized milk collection processing and distribution of milk to cater to the needs of expanding urban areas. In 1954 an act was started for the prevention of food adulteration act PFA in order to check the quality of milk.

REVIEW OF LITERATURE

Koppad (2012) in their study to analysis the feasibility of dairy project in white revolution the contributions of cows appreciable. Now it has been recognize the cattle. Besides providing home requirement has become a source of income an improving the economy of the farmers and clear that the project feasible which yield returns.

H.B.Bal (2012) made a study to found that while milk is produced in the rural areas, the profitable market for it exists largely in the urban areas. The major portion of milk comes from small dairy farmers with one or two animals. He found that these dairy farmers are spread over the whole state in innumerable small units in an unorganized form. He viewed that co-operatives have provided some competition in the rural milk markets, yet the milk vendors continue to dominate the milk supply system who explicit both the producers and consumers.

Singh et al. (2012) found that both supply as well as demand of milk is expected to increase in new future. The demand is expected to increase at a faster rate than supply. The expected supply & demand scenario emerging nutritional requirement data holds little relevance milk is the main source of supplement the creaks based diet of the people. Careful planning is called for meeting the challenges that may develop over time in the demand and supply of milk.

Kamal Vetta et al. (2015) in this study revealed that dairy enterprise has significantly influenced that cropping pattern of the farms. A large proportion of the area under cereals shifted to words fodder crops due to the increased No. of mitch animal in the optimal plans. The increases in income & labours are due to dairy enterprise was also observed in the additional cash requirement on all the farms due to regular flow of income throughout the year. Thus farms are advised to expand dairy enterprise to management level to supplement their income.

M. Siva Subramanian (2015) observed that price rise is one of the vital responsible for decline in milk consumption. Hence Government should make provision for supply of the milk at subsidized rate in general & rural area in particular less educated respondents are not aware of the importance of milk in terms of its.

OBJECTIVE OF THE STUDY

1. To study the theoretical framework of Dairy Development.
2. To analyse the producers satisfaction towards pricing of Aavin milk.
3. To offer suitable suggestions based on the findings of the study.

METHODOLOGY

Both primary and secondary data were used for the purpose of this study. Primary data were collected through interview schedule from the respondents. The secondary data were collected from various books, journals, newspapers, articles and some websites. No census list of Milk producers is available for selecting milk producers in Krishnagiri town. Random sampling method is followed. Among the various Milk producers for the present study altogether 50 milk producers were contacted and interviewed. The following statistical tools are used in the study for the purpose of analysis. Percentage Analysis and ranking Method.

ANALYSIS AND INTERPRETATION

Table 1
PROCUREMENT PER DAY

Procurement per day in liters		Respondents	Percentage
Up to 10	10		20
10 to 15	12		24
15 to 20	18		36
Above 20	10		20
Total	50	100	

Source: Primary data

The table indicates that milk procurement per day out of 250 respondents, 20 per cent of the respondents are producing up to 10 liters per day, 24 per cent of the respondents are producing 10 to 15 liters per day, 36 per cent of the respondents are producing up to 15 to 20 per day, 20 per cent of the respondents producing above 20 per day. Majority (56 per cent) of the respondents are producing up to 15 to 20 liters per day.

Table 2

BRAND PREFERENCE ABOUT CATTLE FEED

Brand name	Respondents	Percentage
SKM Brand	28	56
AAVIN Brand	13	26
CAVUARY Brand	9	18
Total	50	100

Source: Primary data

The above table shows that out of 50 respondents, 28 respondents are using Cattle feed of which 56 per cent of the respondents are using SKM feed, 26 per cent of the respondents are using Aavin feed and 18 per cent of the respondents are using Cauvery feed. Majority (56 per cent) of the respondents are using SKM feed.

Table 3

MONTHLY EXPENDITURE FOR CATTLE FEED

Monthly expenditure	Respondents	percentage
Upto Rs.2000	5	10
Rs. 3000 to Rs.4000	12	24
Rs.4000to Rs. 5000	12	24
Above Rs.5000	21	42
Total	50	100

Source: Primary data

The above table shows that Monthly Expenditure for purchasing the cattle feed. Out of 50 respondents 5 respondents are using cattle feed of which 10 per cent of the respondents spend Rs. 2000 per month, 24 per cent of the respondents spend Rs. 3000 to 4000 per month, 24 per cent of the respondents spend Rs. 4000 to 5000 per month and 42 per cent of the respondents spend Above Rs. 5000 per month. Majority (42 per cent) of the respondents spend Above Rs. 5000 per month for purchasing the cattle feed.

Table 4

SERVICE OF ANIMALS

Service of animals	Respondents	Percentage
Natural service	45	90
Artificial insemination	5	10
Total	50	100

Source: primary data

The above table 6 reveals that the service of animals, out of total 50 respondents only 90 per cent of respondents are using natural service and 10 per cent of the respondents are using artificial insemination to service their animals. Most (90 per cent) of the respondents service their animals by using natural services.

Table 5

OPINION ABOUT PRICE SATISFACTION

Opinion	Respondents	Percentage
Satisfied	35	70
Not satisfied	15	30
Total	50	100

Source: Primary data

The above table 7 shows that opinion about price satisfaction of Aavin milk, 70 per cent of the respondents are opined that dissatisfied in pricing and 30 per cent of the respondents are satisfied in pricing. From the above analysis majority of the respondents are opined that pricing is dissatisfied.

Table 6
PROBLEMS FACED

Problems	Rank
Payment of money	I
Low Price	II
Distance	III
Medical facilities	IV

Source: Primary data

The table 18 shows that the first and for most problem which affect most of the respondents are the payment. The second problems faced by the respondents are low price. The third problems faced by the respondents is medical facilities to livestock and distance is another problems faced by the respondents. It is clear that most of the respondents faced delay in payment.

CONCLUSION

Milk is an essential item used by the people as vegetarian diet more consumption of milk depend not only on its factors but also on the availability of children and also by practice of talking coffee, Tea etc. The milk producers' role is very important in Aavin milk society. It is clear that most of the respondents have not satisfied the price levels and they are facing the many more problems like payment of money in delay, low price level, distance and medical facilities. The Government has taken necessary steps to improve the milk producers' life.

REFERENCES

- Chavhan S.K. and Monika Gupta (2014) "Production and disposal of milk in rural area of H.P. "Indian Journal of Agriculture Marketing Volume- Vol. 7, No.1, pp.95-104.
- Arora V.P.S. and T.S. Bhogal (2010), "Interated Milk Co-operatives in North-West Uttar Pradesh: Organisation, Function and Performance, Indian Journal of Agricultural Economics, Vol. 7, No.1, pp.108-110.
- Kushwaha R.K.S., G.N. Singh and O.P.Maurya, (2011) "Economics of Production and Marketing of Buffalo of Milk in District Kanpur, U.P.", Indian Journal of Agricultural marketing, conference special, pp.7 &8.
- Bharat Singh, Pratap S. BIRTHAL and K.K.Kralr (2011), "Some Aspects of production and marketing of Milk in a Rainfed District of Haryana", Agricultural situation in India, Vol.49, No. 12, March, pp.893-898.
- Kopped M.B. et al., "Economic Analysis of Dairy project agricultural Bankers" Volume 9, 2012.
- Bal, H.K. "Management Practice and Performance of Milk processing Units - A case Study of selected Co-operative sector Units". "Indian Journal of Agricultural Economics", Vol.51. No.4, October-December 2012, pp.136.
- Singh S.P. et al., "Project of demand for & supply of milk in Haryana". Agriculture situation in India Vol. LIV No.6 2012.
- Kamal Vetta et al., Potential of dairy enterprise on Punjab farms. A linear programme Analysis". Agricultural Situation in India Volume VIII Dec - 2015.
- Siva Subramanian M. "A Study on per capital milk consumption among consumers" Indian corporate Review 2015.

HEALTH PROBLEMS OF ALCOHOLISM IN VILLUPURAM DISTRICT

Dr. N. MADHAVAN,
Assistant Professor, Management Wing,

Directorate Distance Education, Annamalai University, Annamalai Nagar

ABSTRACT

Alcoholism is an age old phenomenon of species of homosapians. The period of origin of alcoholism is not exactly known and it could be assumed that primitive man who happened to experience the effect of alcohol, started consuming alcohol which became a habit later. Alcoholism is harmful not only for the individual but also for his family and the society at large. The difficulty in alcoholics is that once a man starts drinking he becomes addicted to it and increases its dose, which has a very harmful effect both on the individual as well as the society. A healthy life organization can only be erected upon the basis of normal and healthy social relationships. But excessive alcoholism dismantles modifies these relationships. The excessive drinker may cause inconvenience to his home, his family and his occupation. When under the influence of alcohol he may be talkative or gloomily silent. Research design is purely and simply the framework or plan for a study that guides the collection and analysis of the data. The research design indicates the methods of research i.e. the method of gathering information and the method of sampling. For this study the samples were drawn using random sample method. Sample size of the study that are selected from the sampling unit. Total estimated sample size is 100 using random sample method. The findings and observations are the result and outcome of the interpretations made during the study of analysis.

INTRODUCTION

The common man sees 'alcoholism' as a weakness of character. The moralist looks at it as a vice. Law finds the consequential acts of alcoholism as a crime. The clergyman considers it as a sin. After extensive research, in the year 1956 American Medical Association came to the conclusion that it is a Disease. An alcoholic is one, whose drinking causes continuing problems in one or more areas of his life family – relationship, financial position, occupation, etc., (Martymann). In spite of these problems, he will keep on drinking. Here, 'continuing' is the key word. This is what differentiates him from a social drinker. An 'alcoholic' will not be able to take note of his problems and stop drinking totally. He tries, but never succeeds on a long term basis. He develops a physical and psychological dependence on alcohol. He will have no control over his drinking, and even if he stops drinking for a short duration he will definitely go back to obsessive drinking. Out of ten people who start drinking for the pleasure associated with it, two become alcoholics. Unfortunately, the cause is still not known. The most widely accepted definition of alcoholism, is the one offered by Keller and Efron: "Alcoholism is a chronic illness, Psychic, somatic or psychosomatic, which manifests itself as a disorder of behaviour. It is characterised by the repeated drinking of alcoholic beverages, to an extent that exceeds customary. Dietary use or compliance with the social customs of the community and that interferes with the drinker's health or the social or economic functioning.

REVIEW OF LITERATURE

Varma et. al (2013) put study on “Extent and pattern of alcohol use and alcohol related problems in North India”. This study explains the extent of alcohol use in Urban & Rural population of Rural Punjab and Chandigarh. The study found out that the correct prevalence went up to 41% in case of adult males. The findings of higher proportion of current uses in the two rural groups was rather surprising.

According to Hauron (2014) as given in applied human relation lock “Alcoholism in industry has been called as the billion dollar hang over” and with good reason various surveys have indicated that alcoholism was three or more times as much as employees in terms of absenteeism accidents in efficiency and sickness benefits. The alcoholic in industry is mostly from 10-20 years and later in middle between 35 to 45 years.

Senthilnathan et al (2014) conducted a study on social adjustment of the industrial alcoholics”. Two groups of alcoholics and non-alcoholics consisting of 25 workers work taken further study. The result obtained on adjustment indicates that there is an association between alcoholism and un-satisfactory total adjustment. The analysis for the measurement in respect of home adjustment reveals that 36% of alcoholic group had unsatisfactory home adjustment, 44% is alcoholic group and 48% in non-alcoholics group had scored for average home adjustment was satisfactorily significant at 0.05 level indicating that there happens to be a difference between both groups in the home adjustment. It was stated from the study that 48% in alcoholic group has unsatisfactory health adjustment compared to 12% in non-alcoholics. The association of un-satisfactory health adjustment among the alcoholic workers was satisfactory health adjustment among the alcoholic workers was significant at 0.05 level. Social adjustment on analysis revealed that 60% of alcoholic had problems in social adjustments compared to 48% of non-alcoholics who had average social adjustment. The social adjustment among alcoholic was associated significantly at 0.02 level. The emotional adjustment between both the groups revealed a significant difference at 0.02 level where in 56% from alcoholic group has unsatisfactory emotional adjustment compared to 48% in non-alcoholic group who had average emotional adjustment. The occupational adjustment of both the groups when analysed revealed that 32% and 40% alcoholics and non-alcoholics respectively had average adjustment whereas 16% and 40% alcoholics and non-alcoholics respectively had good occupational adjustment. An empirical study conducted earlier among 40 alcoholics has shown that this behaviour is made into a habit of social groupings such as friendships, festival, gatherings, celebrations. This paper is based on the data collected from Tamil Daily viz Dinamalar for about six months from April to September 1986. This study is to focus attention on all news rectify to alcoholic-behaviour. The main technique used was content analysis. This study was conducted by Kogilavani (1986) lecturer in Sociology, Madurai Kamaraj University. A random sample of 40 has brought firstly the age group which is more prone to be habitual to alcoholism. Person (67.5%) belonging the age from 20 to 30 years are preponderant over others. A vast majority of 67.4% are single. Similarly, the graduate are more in number (32.5%) than others who are qualified less. Mostly the religious affiliation has an influence on individual in adopting certain habits. Hindus are found in majority is about 80% as against 17.5% and 25% are Christian and Muslims respectively. Similarly, income always decides the pattern of consumption of any commodity liquor is not an exception to this. From this study, it is found out that 67.5% belonging to higher income age group of earning more than Rs.1400/- per month.

RESEARCH OBJECTIVE

The study objectives entail the following,

1. Find out health problems of Alcoholism in Villupuram District
2. To know the intensity of in take of alcohol.

RESEARCH METHODOLOGY

Research design is purely and simply the framework or plan for a study that guides the collection and analysis of the data. The research design indicates the methods of research i.e. the method of gathering information and the method of sampling. Primary data were collected by conducting direct structured interview using questionnaire. All the respondents were asked the same questions in the same fashion and they were informed the purpose of study. The data were collected by using questionnaire as an instrument. For this study

the samples were drawn using random sample method. The data collected through questionnaires have been tabulated. By using the above mentioned statistical tools, the data have been analysed. Interpretations have been drawn based on the analysis. The findings and observations are the result and outcome of the interpretations made during the course of analysis. Tables and figures have been used wherever necessary to facilitate the analysis and interpretation. Explanations for the tables were given for the tables wherever necessary.

DISCUSSION AND RESULTS

This paper furnishes the analyses and interpretation of the collected data for **“Health Problems of Alcoholism in Villupuram District”**. Necessary data are collected and tabulated for bringing out suitable analysis.

Table 1

Showing the chi-square test for opinion about aware of drinking created problems of the

Respondents Age				
S.No.	Age	Aware Drinking created problems		Total
		Yes	No	
1	< 20 years	10	4	14
2	21-30 Years	28	5	33
3	31-40 Years	20	4	24
4	41-50 Years	10	6	16
5	>50 years	10	3	13
	Total	78	22	100
Calculated Chi-square Value		Degrees of freedom		Level of Significance
3.901		4		NS

Ho: There is an association between opinion about aware of drinking created problems of the Respondents Age.

The calculated chi-square value (3.901), which is not significant. Hence, the stated hypothesis is rejected. So, there is no association between opinion about aware of drinking created problems of the Respondents Age.

Table 2

Shows the distribution of the respondents aware of the trouble of work based on their Educational qualification.

Sl.No	Educational qualification	Yes	No	Total
1	Illiterate	10	4	14
2	School level	27	6	33
3	ITI	20	3	23
4	Engineering	13	4	17
5	Degree	10	3	13
	Total	80	20	100

Calculated Chi-square Value	Degrees of freedom	Level of Significance
1.616	4	NS

Ho: There is an association between aware of the trouble of work based on their Educational qualification.

The calculated chi-square value (1.616), which is not significant at 0.05 level. Hence, the stated hypothesis is rejected. So, there is no association between aware of the trouble of work based on their Educational qualification.

Table 3

Shows the distribution of the respondents aware of lost a job based on their income

Sl.No	Income	Yes	No	Total
1	<5000 Rs	30	5	35
2	5001-8000	40	10	50
3	>8000	10	5	15
	Total	80	20	100

Calculated Chi-square Value	Degrees of freedom	Level of Significance
2.381	2	NS

Ho: There is an association between aware of lost a job based on their income.

The calculated chi-square value (2.381), which is not significant. Hence, the stated hypothesis is rejected. So, there is no association between aware of lost a job based on their income.

Table 4

Shows the distribution of the respondents aware of Cirrhosis (Liver trouble) based on their religion.

Sl.No	Religion	Yes	No	Total
1	Hindu	60	9	69
2	Muslim	9	5	14
3	Christian	13	4	17
	Total	82	18	100

Calculated Chi-square Value	Degrees of freedom	Level of Significance
4.477	2	NS

Ho: There is an association between aware of Cirrhosis (Liver trouble) on their religion.

The calculated chi-square value (4.477), which is not significant. Hence, the stated hypothesis is rejected. So, there is no association between aware of Cirrhosis (Liver trouble) on their religion.

Table 5

Shows the distribution of the respondents aware of emotional problem based on their caste

Sl No	Caste	Yes	No	Total
1	FC	15	5	20
2	BC	20	6	26
3	SC	50	4	54
	Total	85	15	100

Calculated Chi-square Value	Degrees of freedom	Level of Significance
5.340	2	NS

Ho: There is an association between aware of emotional problem based on their caste.

The calculated chi-square value (5.340), which is not significant at 0.05 level. Hence, the stated hypothesis is rejected. So, there is no association between aware of emotional problem based on their caste.

Table 6

Shows distribution of the respondents know about the family unhappiness problem based on their area of domicile.

Sl No	Area of Domicile	Yes	No	Total
1	Rural	57	6	63
2	Urban	30	7	37
	Total	87	13	100

Calculated Chi-square Value	Degrees of freedom	Level of Significance
1.819	1	NS

Ho: There is an association between know about the family unhappiness problem based on their area of domicile.

The calculated chi-square value (1.819), which is not significant at 0.05 level. Hence, the stated hypothesis is rejected. So, there is no association between know about the family unhappiness problem based on their area of domicile.

POLICY IMPLICATIONS AND CONCLUSION

The young minds should be trained in such a way to stay away from alcoholism. Hence moral science classes can be conducted from the primary level to secondary level of education to guide the pupils on right paths. This is due to the external factors like Television, Video, Cinema, Cell phone etc. Hence the media that adopt the cheap and popular techniques show alcoholism as an expression of heroism. So the adolescents imitate very often. Hence this type of wrong propaganda strictly restricted by media censorship. Exhaustion of productive process, long hours of work, mental depression, family worries are the promoting factors of alcoholism, in order to limit the evils of alcoholism, production process should be made simple, and working environment is to be made pleasant. Proper counseling through social laboratories should be set up to relieve mental tension of the workers and the family worries.

As alcoholism is widely prevalent in the low income group of people. If any large scale disparities in wages among different cadres should be minimized because poverty is midst of plenty should not be allowed to co-exist with pockets prosperity. Alcoholism promotes Family disintegration which is more in family environment. The overall alcoholics are less cohesive in the family members Voluntary organization should come forward to change their attitude towards alcoholism.

Above all, any amount of physical measures can not solve the problem of alcoholism because it requires a thorough transformation in attitude, which should be brought by sociologists, social workers, psychologists, psychopathologists and religious heads. Alcoholism is harmful not only for the individual but also for his family and the society at large. The difficulty in alcoholics is that once a man starts drinking he becomes addicted to it and increases its dose, which has a very harmful effect both on the individual as well as on the society.

REFERENCES

Christopher's Miters Foundation (2012). A, British Medical Journal.

Edward et al (2011) Physical character of crimes of the alcoholic Medical Legal journal.

Ferguson (2013). Personality correlated and antecedents of drinking pattern in adult males. Journal of consulting and clinical Psychology.

Glatt Mills (2011) Cultural differences in rates of Alcoholism. Quarterly Journal of Studies in alcoholism.

Hauron (2014). Drinking and deviant drinking. Quarterly Journal of suicides on alcoholis, USA.

Mulfory (2010) Abnormal psychology and modern life. m/s cott, foreman and company.

Phadka (2010) Alcohol problems in adoptees raised apart from alcoholic biological parents. A reviews of general psychiatry.

Senthilnathan, What is the Alcoholic Man New York. Quarterly of Sciences 2014.

Varma et. al (2013) "Extent and pattern of alcohol use and alcohol related problems in North India". Journal of alcoholism III, Diagnosis and Clinical Psychiatric illness in 259 alcoholic persons. Archivas of general psychiatry

Digital HR Transformation – An empirical Study

Dr.M.G.Loganathan

Department of Business Administration, Annamalai University, Chidambaram, Tamilnadu, India

E-mail: mglogan27@gmail.com

Abstract

This paper provides an empirical approach related to the digital transformation of human resources operations in an enterprise. Human resource department were earlier involved in performing routine functions and their role has changed drastically and their output is linked to the business strategy. This paper dwells on the transformation of human resources department in the digital era. The HR should transition from a mere support function to operational function where in they should able to quantify the information using data analysis which would throw light on the performance of the organisation. The paradigm shift that is required from HR Managers will require support not only from the management of the organisation but they also should be competent to handle information and provide the analysed information to the management. HR managers will require new skills and competencies relating to language and culture, technology capabilities to facilitate overseas communication, methods to measure and quantify effectiveness and evaluate strategies and return on investment. Evidently, these new skills and competencies will result in an emerging new role for HR managers, requiring them to be strategic business partner, supportive of the overall corporate strategy.

The future role of HR professional will change from a less administrative role to more of a strategic role. HR managers will continually be required to prove their effectiveness and their existence. They will be expected to understand international business practices and promote cultural diversity within the organization. They will need to understand the core business of the organization and become partners with line managers. They will need to prove that their initiatives and programs are result-oriented, providing specific measurable results in terms of business competitiveness that contribute positively to the bottom-line of the organization. They will be required to stay current with leading edge as more and more organization is faced with the demands of globalization and strategic alliances with other organization around the world. The Data collection was done through schedule. In some cases personal interview was needed at the time of filling up of questionnaire. To analyze, the collected data the researcher used simple percentage analysis, one way ANOVA and Chi-Square test. Different charts and graphs were drawn to interpret the collected data.

Keywords

Human Resources (HR), Digital, Transformation, Hard copy, Soft copy

1.INTRODUCTION

Information exists in many forms and human resource information is not an exception. Small companies do not have enough resources to maintain employee data as soft copies and they adopt a traditional approach to file the information. Big companies have enough resources and they use a combination of hard and soft copies to maintain human resource data. Another expected change in HR is the 'Global Business' concept world trade knew a major growth during the last years and there is forecasted as well the growth of international businesses, especially among small firms. Organization rely more and more organization HR specialists as the facilitators of work across borders and among different cultures. Therefore, they must be knowledgeable of other cultures, languages and business practices. They will be required to develop and manage an international workforce, maintain written and unwritten corporate policies for transportability to other cultures, keep top management informed of the costs of not paying attention to the transnational issues and provide their services

to a variety of locations worldwide. Globalization will impact HR managers by requiring new skills such as language capabilities. For e.g., in order to recruit employees from other cultures, HR managers will either have to learn new languages or else they will certainly have to have foreign speakers on staff. But in order to facilitate communication among people coming from a wide range of language backgrounds, in most multinationals, it is preferred to have English as a common language for digital transformation.

Unlike the other industries where HR is considered as a functional need, there is a need to view HR as a partner or a business enabler. One of the constant challenges faced in this area is to align HR to business. The five R's therefore, assume utmost significance in HR strategy. The HR team needs to get in right from the stage of defining the business strategy to Resourcing, Recruiting the right talent, Retaining the talent, Retraining and Restructuring.[1]

No longer can the HR department carry on with its traditional functions. However, Human Resource Information Systems (HRIS) is to be put in place – to build and sustain a performance – driven culture. HR will have to involve the whole organization in this process and act as a counsellor and facilitator and that is the most gigantic challenge the HR of any organization faces since HR should also understand the nuances of technology for digital transformation.[2]

A human resource information software system or HRIS system is one way that a lot of companies use to manage everything easily and become even more productive. Having this system in any company could aid the human resource team to become more organized and practice being practical in the workplace. Since this converts all the information digitally, use of paper will definitely decrease.

There are a lot more benefits that one can get from having a good HRIS system. Human resource information is really important since these all involve the core of the company and its employees. It is only fair that the organisation treat all the information involving them with utmost confidence. Having this kind of attitude towards the employees will make them feel confident and secure. This in turn makes them more productive and will become happy at work. This is why it is very important to maintain the credibility as a good employer so that the employees will also have confidence in the company.

With the HRIS system, one can track down to which path the work-related decisions are taken. By having a clearer view of what is presently happening in the company, one can also predict what could happen in the future. One important thing that one could monitor through this is the cash flow of the company. Through the HRIS, one can monitor and justify some of the HR-related expenses that the company has incurred over a period of time.

Some HR-related expenses that can be monitored through this system are the training costs of newly-hired employees, and the benefits given to the employees and their reported dependents. From the termination costs, one can also pull out an evaluation of how the HR handles employee concerns. If this is high, one can try to see the reason behind why the employees are leaving. By finding out what these reasons are, one can implement changes that could improve the people process in the company.

Attendance can also be monitored here. Since being frequently absent or tardy could decrease the company's productivity, it is important that the organisation have a system wherein they can easily observe if there is an abuse of the company's system. By having employees who have good attendance, you increase the company's chances of increased revenue.[3]

In the information era, organizations are progressively incorporating IT into their processes, using different tools and solutions. These tools are applied in a wide variety of ways (i.e., manufacturing resource planning, office automation, computer-supported cooperative work, distributed teams, supply-chain, enterprise-wide resource planning, or virtual integration). IT is transforming organizations and the way that people work, interact and, feel in knowledge-based organizations. To cope with these new human resources challenges, it is necessary to review and to transform organizational HRM practices. Those in the world of human resources management are often accused of living in an ivory tower, managing the human side of their organizations in

ways that lack relevance in the new information era. The impetus for the HRM change comes from recognition of recent developments in the HRM profession and a realization that the current practices do not reflect those changes, especially those changes related with IT strategies. [4]

In the information society, HR/HRIS managers need to rethink how to deploy and mobilize the more valuable corporate resource: the human capital. HR management professionals are becoming strategic business partners in their organizations, capable of contributing to the improvement of the organization's competitive advantage. Whether human resources contribute to competitive advantage in the new business world depends critically on the chosen strategies. Given this strategic focus, practices needed to be revised in order to help HR professionals in their new role. Recognizing the need for substantive revision and greater emphasis on relevant human resources management, any HR manager should begin the process of policies change and adjustment.

I. RELATED WORK

The article does make reference to other works done on the same topic. There are works related to technology based data governance. However we need to focus on manual and system related data. The authors view is that if the data is integrated between different systems within the organisation the cost of managing the data will be less. Similarly the data quality and usage of data is known, data management becomes easier.

In order to understand data governance, different forms and types of data are being considered. The PeopleCapability Maturity Model v2.0 [5] administered by the Software Engineering Institute of Pittsburgh provides a framework for human resource processes. The process areas focus on results which are directly related to data. Digital transformation of human resource data provides an organisation a base for easier evaluation and retrieval of information.

II. RESEARCH METHODOLOGY

Research methodology is a way to systematically solve a research problem. It may be understood as a science as to how research is done scientifically. In research it is the responsibility of the researchers to expose the research decisions and to evaluate them before they are implemented. The researcher has specified what decisions are and why the selection is made, so that they can be evaluated. Research design is the arrangement of conditions for analysis of data in a manner that aims to combine relevance to the research article. The researcher has undertaken a descriptive type of research. It describes the characteristics of population or presentation of answer for the questions like where, when and how relating to the chosen area. The study will present the state of affairs as it exists. The article also proposes an exploratory research approach to understand the digital transformation of human resource data. Hence we need to understand the data from the following perspectives.

a. Data Source: Origin of the data

b. Data repository: Where does the data exist at present

c. Data collection technique

d. Data processing technique

e. Data analysis methods

f. Users of the data

g. Archiving of the data

h. Duration of existence of archived data

i. Duration of existence of current data

j. Are there any data transfer

k. Data entry methods

l. Data accuracy: How it is checked

The methodology adopted gets changed for hard and soft data for each of the above attributes. For example, data accuracy on a paper is checked by tick marks followed by signature. In case of system the data is entered into a given field and if there is a built in verification, data gets accepted and saved. If there is no verification, data gets entered and subsequently during processing errors found are fixed. The data residing in the database contains different containers of data. Data can be many forms in online transactions. The authors have identified the following forms of human resource data

- a.Data obtained during recruitment
- b.Employee database
- c.Performance evaluation
- d.Employee benefits and others

Human resource transformation requires a strategy since it involves cost. People working in HR department need to equip themselves with technology and use them in decision making.. If data which needs to be discarded are retained, they will be spending too much on them without reason. The question arises as to how to benchmark the required data? There is no straightforward answer and there is an element of discretion involved and it is subjective. Stakeholders involved should evolve an action plan to ensure that digital transformation should be based on best practices and focus on data retention, data protection, data archival and data retrieval in a cost effective manner.

III. DATA COLLECTION AND SAMPLE SIZE

While dealing with an implementation study, inadequate data pose some challenges in order to make decisions and hence it is imperative to collect appropriate data from various sources. Depending upon the sources of information available data can be classified as Primary data and Secondary data. The researcher has chosen sample size of 50 in Chennai region comprising of small and medium IT companies. The statistical tools used for data analysis were Percentage analysis and Chi-squared test.

IV. DATA ANALYSIS

Primary data was collected from the respondents comprising of both genders who are working in small and medium IT companies based in Chennai. Table 1 provides the age wise classification of the respondents.

S.No	Age Band	Number of Respondents	Percentage %
1	25-30	12	12
2	31-35	15	15
3	36-40	14	14
4	41-45	5	5
5	46-50	4	4

Table 1.

From the above table it could be interpreted that the majority of the respondents, 15% of them come under the age group of 31-35 years and also 14% of the respondents come under the age group of 36-40 years and 12% of the respondents come under the 25-30 years age group.

Primary data was collected from the same set of respondents to understand their working experience in human resource department and the data that are being handled by them. Table 2 provides the experience details of the respondents.

S.No	Experience	Number of Respondents	Percentage %
1	2 - 4 years	7	7
2	4 - 6 years	9	9
3	6 - 8 years	8	8
4	8 - 10 years	11	11
5	Greater than 10 years	15	15

Table 2.

From the above table it could be interpreted that the majority of the respondents, 15% of them possess experience greater than 10 years, 11% of the respondents have experience in the range of 8 to 10 years while 17% of the respondents have a collective experience of 4 to 8 years.

The feedback of the respondents pertaining to the use of human resource data in a digital form was collected in a 5 point scale. Table 3 provides the details of the feedback provided by the respondents.

S.No	Respondents feedback	Number of Respondents	Percentage %
1	Highly Satisfied	9	9
2	Satisfied	12	12
3	Neutral	10	10
4	Dissatisfied	8	8
5	Highly Dissatisfied	11	11

Table 3.

From the above table it could be interpreted that the majority of the respondents, 12% of them are satisfied and 9% of them are highly satisfied. 10% of the respondents remained neutral while 19% of the respondents were either dissatisfied or highly dissatisfied.

Feedback of the respondents pertaining to the use of hard copy data in the existing format was collected in a 5 point scale. Table 4 provides the details of the feedback provided by the respondents for using the existing data as hard copies.

S.No	Respondents feedback	Number of Respondents	Percentage %
1	Highly Satisfied	21	21
2	Satisfied	24	24
3	Neutral	1	1
4	Dissatisfied	2	2
5	Highly Dissatisfied	2	2

Table 4.

From the above table it could be interpreted that the majority of the respondents, 24% of them are satisfied and 21% of them are highly satisfied. 1% of the respondent remained neutral while 4% of the respondents were either dissatisfied or highly dissatisfied.

Chi-square test is a non-parametric test used to test the hypothesis to ascertain whether the population chosen for analysis is correct. The objective of chi square is to determine if there exists a significant difference among different groups. The sample data is presented in the form of a contingency table with rows or columns. Chi-Square Test (X^2) = $\sum (O_{in} - E_{in})^2 / E_{in}$

Table 5 and 6 provides details of chi-squared analysis based on the feedback provided by both male and female respondents.

S.No	Respondents feedback	Male	Female	Total
1	Highly Satisfied	12	9	21
2	Satisfied	11	13	24
3	Neutral	1	0	1
4	Dissatisfied	1	1	2
5	Highly Dissatisfied	2	0	2

Table 5.

O	E	O-E	O-E ^2	O-E ^2/E
12	6.48	5.52	30.4704	4.7022222
11	5.94	5.06	25.6036	4.3103704
1	0.54	0.46	0.2116	0.3918519
1	0.54	0.46	0.2116	0.3918519
2	1.08	0.92	0.8464	0.7837037
9	4.86	4.14	17.1396	3.5266667
13	7.02	5.98	35.7604	5.0940741
0	0	0	0	
1	0.54	0.46	0.2116	0.3918519
0	0	0	0	
			Total	19.592593

Table 6

The degree of freedom is 5 and with 95% level of significance the table value is 11.07. Since the calculated value is greater than the table value, there is no significant relationship between the human resource data and digitisation. Hence the null hypothesis is accepted. The results of this study may be applicable to this sample size. If more sample size is considered the results may vary and alternative hypothesis will be accepted.

V. SUMMARY AND CONCLUSION

There are no proven methods which are robust for digital transformation for human resources information. It depends on the organisation size, culture and line of business. Hard and soft data governance requires a different

focus and action plan needs to be evolved. Real transformation will happen only when the human resources department is at the forefront of the collaborative approach to ensure that there is utmost transparency in the system. If human resource department wants to be a business enabler they need to focus on emerging trends and assimilate new technology frontiers for their own area of operation. HR generalists and specialists should chalk out an action plan to evolve the human resource management system with workflows and integrate with the financial system and this would enable the organisation to monitor the costs on an ongoing basis. Certainly digital HR transformation should be done by human resource department only and any outsourcing in this area will open up business risks and they should be mitigated.[6]. Also the results of the null hypothesis based on the table value [7] shows an acceptance of the proposed hypothesis. However in order to conclude whether there is a real correlation between digitisation and human resource data more data needs to be analysed across all industrial sectors.

REFERENCES

- [1]<http://www.hrkatha.com/spcl/learn-engage-tranfm/1095-how-should-hr-ride-the-digital-transformation-wave> Accessed on 18th August'2018
- [2]<https://www.accenture.com/in-en/service-digital-hr-transformation-service-delivery> Accessed on 18th August'2018
- [3]<https://www.ngahr.com/about/digital-hr-transformation> Accessed on 18th August'2018
- [4][https://www.digitalhrtech.com/guide-hr-digital transformation-hr-transformation/](https://www.digitalhrtech.com/guide-hr-digital-transformation-hr-transformation/)Accessed on 18th August'2018
- [5] People capability Maturity Model v 2.0
[http://www.techrepublic.com/blog/big-data analytics/redefining-risk for-big-data/](http://www.techrepublic.com/blog/big-data-analytics/redefining-risk-for-big-data/) Accessed on 29th January'2016
- [6]<https://www.peoplesmatters.in/article/technology/digitally-yours-the-digital-hr-transformation-case-18263> Accessed on 18th August'2018
- [7]https://people.smp.uq.edu.au/YoniNazarathy/stat_models_B_course_spring_07/distributions/chisqtab.pdf

Isolation and Identification of Actinomycetes With Effective Antimicrobial Activity From Rhizosphere Soil of *Ocimum Sanctum* and *Acorus Calamus*

Dr. L. R. Go.pinath

Department of Biotechnology, Vivekanandha College of Arts and Sciences for Women, Namakkal

Dr. K. Kala

Regional Joint Director of Collegiate Education, Trichy.

A. Arunadevi & K. Premalatha

Department of Biotechnology, Vivekanandha College of Arts and Sciences for Women, Namakkal

S. Reshmi

Department of Biotechnology, SDV College of Arts and Applied Science, Alappuzha, Kerala

ABSTRACT

Objective: The present research work is put forward to isolate *Actinomycetes* from the rhizosphere soil of the medicinal plants (*Ocimum sanctum* and *Acorus calamus*) and to evaluate anti microbial activity followed by 16s rRNA sequencing.

Methods: Rhizosphere soil samples were collected from different medicinal plants found in Kolli Hills of Namakkal district. The rhizosphere regions of medicinally important plants such as *Ocimum sanctum*, *Acorus calamus*. The phenotypic characterizations such as gram's staining and gelatin liquefaction was performed. Then, biochemical tests for the samples were done which is further taken to evaluate anti microbial activity by disc diffusion method. 16s rRNA sequencing is done to identify the arrangement of nucleotide sequences of organisms.

Results: The research work revealed that the strains isolated from *Ocimum sanctum* and *Acorus calamus* showed both positive and negative results. The diameter of zone of inhibition is calculated for different organisms treated with various antibiotics such as gentamycin, neomycin, tetracycline, erythromycin and also comparative significance of microbial inhibition was found.

Conclusion: It was concluded by stating that the *Actinomycetes* isolated from the rhizosphere soil of medicinal plants of *Ocimum sanctum*, *Acorus calamus* identified, were comparable with general antibiotics from the market in the present day which could be a significant value for identifying the future biochemical compounds for effective anti microbial activity and production of antibiotics.

Key words: *Actinomycetes*, medicinal plants, Rhizosphere soil, Anti microbial activity and Antibiotics

INTRODUCTION

Actinomycetes population has been identified as one of the major group of the soil population; they are widespread in nature and found to be more in dry than wet soils (Wellington *et al.*, 1994). *Actinomycetes* are the most abundant organisms that form a thread like filaments in the soil, and they grow as hyphae like fungi responsible for the characteristically earthy, freshly and healthy soil. Two major group of soil *Actinomycetes* includes - *Streptomyces*, and micromonospora. *Actinomycetes* have two phylogenetic divisions with low GC and high GC and low GC have more AT base pairs in DNA. *Actinomycetes* play a major role in antagonistic interactions in soil. *Actinomycetes* are soil microorganism's common characteristics to bacteria and fungi. They may able to grow in the best anaerobic conditions. mostly *Actinomycetes* were positive and rod shaped bacteria. *Streptomyces* species are broadly used in industries because it has the capability to produce number of chemical compounds including enzyme, antibiotics and anti-tumor agent (Poornima and Ponmurugan, 2006) The most

promising role for secondary metabolites relies upon defense mechanisms. *Actinomycetes*, basically forms a colony of common soil microorganisms and sometimes it is referred as ray bacteria.” They are known for decomposing more resistant organic materials such as chitin, a complex sugar found in the outer skeleton of insects and elsewhere *Actinomycetes* are the rich source of secondary metabolites with diverse biological diversity. Most of the *Actinomycetes* species are marine microorganisms (has both characteristics of bacteria and fungi) and are active in the decomposition of plant tissues and thereby in the recycling of carbon and nitrogen. *Actinomycetes* remain the most feasible and biotechnologically significant prokaryotes which are responsible for the production of half of the discovered secondary metabolites. *Actinomycetes*, which are prolific producers of antibiotics and important suppliers to the pharmaceutical industry, can produce a wide variety of secondary metabolites. Approximately 1,000 strains of *Actinomycetes* were isolated from the manures collected in the northern part of Kyushu, Japan, and in the suburbs of Bangkok, Thailand, by repeated plating on the swine and poultry feces extract agar media. The species concept in many *Actinomycetes* genera is still poorly understood, and an evaluation of strains within these genera by classical numerical and molecular taxonomic techniques is necessary to clarify the ambiguity (1987).

MATERIALS AND METHODS

SAMPLE COLLECTION AND PROCESSING

Rhizosphere soil sample were collected from different medicinal plants grow in Kolli Hills of Namakkal district, Tamilnadu, India. The rhizosphere regions of medicinally important plants such as (*Ocimum sanctum*, *Acorus calamus*). Isolation of *Actinomycetes* present in these soil sample was performed by serial dilution plate technique using starch-casein agar medium.

ACTINOMYCETES AND COLONY COUNT

Soil samples were shade dried for about 7 days prior to the microbial isolation process. Soil suspension method described by Oskay *et al.*, (2004) was used, where 1 g of the soil sample was mixed with 100 ml of sterile distilled water. The soil suspension was shaken vigorously on an orbital shaker at 200 rpm for 1h. 200 ml of the soil suspension were pipetted and seeded onto Starch Casein Agar (SCA) at pH 7. A series of dilution of the suspension from 10^{-3} to 10^{-6} were done with duplicates. All the plates were incubated at 30 °C for 1 - 2 weeks. Then *Actinomycetes* were picked and streaked onto fresh Starch casein agar plates and incubated at 30°C for 1 week. Colony forming unit (cfu) per one gram of soil was determined for all the samples collected.

MORPHOLOGICAL IDENTIFICATION

The classification of *Actinomycetes* was originally based largely upon the morphological observations. The morphological features such as cell morphology and cell arrangements of the isolated strains were done by microscopic examination (Gram’s staining procedure for bacterial species).

BIOCHEMICAL CHARACTERIZATION

Gelatin liquefaction test, starch hydrolysis, casein hydrolysis, indole test, voges-proskauer test, catalase test, oxidase test, urease test, triple sugar iron agar test, methyl red test, citrate utilization test, nitrate reduction test and hydrogen sulfide reduction test.

ANTI BACTERIAL ACTIVITY

Isolated *Actinomycetes* strains were grown in *Actinomycete* broth (BD BBLTM, USA) supplemented with cycloheximide (0.05 g/l), nalidixic acid (0.02 g/l) and nystatin (0.05 g/l). These cultures were grown in a rotary shaker at 200 rpm for seven days. The resulting culture broths (approximately 50 ml), obtained following growth of each isolate in the culture media, separated from the cell by centrifugation at 10,000 g for 15 min. The cell free supernatant was collected and freeze dried. Freeze dried materials were re suspended into appropriate concentration for antimicrobial activity by the antimicrobial activities of those extracts were tested against different test organisms by using agar disc diffusion method as described by Kirby-Bauer with modification (Boyle *et al.*, 1973) against test microorganisms. The diameter of zone of inhibition by different microorganisms such as *Escherichia coli*, *Bacillus subtilis*, *Staphylococcus aureus*, *Salmonella typhi*, *Fusarium oxysporus* etc., against the antibiotics gentamycin, Streptomycin, Erythromycin, Tetracycline, Kanamycin, Nalidixic Acid etc... Statistical Analysis Mean and Standard Deviation are performed in all experimental results in triplicate values. The diameter of the zone of inhibition was then recorded on day three. A clear zone suggests that the sample has properties that can inhibit the growth of the test organism. No clear zone indicates complete resistance.

RESULTS

The results of the present investigation include morphological and biochemical analysis. The, the anti microbial activity of organisms against a group of antibiotics were studied.

MORPHOLOGICAL AND BIOCHEMICAL CHARACTERIZATION OF BACTERIAL ISOLATES

The gram's staining shows both positive and negative to different organisms isolated from the rhizosphere soil of medicinal plants (Table 1). Zone of microbial inhibition with different antibiotic in *Penicillium chrysogenum* varied significance P value <0.0001 F value 23.086 (Table 2). The comparative significance status of microbial inhibition with different antibiotics *Penicillium chrysogenum* with gentamycin showed highly significant difference in rifampicin followed by nalidixic acid.

Table 1 : Biochemical test of Actinomycetes isolated from rhizosphere soils of *Ocimum sanctum* and *Acorus calamus*

Strains	Catalase	Urease	Nitrate	Starch hydrolysis	Triple sugar ion
<i>Ocimum sanctum</i>					
OSRSA1	+	-	+	+	Acid butt+CO ₂
OSRSA2	+	-	+	+	Acid butt+H ₂ S
OSRSA3	+	-	+	+	Acidbutt+H ₂ S
OSRSA4	+	-	+	+	Acid butt
OSRSA5	+	-	+	+	Acid butt+CO ₂
<i>Acorus calamus</i>					
ACRSA1	+	-	+	+	Acid butt
ACRSA2	+	+	+	+	Acid butt+ H ₂ S
ACRSA3	+	+	+	-	Acid butt H ₂ S + CO ₂
ACRSA4	+	+	+	+	Acid butt+ H ₂ S
ACRSA5	+	+	+	-	Acid butt + CO ₂
<i>Ocimum sanctum</i>					
Strains	Indole	Methyl red	VP	Citrate utilization	Oxidase
OSRSA1	+	+	+	+	+
OSRSA2	+	-	+	+	+
OSRSA3	+	+	+	+	+
OSRSA4	+	+	+	+	+
OSRSA5	+	-	+	+	+
<i>Acorus calamus</i>					
ACRSA1	+	-	-	+	+
ACRSA2	+	+	+	+	+

ACRSA3	+	+	+	+	+
ACRSA4	+	+	+	+	+
ACRSA5	+	+	-	+	+

Zone of microbial inhibition with different antibiotic in *Aspergillus flavus* and *E.coli* varied significance P value <0.0001 F value 796.08 (Table 2). The comparative significance status of microbial inhibition with different antibiotics *Aspergillus flavus* and *E.coli* with gentamycin, showed highly significant difference in, erythromycin, tetracyclin, kanamycin, , neomycin, rifampicin followed by streptomycin and ciprofloxacin.

Plate 1 : Zone of microbial inhibition of antibiotics with different bacteria and fungi

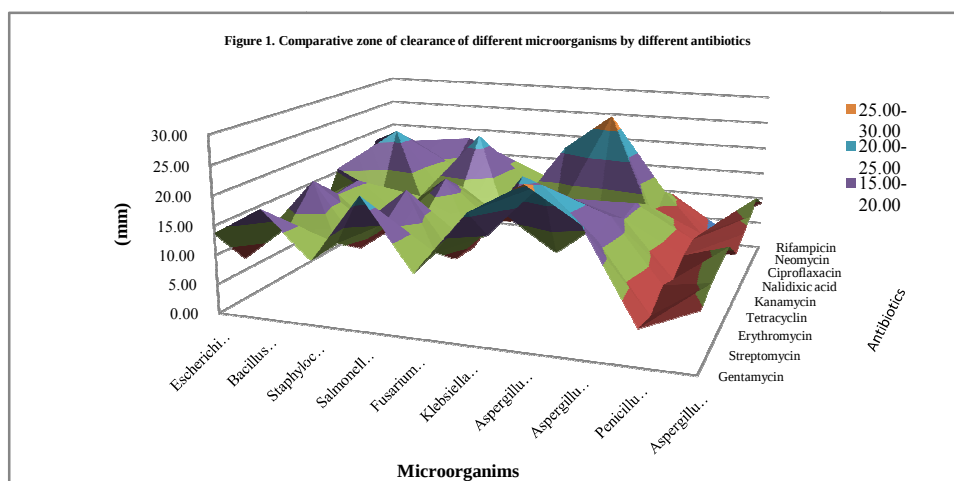
Bacteria



Fungi



A comparative significance status of microbial inhibition of different antibiotics among different bacterial species *E. coli* showed highly significant difference in *B. subtilis*, *Staphylococcus aureus*, *Salmonella typhi*, *Klebsiella pneumoniae*, *Aspergillus flavus*, followed by *Penicillium chrysogenum*, *A. fumigatus* and non significant with *Fusarium oxysporum* and *A. oryzae*. The comparative significance of microbial inhibition with different antibiotics treated in *A. flavus* and *E.coli* showed highest significance difference with OSRAS1, OSRSA5, ACRSA1, ACRSA2 and ACRSA5. With OSRSA2, OSRSA5, ACRSA1, ACRSA2 and ACRSA5. With OSRAS3, OSRSA5, ACRSA1, ACRSA2 and ACRSA5.(Figure 1)



The 16SrRNA sequencing of effective Actinomycetes species OSRSA5 and ACRSA1 showed 929bp and 893bp respectively. Multiple sequence alignment showed that these two species were *Arthrobacter siccitolerans* and *Aciditerrimonas ferrireducens* respectively (Table 3 & 4).

Table 3: Query sequence blast Strain ACRSA1 and its alignment

Description	Max score	Total score	Query cover	E value	Ident
Arthrobacter siccitolerans strain 4J27 16S ribosomal RNA gene, partial sequence	1598	1598	100%	0.0	99%
Arthrobacter oxydans strain DSM 20119 16S ribosomal RNA gene, partial sequence	1561	1561	100%	0.0	98%
Arthrobacter polychromogenes strain DSM 20136 16S ribosomal RNA gene, partial sequence	1559	1559	100%	0.0	98%
Arthrobacter phenanthrenivorans strain Sphe3 16S ribosomal RNA gene, complete sequence	1554	1554	100%	0.0	98%
Arthrobacter phenanthrenivorans strain Sphe3 16S ribosomal RNA gene, partial sequence	1548	1548	100%	0.0	98%
Arthrobacter defluvii strain 4C1-a 16S ribosomal RNA gene, partial sequence	1537	1537	100%	0.0	98%
Arthrobacter sulfonivorans strain ALL 16S ribosomal RNA gene, partial sequence	1537	1537	100%	0.0	98%
Arthrobacter scleromae strain YH-2001 16S ribosomal RNA gene, partial sequence	1535	1535	100%	0.0	98%
Arthrobacter chlorophenolicus strain A6 16S ribosomal RNA gene, complete sequence	1533	1533	100%	0.0	97%
Arthrobacter oryzae strain KV-651 16S ribosomal RNA gene, partial sequence	1528	1528	98%	0.0	98%

Table 4: Query sequence of strain OSRSA5 blast and its alignment

Description	Max score	Total score	Query cover	E value	Ident
Aciditerrimonas ferrireducens strain IC-180 16S ribosomal RNA gene, partial sequence	1269	1269	100%	0.0	91%
Acidimicrobium ferrooxidans strain DSM 10331 16S ribosomal RNA gene, complete sequence	1164	1164	100%	0.0	89%
Ferrimicrobium acidiphilum strain T23 16S ribosomal RNA gene, partial sequence	1127	1127	100%	0.0	88%
Iamia majanohamensis strain NBRC 102561 16S ribosomal RNA gene, partial sequence	1125	1125	99%	0.0	88%
Acidimicrobium ferrooxidans strain DSM 10331 16S ribosomal RNA gene, complete sequence	1120	1120	100%	0.0	88%
Acidothermus cellulolyticus strain 11B 16S ribosomal RNA gene, complete sequence	1088	1088	99%	0.0	88%

Acidothermus cellulolyticus strain 11B 16S ribosomal RNA gene, partial sequence	1072	1072	99%	0.0	87%
Aquihabitans daechungensis strain CH22-21 16S ribosomal RNA, partial sequence	1020	1020	99%	0.0	86%
Longispora albida strain K97-0003 16S ribosomal RNA gene, partial sequence	1011	1011	99%	0.0	86%

DISCUSSION

Rhizosphere soil bacteria are the group bacteria that are widely distributed in nature. It's the most fruitful source of bioactive secondary metabolites. The Rhizosphere is a nature region of soil that is directly influenced by root secretions and associated microbial activity. Actinomycetes are a group of Gram-positive bacteria that tend to form branching filaments, which in some families develop a mycelium. The optimum production of antibiotics certain criteria like carbon and nitrogen sources are required. In that study some researchers suggested that pH might play an important factor for the production of antibiotics by actinomycetes (Pandey *et al.*, 2005). Vasavada *et al.*, (2006) showed that the media used, pH, salinity, carbon and Nitrogen affects the growth and antibiotic production of actinomycetes.

Diversity and bioactivity of actinomycetes are well documented in various normal ecosystems all over the world. Actinomycetes also produce industrially important enzymes like cellulase, xylanase, pectinase, amylase, lipase and protease. Many actinomycetes also produce siderophores which have agricultural and clinical applications (Balagurunathan and Radhakrishnan 2010). The production of alpha amylase was increased by *Bacillus subtilis* in the presence of 0.1% calcium chloride (Vijayalakshmi *et al.*, 2012). Actinomycetes helps to produce plant growth hormones (indole-3, acetic acid), and also acts as biopesticide and anti fungal agent. actinomycetes are heterotrophic in nature. Better growth of actinomycetes was reported at optimum pH (7.0) and temperature (28°C). 70% of all known drugs have been isolated from actinomycetes and 60% are used in medicine and agriculture. Actinomycete produces primary and secondary metabolites of economic importance (Goshi *et al.*, 2002).

The actinomycetes are a group of bacteria which possess many important and interesting features (Veiga *et al.*, 1983). The present study revealed about the identification and microscopic examination the rhizosphere soil bacteria. The isolated organisms IMVIC, carbohydrate fermentation, catalase, oxidases starch hydrolysis test were done. Isolated organisms were performed by antibacterial activity. And isolated organisms was confirmed by the 16s rRNA sequence. The present investigation result in the bacterial species isolation. Actinomycetes maintain the symbiotic relationship with the floral species and also involved in the enhancement of the secondary metabolites which is very valuable therapeutic compounds for the human welfare.

CONCLUSION

Actinobacteria known as *Actinomycetes* is known as the most common high G+C bacteria found in soils. Bacteria produce secondary metabolites which contribute to the agricultural, medicinal and pharmaceutical fields. *Actinomycetes* isolates were tested for antimicrobial activity. In the present study the bacteria were isolated from the rhizosphere soil under the medicinal plants of (*Ocimum sanctum* and *Acrorus calamus*) The soil sample were serially diluted and the bacteria were grown on the culture media of starch casein agar. Three bacteria were isolated after the 24hrs incubation. And biochemical analysis sample A and sample B Analysis as 16s RNA gene sequences. The present studies tried to analysis the capability of producing antibiotic activity against the tested pathogens G+ and G- bacteria and compared with the efficacy of the commonly available antibiotics in the market. Among different *Actinomycetes* effective *Actinomycetes* were identified through 16srRNA sequencing. It was identified that *Actinomycetes* were comparable with commonly used antibiotics from the market in the present day which could be a value information for identifying future biochemical compounds for effective antimicrobial activity. The two effective antimicrobial *Actinomycetes* were identified as *Arthrobacter siccitolerans* and *Aciditerrimonas ferrireducens*.

Acknowledgement:

We thank Dr. M. Karunanithi, Chairman and Secretary, Vivekanandha Educational Institutions for Women for providing necessary lab and logistic facilities to complete our work.

REFERENCES

1. Arunachalam R. wisely E.G George J and annadurai 2010. Novel approaches for identification of streptomycetes noboritoensis TBG-Y20 with cellulose production, current research in bacteriology 3(1) 15-62
2. Balagurunathan, R and Radhakrishnan, M. 2010. Biotechnological, Genetic engineering and Nanotechnological potential of actinomycetes. In: Dubey RC, Maheshwari DK, Saravanamuthu R (Eds.), Industrial Exploitation of Microorganisms. I.K. International Publishing House Pvt Ltd, New Delhi, India, pp. 302-320.
3. Good fellow, Lacey M.J. and Todd, C.1987. Numerical classification of thermophilic streptomycetes. J. Gen Microbiol.,133:3135-3149
4. Goshi, K., Uchida, A, Lezhava, M, Yamasaki, K, Hiratsu, H. Shinkawa and H. Kinashi, 2002. Cloning and analysis of the telomere and terminal inverted repeat of the linear Chromosome of Streptomyces griseus, J. Bacteriol., 184:3411-3415.
5. Hayakawa, M; Sadakata T; Kajiura T; Nomomura H. New methods for the highly selective isolation of microsporidia and Microbispora from soil J Ferment. Bioeng 1991.72,320-326
6. Ikemoto T., Katayama A. Shiraishi and T. Haneishi 1983. Actidione, a new method antibiotic from streptomyces albidus II isolation physical chemical & biological properties .J. antibiotic Tokyo 36(9): 1097-1100
7. Kavitha A and Vijayalashmi M 2007 studies on cultural, physical and antimicrobial activities of Streptomyces rochei J. Appl. Sci Res 3(12) 2026 -2092 Kaliuzhania L.D Brianskaia A.M Korotich A.S and Kasurchenko, VP antibiotiki 1975,7-617
8. Mishra P. and S. Mishra 2011. Study of antibacterial activity gram positive and gram negative bacteria. Am.J food Technol 6:330-341
9. Oskay usame tamer and cem Azeri 2004. antibacterial activity of some actinomycetes isolated from farming soil of Turkey. African journal of Biotechnology vol 3(9) PP441-446.
10. Pandey, B, Ghimire, P., Agrawal V, P 2004. studies on antibacterial activity of Actinomycetes isolated the khumbu region of Nepal ,J.Biol.Sci,23.P44-53
11. Pandey, B, Ghimire, P., Agrawal V, P 2004. studies on antibacterial activity of actinomycetes isolated the khumbu region of Nepal ,J.Biol.Sci,23.P44-53
12. Pattanayak P.D Behera D. Das and S.k Panda 2010. Ocimum sanctum Linn A. reservoir plant for therapeutical applications: An overview Ph cog. Rev 4: 95-105
13. Poornima, R and P.Ponmurugan 2006. Studies on secondary metabolite production by streptomycetes species. Paper presented in national seminar on Emerging trends in industrial biotechnology. Bioxplore 06 vivekanandha college of engineering, Tiruchengode, TN, India ,February 17 and 18
14. Vasavada SH Thumar JT Singh sp 2006. Secretion of a potent antibiotic by salt-tolerant and alkaliphilic actinomycete streptomycetes sananensis strain RJT-T curr sci 9:1393-1397
15. Veiga M, Esparis A, Fabregas J, 1983. Isolation of cellulolytic actinomycetes from marine sediments. Appl Environ Microbiol ,46: 286-287.
16. Wellington, E.M.H., E Stackebrandt D. Sanders, J. Wolstrup and N.O.G Jorgensen, 1994. taxonomic status of kitasatosporia and proposed unification and 16 rRNA analysis and emendation of streptomycetes, Intl, J, syst. Bacteria 42:156-160.

HERITAGE TOURISM IN KANYAKUMARI DISTRICT: WITH REFERENCE TO STRATEGIC FORTS BUILT BY DE LANNOY

J. MUTHUKUMAR

Assistant Professor in History, Annamalai University, Annamalai Nagar – 608 002.

E-mail: jmk1976_suraj@yahoo.co.in

ABSTRACT

Heritage Tourism in India has witnessed an immense growth with the country possessing in itself rich heritage and ancient culture. India's glorious past and cultural diversity makes our country potential to attract a huge number of domestic and foreign tourists to the destinations. The heritage of the country is best reflected in the ancient Hindu temples, palaces, monuments, and forts that are found throughout the country. Kanyakumari District which lies in the southern most corner of the country has a large number of religious, heritage and cultural tourist destinations in it. The Dutch in the 17th century had specific interest in establishing political and trade supremacy in the erstwhile Travancore State of which the present day Kanyakumari District was also a part. The Dutch Commander De Lannoy who was imprisoned by the Travancore Army later enrolled himself in the contingent of King MarthandaVarma who built forts, manufactured arms and ammunitions and trained soldiers in modern war fare. The paper attempts to reveal the Historical and Heritage value of these forts built by De Lannoy found in Kanyakumari District through Tourism.

Keywords: Heritage, Tourism, Monuments, Forts, Barracks.

INTRODUCTION

Kanyakumari District is the southernmost district in Tamil Nadu state and mainland India. It is also called as the "God own district". It is also the richest district in Tamil Nadu in term of per capita income, and also tops the state in Human Development Index (HDI), literacy and education. The district headquarters is Nagercoil. Kanyakumari district has a varied topography with sea on three side and the mountains of the Western Ghats bordering the northern side. Geologically, the landmass of the district is much younger when compared to the rest of state- faulted as late as 2.5 million years during the Miocene, after which numerous transgression, as well as regression of sea, had shaped the western coast of the district. Historically, Nanjinad (Agasteeshwaram and Thovala taluks) and End Nadu (Vilavancode and Kalkulam taluks) which comprise the present Kanyakumari District, were ruled by various Tamil dynasties the Venad Kingdom, Travancore Kingdom, the Cheras, the Cholas, the Ays and the Nayaks. It was part of the princely state of Travancore during the colonial time prior to Indian Independence.

DE LANNOY

Eustachius Benedictus De Lannoy sometimes called 'Captain De Lannoy' was a Belgian naval commander of the Dutch East India Company, who was sent by the company to help establish a trading port at Colachel, Southern India, but was defeated at the Battle of Colachel by the Travancore

army under Maharaja Marthanda Varma in 1741, and subsequently became a valiant and successful commander of the same foreign army that had defeated him. Dutch Army in a bit to Capture Eraniel made a pitched battle at Colachel in August 1741. The Dutch forces were defeated and De Lannoy along with 24 other Dutch officer were taken as prisoners.

De Lannoy built the Nedumkotta, a line of fortifications in the North of the Kingdom, known as the Travancore Lines. This fortification proved immensely useful in defending the kingdom against the attacks of Tipu Sultan and other marauders. Many other forts like the Vattakottai Fort facing the sea near Kanyakumari, the Savakkotta, and the MarunnuKotta or Ammunition fort, both being hill-forts near Padmanabhapuram, were built under De Lannoy's supervision. Udayagiri Fort, very close to the fortified capital of Padmanabhapuram, was a military training centre and barracks. De Lannoy is also credited with the erection of some other small forts and tunnels.

VATTA KOTTAI FORT

A round fort was built along the eastern sea coast, three miles north east of Cape Comorin (Kanyakumari) by the Travancore Kings. The shape of the fort seems to be round. So this fort is familiarly known a Vatta Kottai(see picture No:3) (vattam in Tamil conveys the meaning round; kottai stands for fort so this fort is known as VattaKottai). Long before there existed pearl trade between Rameswaram and Cape Comorin. There was sizable import and export trade flourished. The export and import from Travancore with various foreign countries were carried through this fort.

This historic granite fort stands on the brink of the Indian Ocean. It is lying in 77° 34' 7" east longitude and 8° 7' 22" north latitude. The fort covers an area of three acres and fifty four cents of land including the four walls. Though the fort was primarily intended for yet often served as military centre also. Often pirates committed depredations in Nanjil Nadu. To prevent the unwarranted entry of the foreigners, the fort was built. This fort was a defense plan designed by De Lannoy, during the period of MarthandaVarma, the king of Travancore. Valia Ejaman, the Commander of the Travancore army, stationed in the Aralvaimozhi fort also took efforts to build this fort.

The fort was built during the period of MarthandaVarma. The Commander-in-Chief of theTravancore army, De Lannoy with the assistance of Commander of the Aralvaimozhi Fort, MarthdnndaPillai, familiarly known as Valia Ejaman built this fort during the later part of the eighteenth century. MarthadaVarma was the King of Travancore from 1729-1758. In 1741, at the battle of Colachel, MarthandaVarma defeated the Dutch army under De Lannoy and arrested De Lannoy. But after the battle of Colachel, Marthandverma appointed De Lannoy as the Commander of the Travancore army.

The old document dated 945 M.E. (1770 A.D.) confirm the fact that the fort would have been built during the period of MarthandaVarma and the fort would have been equipped with all conveniences during the period of Rama Varma (1758-1798)the successor of MarthandaVarma. De Lannoy assumed office as Commander of the Travancore army in 1741 and he died on the first day of June 1777. Hence the Vattakottai must have been built between 1741 and 1777.

Further the Bhagavanthy Amman Temple records of Cape Comorin mention that the construction of Vattakottai fort was carried out with the indefatigable works of two native chieftains called Bhagavathi MarthandaPillai and Nagendran.

Vattakottai fort was erected upon small sandstone full of marine shells. Large size rubles are used for the construction of this fort. The entrance of the fort is twenty two feet. This entrance opens into a hall. The entrance gate bears the emblem of the Travancore government. The green base with two elephants on both sides holding a shell and emblem of the Travancore are government. Even

today the same adopted by Government of Kerala. This majestic entrance has drawn the attention of the visitors. The fort has four walls, adjoining together in all the four directions.

The bastions and the walls were protected by small wall having six feet height. The small parapet wall was built of granite. This parapet wall was an additional protection to the fort. The walls were composed of two layers of granite walls. The space in between the two layers of walls was filled with sand, mortar and bricks.

There are four building and a cellar inside the fort which were used as store houses. There is a constant belief that there existed an underground tunnel between the Vattakottai fort and the Padmanabhapuram Palace at Thukalay. A broken piece of cannon is found inside the fort.

There is a pond and a well inside the fort. In 1809, a large portion of the British army under Colonel St. Legar destroyed the South Travancore Line. But Vattakottai remained unhampered. Vattakottai is a magnificent specimen of military architecture of the Travancore State under MarthandaVarma and his commander De Lannoy. Vattakottai is now maintained by the Archeological importance under the Ancient Monument of Archaeological Sites Act of 1958. Thus, historical monument of Vattakottai serves as an important tourist in Kanyakumari.

UDAYAGIRI FORT:

Udayagiri fort is situated on the main southern road 16 kilometers North-East of Nagercoil, the capital of the present Kanyakumari district and thirty three miles South-East of Trivandrum, the capital of the Kerala State. The fort is 3 kilometers away from Padmanabhapuram fort towards the south eastern side.

In the early period during the 8th century there existed a mud fort in Udayagiri, The origin of the mud fort is shrouded in mystery. During the tenth century Travancore familiarly known as Venad was ruled by Baskara Ravi Varma. Baskara Ravi Varma imprisoned one of the Chola ambassadors and kept him as a prisoner in the mud fort that existed at Udayagiri. Chola emperor, Raja Raja infuriated at the behavior of Bhaskara Ravi Varma attacked Travancore, captured many places in Nanjil Nadu including Kanyakumari and reached the old mud fort at Udayagiri. The fort was encircled by the Chola army and the fort was burnt. The old Udayagiri fort is known as Makotai. This fort regained its strength in 1600 during the period of Vira RaviVarma (1565-1609) of Travancore.

De Lannoy served the King of Travancore faithfully which resulted in the wide territorial expansion of the State. He was entrusted with the task of organizing the Travancore army. He was also appointed to inspect every garrison and outpost. De Lannoy repaired old forts Udayagiri Fort. The most important one was the fort at Puliyoorkurichi. The fort at Udayagiri was built under his personal supervision and there he established a foundry for the manufacture of guns, mortars, cannon balls and gun powder.

Foundry in the Udayagiri Fort

Udayagiri Fort was the chief arsenal of the Travancore Government, MarthandaVarma established a foundry here and manufactured guns, mortars and cannon balls. The entire responsibility of the work was shouldered by De Lannoy, for the making of shots; iron was brought from a mine in the Aralvaimozhi fort. De Lannoy constructed an arsenal within the fort where large quantity of arms and ammunitions required for the state was manufactured. Barracks were also built within the fort on a large scale. The war accessories produced by De Lannoy have been preserved even today.

The Udayagiri fort was also used as a confinement to imprison political offenders and prisoners of war. Immediately after the victory in the battle of Colachel in 1741, MarthandaVarma

imprisoned all 24 prisoners of war including De Lannoy in the Udayagiri fort. Likewise Maharaja Rama Varma arrested the financial minister of Travancore Sankara Narayana Pillai on corruption charges and kept him as a prisoner in the Udayagiri fort.

A Catholic Church is found in a dilapidated condition within the Udayagiri Fort. De Lannoy the defeated Dutch Commander at the battle of Colachel was appointed as the Commander-in-chief of the Travancore forces by MarthandaVarma. De Lannoy, after having been appointed as the Commander of the Travancore army, sought permission from the Maharaja to construct a fort. The purpose of the construction of the Udayagiri fort was to have a strategic centre and at the same time De Lannoy wanted to reside within the fort. The Maharaja gave him permission. Accordingly De Lannoy stayed within the fort. Maharaja Rama Varma gave De Lannoy the permission to construct a church also inside the fort.

De Lannoy, the architect of the Udayagiri fort, served under the King MarthandaVarma and his successor Rama Varma for thirty-six years from 1741 to 1777. De Lannoy lived in the fort with his wife Margaret De Lannoy and his son Johnnes De Lannoy. De Lannoy died in 1777 in the Udayagiri fort and was buried with full military respect within the Udayagiri fort near the Church which was built by him with the permission of the King MarthandaVarma. On the tomb of De Lannoy, the following statement is engraved in Latin Language.

Here lists Eustau Benedictive De Lannoy, who as the general-in-chief of the troops of Travancore, was in command and during about 37 years served the King with the utmost fidelity. By the might of his arms and fear he subjected to the King's sway all the kingdoms from Kanyakulam to Cochin. He lived 62 years and five months and died on 15 June 1777, The Udayagiri fort was a testimony to his memory.

MARUNTHU KOTTAI

MarunthiKottai is situated in KalkulamTaluk, Villavoor Town Panchayat of Kalkulam revenue village. Near the MarunthuKottai village on the western side, there is a mountain of 800 feet height. On the top of the mountain, this MarunthuKottai fort was constructed. The walls of the fort envelop 200 acres of land and at a length of 500 feet. On the western side, the wall was constructed by cutting stones and it is 300 feet high. The basement of the fort was built by De Lannoy's stone and it is about 10 feet high. Inside the fort a vertical rock can be found, on the four corners of the fort there are four bastions. On the northern side of the fort wall at the centre, there is another bastion. Near the northern side there is a stone mandapam and at the south-west side there is a pitch made up of stone structure, 5 feet big and outside of the fort western wall pitch. The MarunthuKottai was used for preparing explosives and hence the fort was named after MarunthuKottai.

CONCLUSION

Tamil Nadu has been a hot tourist destination in India with its cultural, historical, heritage, natural and religious tourist destinations. The Fortress built by the Dutch Commander General De Lannoy in Kanyakumari District such as the Vattakottai, MarunthuKottai and the Udayagiri Fort speak about the military might of the Travancore State in the Colonial period. Further they also speak in volume the architectural munificence in building impregnable fortress, the European warfare techniques adopted by the Dutch General and his leniency to the Indian overlord. The Tourist inflow into Tamil Nadu saw a leaping 43% percentage increase in the year 2011, when about 14 crore tourists visited the state compared to the 10.58 crore in the previous year. Kanyakumari District which is an important tourist destination had seen an increasing inflow of both the domestic and foreign tourists. According to the available statistics 73, 25,000 tourists have visited Kanyakumari by the year 2011. As per the tourism survey for Tamilnadu (January to December, 2014) conducted by Ministry of Tourism the inflow of

Domestic Tourist to Kanyakumari District was 99, 75,856 and foreign tourist was 3, 83,047. Apart from the beaches and dams the heritage destinations of Kanyakumari have started attracting a huge number of tourists, the government through Tourism Department and the NGO should take steps to improve the transport and basic infrastructure facilities of the Heritage Destinations.

Reference

1. T.K.VeluPillai, *Travancore State Manual*, Trivandrum, 1940.
2. S.Padmanabhan, *KumariMavattaKottaigal*, Nagercoil, 1978.
3. K.K.Pillay, *The Suchindrum Temple*, Madras, 1953.
4. P.Shungoonny Menon, *A History of Travancore from the Earliest Time*, Madras, 1878.
5. V.Nagam Aiya, *The Travancore State Manual*, Vol.I, Trivandrum, 1906.
6. E.G.Hatch, *Travancore-A Guide Book to the Visitor*, Madras, 1933.
7. V.NagamAiya, *The Travancore State Manual*, Vol. III, Trivandrum, 1906.
8. A.SreedharaMenon, *A Survey of Kerala History*, Kottayam, 1967.
9. M.Ramamurthy, *History of South India*, Madurai, 1983.
10. E.G.Hatch, *Travancore Guide Book for the Visitor*, Madras, 1933.
11. B.Sobhanan, *Dewan VeluThampi and the British*, Trivandrum, 1978.
12. C.R.Boxer, *Dutch Seaborne Empire, 1600-1800*, New Delhi, 1960.
13. www.tn.gov.in/deptst/tourism.pdf
14. Tourism Survey for Tamilnadu (Jan – Dec. 2014), Ministry of Tourism, Government of India, 2015.

திருமாலின் திருவுள்ளம் திளைப்பது திருவரங்கம்

முனைவர். எ. கற்பகம்

எம்.ஏ, எம்.பில், பி.எச்.டி, இணைப்பேராசிரியர் - தமிழ்த்துறை,
அரசு கலைக்கல்லூரி, கரூர் -639005

மனிதன் விரும்பும் பொருட்கள் உண்டு. இடங்கள் உண்டு. பரந்து விரிந்த உலகம் முழுவதும் இறைவனுடையது. ஆனால் இறைவன் விரும்பி கிடக்கும் இடம் திருவரங்கம். திருமாலின் திருவுள்ளம் திளைப்பது திருவரங்கம். இது தமிழ் நாட்டின் வைணவத் தலைநகரம். இதைப் பெரிய கோவில் என்றும் அழைப்பதுண்டு. இது தமிழகத்துக்கு இதயம் போன்றது. திரண்டோடும் காவிரியில் மிதந்து கொண்டிருக்கும் நெடிய தீவு திருவரங்கம். அரங்கனும் அளவிலா மகிழ்வோடு ஆனந்தமாய் கிடப்பதும் பொன்னிவள நாட்டின் இயற்கையின் பேரமைப்பைத் துணையாகக் கொண்டு கட்டுவிக்கப் பெற்றதும் திருவரங்கம். காவிரிக்குத் தனிப்பெருமை ஒன்றுண்டு. அதனுள் மூன்று தீவுகள் உள்ளன. அவை அரங்கம் எனப் பெயர் பெறும். ஆதிரங்கம், மத்தியரங்கம், அந்தரங்கம் என்பன. முதல் இரண்டும் கர்நாடக மாநிலத்தில் உள்ளன. அந்தரங்கம் என்றழைக்கப்படும் மூன்றாவது அரங்கம் தான் திருவரங்கம். காவிரி, கொள்ளிடம் என்னும் இருநதிகளாகப் பிரியுமிடத்தில் இருபது மைல் நீளமும், இரண்டு மைல் அகலமும் கொண்டது.

“செல்வப் புனற்கா விரிகுழ் தென்னரங்கமே” ¹

“திருவாய் மொழியாம் நாயிரமும்

தேனாய்ப் பெருகும் தமிழே வா!

திருமால் தனக்கே மாலையாகி

திருவரங்கத்தனை வலம்வரும் தாயே!” ²

சிறப்புப் பெற்ற திருவரங்கத்தை திருமங்கையாழ்வார் 50 பாசுரங்களில் பாடுகிறார். பிரமணைப் படைத்தவனும், பிரளய காலத்தில் உலகங்களை அமுதுசெய்தவனும், தேவர்களுக்குத் தலைவனுமான திருமாலின் விரும்பி துயில் கொள்ளும் இருப்பிடம் திருவரங்கம்.

ஆழ்வார்கள் பன்னிருவரில் பதினோரு ஆழ்வார்களின் மங்களாசாகனத்தைப் பெற்ற திவ்வியதேசமாகும். 11 ஆழ்வார்கள் 247 பாக்களில் மங்களாசாசனம் பெற்ற திவ்வியதேசம். 108 திவ்வியதேசங்களில் இப்பெருமை வேறெந்த திவ்விய தேசத்திற்கும் இல்லை.

திருவரங்கத்தில் பள்ளி கொண்டுள்ள பெருமாள் சத்தியலோகம் எனப்படும் பிரம்மலோகத்தில் பிரம்மதேவனால் தினமும் வழிபட்ட திருவாராதளப் பெருமாள் ஆவார். இம்மண்ணுலகில் சூரிய குல இட்சுவாகு என்னும் மன்னன் பிரம்மனை நோக்கிக் கடுந்தவம் செய்தான். பிரம்மன் தோன்றி வேண்டிய வரம் கேள் என்றான். அதற்கு இட்சுவாகு பிரம்மனே, உம்மால் தினந்தோறும் வழிபாடு செய்யப்படும் திருமாலின் திருவாராதன விக்ரகம் வேண்டுமென்று கேட்டான். பிரம்மனும் வழங்கினான். அப்பெருமானை அயோத்திக்கு கொண்டு வந்து இட்சுவாகு வழிபட்டான். திருபாற்கடலில் பள்ளி கொண்ட இப்பெருமானே இட்சுவாகு

மன்னன் முதல் இராமபிரான் வரையில் உள்ள சூரிய குல மன்னர்கள் வழிபட்டு வந்த குல தெய்வமாயினான்.

“திரேதா யுகத்தில் இராமாவதாரம் மேற்கொண்ட திருமால் இராவணனையழித்து அயோத்தியில் பட்டம் சூட்டிக்கொண்டார். இலங்கையிலிருந்து தன்னுடன் போந்த வீடணனுக்கு விடைகொடுத்து அனுப்பும்போது தன் முன்னோர்களால் பிரம்மனிடமிருந்து கொணரப்பட்ட இந்த திருவாராதனப் பெருமானை வீடணனுக்குச் சீதனமாகக் கொடுத்தார். வீடணன் இப்பெருமானைப் பெற்றுத் திரும்பியதை வால்மீகி தமது இராமாயணத்தில் ...கூறுகிறார்.”³

“ வண்டின முரலும் சோலை

மயிலினம் ஆலும் சோலை

கொண்டல் மீ தணவும் சோலை

குயிலினம் கூவும் சோலை

அண்டர்கோ னமரும் சோலை

அணிதிரு வரங்க மென்னா”⁴

அப்பெருமானை இலங்கைக்கு வீடணன் கொண்டு வரும்போது இயற்கையெழில் கொஞ்சம் காவிரி கொள்ளிட ஆறுகளுகிடையே பள்ளி கொள்ள விரும்பியதால், திருமால் வீடணனுக்கு சற்றுக் களைப்பை ஏற்படுத்த வீடணன் இப்பெருமானை இவ்விரு நதிக்கிடையிலே இவ்விடத்தில் வைத்தான். தன் உள்ளங் கவர்ந்த இடமாதலால் அசைக்க இயலாத அளவிற்கு வீடணன் செல்ல வேண்டிய தென்றிசை நோக்கிப் பள்ளி கொண்டார். வீடணன் மிகுந்த துன்பம் அடைந்தான்.வீடணன் கனவில் பெருமாள் தான் விரும்பியே இவ்விடத்தில் பள்ளி கொண்டதாகவும் , கவலை வேண்டாம் வீடணன் செல்ல வேண்டிய வழிநோக்கியே பள்ளி கொண்டுள்ளதாகவும் கூறினார். ஆண்டுக்கொருமுறை தன்னை வழிபட்டுச் செல்லுமாறு கூறினார்.

“ குடதிசை முடியை வைத்துக்

குணதிசை பாதம் நீட்டி

வடதிசை பின்பு காட்டித்

தென்திசை யிலங்கை நோக்கி

கடல்நிறக் கடவு ளெந்தை

அரவணைத் துயிலு மாகண்டு

உடலெனக் குருகு மாலோ

என்செய்கே னுலகத் தீரே”⁵

என்கிறார் தொண்டரடிப் பொடியாழ்வார். அப்பொழுது சோழ நாட்டைஆட்சி செய்த தர்மவர்மன், பள்ளி கொண்ட பெருமானுக்குச் சிறிய கோயில் எழுப்பி வழிபாடு செய்தான். இக்கோவில் காவிரியாற்றின் வெள்ளப்பெருக்கால் உருக்குலைந்தது. பின்னர் சோழ மன்னன் கிள்ளிவளவன் கனவில் பெருமான் தன் இருப்பிடத்தைக் காட்டினார். கிள்ளிவளவன் அரங்கனுக்கு கோயில் எழுப்பினான்.

பின்னர் வந்த சோழ மன்னர்கள், பாண்டிய மன்னர்கள், விஜயநகர மன்னர்கள், ஆழ்வார்கள், ஆகியோரின் பணியால் என்றும் உயர்ந்தோங்கிச் சிறப்புப் பெற்று விளங்கும்.

திருமகள் தினமும் வந்து வழிபாடு செய்யும் இத்தலம் இராமாயண காலத்தோடு தொடர்புடைய இந்தியாவின் பெருமைக்கு மதமும் ஒரு காரணம் என்பதைப் பறைசாற்றுகிறது.

“நீல மேகம் நெடும் பொற்குன்றத்துப்
பால்விரிந்து அகலாது படிந்தது போல
ஆயிரம் விரித்தெழு தலையுடை அருந்திறற்
பாயற் பள்ளிப் பலர் தொழுதேத்த
விரிதிரைக் காவிரிவியன் பெருந்துருத்தி
திருவமர் மார்பன் கிடந்த வண்ணம்” ⁶

விரிந்த அலைகளோடு கூடிய மிகப் பெரிய காவிரியாற்றின் இடையில் திருமகள் விரும்பும் மார்பை உடையவனும், ஆயிரம் தலைகளையுடைய ஆதிசேடன் என்னும் பாம்பணையின் மீது அழகுற, சாய்ந்து கொண்டுள்ளார்.

பரமபதத்தில் இரண்டு மணத்தூண்கள் உள்ளது. பரமபதத்திற்குச் செல்வோர் இந்த மணத்தூண்களைத் தழுவி அழிவில்லாத பேரின்பமயமான சூழ்நிலையில் எம்பெருமானுக்கு பணி விடை புரியும் தன்மை வாய்ந்தவர்கள். திருவரங்க கோயில் கருவறையில் இரண்டு மணத்தூண்கள் உள்ளன. இந்த மணத்தூண்களைத் தழுவிக்கொள்வோர் பரமபதத்து பேரின்ப வாழ்வைப் பெறுவர்.

“காயாம்பூ மலர்ப்பிறங்க லன்ன மாலைக்
கடியரங்கத் தரவனையில் பள்ளி கொள்ளும்
மாயோனை மணத்தூணே பற்றி நின்றென்
வாயார என்கொலோ வாழ்த்தும் நாளே” ⁷

என்கிறார் குலசேகராழ்வார்.

கம்பரின் கம்பராமயணம் இங்கு தான் அரங்கேற்றம் செய்யப்பட்டது. இவ்விடம் தாயார் சன்னதிக்கு எதிரே கம்பர் மண்டபம் என்ற பெயரில் நிலைப்பெற்றுள்ளது.

திருப்பாணாழ்வார் தாம் தாழ்ந்த குலத்தில் பிறந்ததற்காக திருவரங்கத்திற்கு உள்ளே செல்லாமல் காவேரி கரையிலிருந்து திருவரங்கனைப் நோக்கிப் பக்திப் பெருக்கால் பாடல்களைப் பாடினார். ஒருநாள் திருவரங்கனுக்கு வழிபாடு செய்யும் லோகசாரங்க முனிவர் தென் காவிரியில் திருவரங்க நாதனின் திருமஞ்சனத்திற்குக் காவிரித் தண்ணீரை முகந்து கொண்டு வரும்போது தென் காவிரிக் கரைமீது நின்று கொண்டு திருப்பாணாழ்வார் மெய்மறந்து பாடினார். லோகசாரங்க முனிவர் கையை தட்டி பாணனே அப்பால் செல்க எனக் கூறியும் அவர் காதில் விழவில்லை. இதைக்கண்ட லோகசாரங்கர் ஒருசிறு கல்லை எடுத்த பாணர் மீது வீச நெற்றியில் பட்டு இரத்தம் பீறிட்டது. அவ்வேளையில் திருவரங்கனின் நெற்றி யினின்றும் இரத்தம் வழிந்தது. அன்றே லோகசாரங்கர் கனவில் வந்த அரங்கன் பாணரைத் துன்புறுத்தியது தவறென்றும், உம் தோள் மீது அவரைச் சுமந்து வரப் பணித்தார்.

மறுநாள் காலையில் லோகசாரங்க முனிவரும் மற்றவரும் தென்காவேரி சென்று தம்மை மறந்து அரங்கன் மீது பக்திப் பாடல்களைப் பாடிக் கொண்டிருந்த திருப்பாணாழ்வாரை வணங்கி, அவரைத் தம் தோள் மீதேற்றி திருவரங்கர் முன் சேர்த்தார். திருவரங்கனைக் கண்குளிரக் கண்ட திருப்பாணாழ்வார் அரங்கனின் திருமுகம், கண், வாய், செவி, ஆகியவற்றின் அழகில் மயங்கி அமலாதிபிரான் எனத் தொடங்கும் பத்துப் பாடல்களை வழங்கி திருவரங்கன் திருவடக்கீழ் புருந்து மறைந்தார். திருமாலின் அடியவர்கள் எக்குலத்தவராயினும் சமமே என்று பறை சாற்றும் சாதி சமய பேதமற்ற சமூகம் திருவரங்கத்தில் வித்திட இவ்வரங்கனே சான்றாவார்.

“திவ்விய தேசங்களில் தமிழ்பாசரங்களை இசையோடு இசைத்து முன் செல்ல அதனைச் செவிமடுத்த வண்ணம் பெருமாள் பின்னே வர, தமிழ் முன் செல்லத்திருமால் பின்வர என்று தமிழ் பிரபந்தட்கு முன்னுரிமை கொடுத்து சீர்திருத்தம்

செய்து இராமானுஜர் இங்கு நெடுங்காலம் இருந்தார்.... இறுதியில் இராமானுஜர் திருநாடு அடைந்ததும் ரங்கநாதனே அவரை வஸந்த மண்டபத்தில் வைக்குமாறு பணிக்க இன்றும் இவரது திருமேனியை தரிசிக்கும் இத்தகைய கீர்த்தி வேறெந்த திவ்விய தேசத்திலும் இல்லை.”⁸

அரையர் சேவை என்பது நாலாயிரத் திவ்வியப் பிரபந்தத்தை ராக தாளத்தோடு இன்னிசையாய் இசைப்பதாகும். மார்கழி மாதத்து வைகுண்ட ஏகாதசியின் போது இங்கு அரையர் சேவை நடப்பது செவிகட்கு மட்டுமின்றி கண்களுக்கும் விருந்தாகும். ஒரு சில திவ்விய தேசங்களில் மட்டுமே இந்த அரையர் சேவை இன்று வழக்கிலிருந்தாலும் திருவரங்கத்து அரையர் சேவை மிகச் சிறப்பானதாகும்.

இந்திரன் பிரம்மன் உருத்திரன் முதலிய தேவர்கள் எல்லையற்ற நல்ல குணங்களைச் சொல்லி, துதிக்கப் பெற்றவனாய், எல்லா உயிர்களுக்கும் தந்தையும் தாயும் மக்களும் ஆகிய உலக பற்றையறுக்கும் மருந்தும், எல்லா உயிர்களுக்கும் வாழ்வாக விளங்குபவன் திருவரங்கத்தில் பள்ளி கொண்டுள்ள திருமாலே.

“இந்திரன் பிரம்மன் சீசனென் நிவர்கள்

எண்ணில்பல் குணங்களே யியற்ற

தந்தையும் தாயும் மக்களும் மிக்க

சுற்றமும் சுற்றிநின் றகலாப்

பந்தமும் பந்த மறுப்பதோர் மருந்தும்

பான்மையும் பல்லுயிர்க் கெல்லாம்

அந்தமும் வாழ்வு மாயவெம் பெருமான்

அரங்கமா நகரமர்ந்த தானே”⁹

திருவரங்கம் வைணவர்களுக்கு மட்டுமின்றி, உலகத்தின் அனைத்து மக்களுக்கும் உரிய ஒரு தனிச் சொத்து. பக்தியில் மட்டுமன்று கலை நயத்திலும் , வரலாற்றிலும் நிலைத்த இடத்தைப் பெற்றுள்ளது. உயர்ந்த கோபுரம் போன்று மக்களின் மனதில் உயர்ந்த இடத்தைப் பெற்றுள்ளது. அதனால் தான் ஆண்டாளும் வையத்து வாழ்வீகாள் என்று உலக மக்களையெல்லாம் நோக்கிக் கூறினார்.

அடிக்குறிப்புகள்

- 1.. திருமங்கையாழ்வார் நாலாயிரத் திவ்வியப் பிரபந்தம் பா. 1381
2. சிவ.மங்கையர்க்கரசி இலக்கிய இயக்கங்கள் ப. 33
- 3.. 108 திவ்வியதேசங்கள்ஸ்தலவரலாறு ப. 32
4. திருமங்கையாழ்வார் நாலாயிரத் திவ்வியப் பிரபந்தம் பா. 885
5. தொண்டரடிப்பொடியாழ்வார் ” பா. 890
6. உ.வே. சாமிநாதையர் சிலப்பதிகாரம் -நாடுகாண்காதை பா. 35-40
7. திருமங்கையாழ்வார் நாலாயிரத்திவ்வியப்பிரபந்தம் பா. 648
8. 108திவ்வியதேச ஸ்தல வரலாறு ப. 37
9. திருமங்கையாழ்வார் நாலாயிரத்திவ்வியப்பிரபந்தம் பா. 1409

Alcohol-Associated Disorders: Pathophysiology, Manifestations and Treatment Strategies

Dr.M.Shenbagam

Assistant Professor, Department of Biochemistry and Biotechnology, Annamalai University,
Annamalainagar- 608 002, Chidambaram, Tamil Nadu, India.

Introduction

Alcohol consumption remains a leading modifiable cause of preventable morbidity and mortality worldwide, and its harm extends far beyond the diagnosis of alcohol use disorder alone ([Mackowiak et al., 2024](#)). Clinical practice increasingly recognizes alcohol-induced disease as a multisystem syndrome in which injury in one organ often amplifies dysfunction in others, particularly through the gut-liver axis, systemic inflammation, malnutrition, and neurobehavioral reinforcement of continued drinking. This systems view is important because patients often present late, with advanced liver disease, heart failure, pancreatitis, or withdrawal complications already established ([Thomes, 2021](#)). Consequently, effective management requires more than brief counseling; it needs an integrated approach that combines addiction treatment, organ-specific care, nutrition, and follow-up.

Alcohol-related harm is not uniform across individuals. Risk is shaped by dose, pattern of drinking, sex, age, genetic susceptibility, metabolic comorbidity, viral hepatitis, obesity, nutrition, and social determinants that delay care ([Bertha et al., 2021](#)). Binge drinking can provoke acute physiologic stress, whereas chronic heavy intake drives progressive organ injury through cumulative biochemical and inflammatory injury ([Stickel et al., 2017](#)). Even when the liver is the dominant clinical focus, alcohol-related pathology commonly involves the pancreas, cardiovascular system, and central nervous system, making comprehensive assessment essential. This review validates the cumulative information on AID and their current therapeutic interventions in current era.

Core mechanisms

The central biochemical event in alcohol toxicity is ethanol metabolism into acetaldehyde and downstream reactive oxygen species ([Birková et al., 2021](#)). Ethanol is metabolized mainly by alcohol dehydrogenase and aldehyde dehydrogenase, with CYP2E1 becoming increasingly important in chronic exposure, especially when oxidative stress is high. Acetaldehyde is highly reactive and forms adducts with proteins, lipids, and DNA, which alters function and promotes immunogenicity ([Setshedi et al., 2010](#)). The downstream consequence is a cascade of lipid peroxidation, DNA damage, altered membrane integrity, and activation of inflammatory and fibrogenic pathways.

Alcohol also disrupts cellular energy balance. Excess NADH generation shifts redox state, suppresses fatty acid oxidation, promotes triglyceride accumulation, and impairs mitochondrial respiration, which is a major reason alcoholic steatosis develops early ([Donohue, 2007](#)). Mitochondrial injury further amplifies reactive oxygen species, creating a self-reinforcing cycle of damage. Endoplasmic reticulum stress, abnormal autophagy, defective proteostasis, and altered cell death signaling contribute to hepatocyte injury and tissue remodeling ([Sovaila et al., 2019](#)). These pathways are not isolated; they converge on inflammatory transcription factors such as NF- κ B and downstream cytokines, especially TNF- α and IL-6.

Inflammation and immunity

A major advance in understanding alcohol-induced disease is the recognition that immune activation is central, not secondary, to pathogenesis ([Crews & Vetreno, 2015](#)). Alcohol increases intestinal permeability and allows bacterial products such as lipopolysaccharide to translocate into the portal circulation, where they activate Kupffer cells and other innate immune cells ([Szabó et al., 2011](#)). This stimulates cytokine release, neutrophil recruitment, and hepatic inflammation, which are especially important in progression from simple steatosis to steatohepatitis and fibrosis ([Lee et al., 2022](#)). The inflammatory environment also activates stellate cells and promotes extracellular matrix deposition, thereby driving fibrogenesis.

Systemic inflammation is not confined to the liver. Alcohol-induced immune dysregulation contributes to susceptibility to infection, impaired wound healing, and worsened outcomes in chronic disease ([Ahmed et al., 2023](#)). The intestinal immune system is increasingly recognized as an active participant in disease progression, with alcohol altering mucosal immune signaling and mucosal barrier function. This helps explain why microbiome-directed therapy has become such an active research area.

Gut microbiome and barrier dysfunction

The gut-liver axis is one of the most important biological bridges in alcohol-associated disease. Alcohol alters microbial composition, decreases beneficial taxa, and promotes dysbiosis that favors inflammatory signaling ([Xu et al., 2017](#)). Barrier breakdown allows microbial products to reach the liver, where they intensify innate immune activation and cytokine production. This mechanism is especially relevant in alcohol-associated liver disease, but it likely also contributes to systemic metabolic dysfunction and immune activation more broadly.

The microbiome may also influence treatment response. Emerging work suggests that microbiota composition may modify inflammatory tone, intestinal permeability, and metabolic signaling in ways that determine who progresses to more severe disease ([Arrese et al., 2021](#)). This creates a therapeutic rationale for probiotics, prebiotics, synbiotics, antibiotics in carefully selected cases, and fecal microbiota transplantation, although these approaches remain investigational or limited to specific settings ([Kim et al., 2017](#)). A microbiome-centered strategy is attractive because it addresses upstream drivers rather than only treating end-stage injury.

Liver disease spectrum

Alcohol-associated liver disease is the best characterized alcohol-induced organ disorder and remains the most common cause of advanced liver disease in many situations and alterations ([Alvarado-Tápias et al., 2024](#)). The pathological sequence begins with steatosis, progresses to alcoholic steatohepatitis, then fibrosis, cirrhosis, and in some patients alcohol-associated hepatitis with acute decompensation ([Mackowiak et al., 2024](#)). Steatosis can be reversible with abstinence, but repeated cycles of injury and repair increase the risk of progressive fibrosis. Once cirrhosis develops, portal hypertension, ascites, variceal bleeding, encephalopathy and hepatocellular carcinoma become major clinical threats.

Alcohol-associated hepatitis is now preferred terminology over alcoholic hepatitis and refers to a severe inflammatory syndrome with jaundice and high mortality ([Torre et al., 2024](#)). Recent summaries report 1-month mortality of 30% to 50% in severe cases, underscoring its seriousness ([Thakral et al., 2022](#)). Diagnosis is often clinical, with biopsy reserved for atypical cases, and prognostic scores such as MELD 3.0 and Lille help guide management ([Torre et al., 2024](#)). This syndrome exemplifies the intersection of direct ethanol toxicity, immune dysregulation, and acute organ failure.

Pancreatic and gastrointestinal injury

Alcohol is a major cause of both acute and chronic pancreatitis, mediated by acinar-cell injury, ductal dysfunction, oxidative stress, and sensitization to inflammatory triggers ([Szabó & Mandrekar, 2008](#)). Recurrent episodes can progress to chronic pancreatitis with pain, exocrine insufficiency, malabsorption, diabetes, and weight loss ([Steer et al., 1995](#)). Gastrointestinal injury also includes gastritis, esophagitis, peptic ulcer exacerbation, diarrhea, and impaired nutrient absorption, all of which worsen malnutrition in heavy drinkers. Nutritional deficiency is not a side issue; it directly worsens immunity, wound repair, neurologic outcomes, and liver prognosis ([Dasarathy, 2016](#)).

Cardiovascular disease

Alcohol-induced cardiomyopathy is typically characterized by left ventricular dilation and systolic dysfunction after prolonged heavy drinking ([Thomes, 2021](#)). Symptoms often include dyspnea, fatigue, edema, arrhythmias, and exercise intolerance, and the condition can be mistaken for idiopathic dilated cardiomyopathy unless alcohol history is carefully assessed ([Solà & Riba, 2017](#)). Mechanistic studies implicate oxidative stress, mitochondrial injury, impaired excitation-contraction coupling, and myocyte apoptosis ([Steiner & Lang, 2017](#)). Importantly, abstinence can improve function and prognosis, especially if intervention occurs before advanced remodeling.

Alcohol also contributes to hypertension, atrial fibrillation, stroke risk, and broader cardiometabolic dysfunction through sympathetic activation, endothelial injury, inflammation, and metabolic disturbance ([Gupta et al., 2025](#); [Linz et al., 2022](#)). These cardiovascular effects are clinically important because patients with liver disease often also carry a high burden of cardiac risk. Therefore, screening for alcohol-related cardiac injury should be routine in patients with heavy use or unexplained heart failure.

Neurologic and psychiatric disease

The neurobiology of alcohol use disorder involves changes in reward circuitry, stress systems, inhibitory control, and learning pathways that reinforce compulsive drinking and relapse. Chronic exposure alters GABAergic and glutamatergic signaling, which contributes to tolerance, craving, and withdrawal. Clinically, patients may show anxiety, depression, sleep disturbance, memory impairment, peripheral neuropathy, gait instability, or alcohol withdrawal syndromes ranging from tremor to seizures and delirium ([Lovinger & Roberto, 2010](#)).

This neuropsychiatric domain is not separate from the medical disease burden. Untreated alcohol use disorder worsens adherence, increases hospital readmission, and undermines treatment of liver, cardiac, and pancreatic disease ([Sinclair & O'Neill, 2019](#)). For that reason, addiction treatment should be considered a core disease-modifying intervention rather than an optional add-on. Psychosocial support and medication-assisted treatment improve the chance of sustained reduction or abstinence.

Cancer risk

Alcohol increases cancer risk through multiple, mutually reinforcing mechanisms. Acetaldehyde produces DNA adducts and interferes with DNA repair, while oxidative stress increases mutagenic injury and chronic inflammation supports tumor promotion ([Johnson et al., 2021](#)). Additional pathways include folate deficiency, altered estrogen metabolism, and changes in immune surveillance. Cancers most strongly linked to alcohol include oral cavity, pharynx, larynx, esophagus, liver, colorectal, and breast cancers.

The carcinogenic risk is clinically relevant because alcohol exposure is common and often persists for years before disease is detected. This means prevention is far more effective than late intervention. Counseling on reduction or cessation should therefore be framed not only as addiction care but also as cancer prevention.

Diagnosis and evaluation

Clinical evaluation should begin with detailed alcohol history, including quantity, frequency, binge pattern, duration, prior withdrawal, and prior treatment attempts. Many patients minimize intake, so validated screening tools and collateral history are valuable ([Knox et al., 2019](#)). Laboratory evaluation may include liver enzymes, bilirubin, albumin, INR, CBC, renal function, electrolytes, magnesium, phosphate, and nutritional markers, depending on presentation. Imaging and noninvasive fibrosis assessment are often used to stage liver disease, while echocardiography is essential when cardiomyopathy is suspected.

In severe or atypical liver disease, biopsy may still be needed, but current guidance increasingly favors clinical diagnosis when the presentation is typical. Prognostic scoring systems such as MELD 3.0 and Lille are important in alcohol-associated hepatitis. Because multisystem injury is common, evaluation should also include screening for depression, anxiety, neuropathy, and infection risk.

Current therapeutic standards

The most effective treatment across alcohol-induced diseases is cessation of alcohol exposure. In alcohol use disorder, the best-supported medications are oral naltrexone and acamprosate, which improve alcohol-consumption outcomes when used alongside psychosocial treatment ([Groves et al., 2020](#)). Recent guidance also notes that active alcohol use is not a contraindication to naltrexone, while acamprosate is best started after abstinence has begun and requires renal function screening. Extended-release naltrexone can be helpful when adherence is a concern.

For alcohol-associated liver disease, management includes withdrawal prevention, nutritional support, infection surveillance, portal hypertension management, encephalopathy treatment, and transplant evaluation when appropriate ([Thakral et al., 2022](#)). Alcohol-associated hepatitis may require careful prognostic assessment, and treatment decisions depend on disease severity and complications. In cardiac disease, guideline-directed heart failure therapy should be combined with alcohol cessation. Across all organ systems, integrated multidisciplinary care improves continuity and addresses the addiction driver of ongoing injury.

Emerging therapies

Research directions are increasingly aimed at upstream pathogenic drivers. These include anti-inflammatory therapies, blockade of cytokine and chemokine signaling, oxidative stress reduction, mitochondrial protection, restoration of NAD⁺ homeostasis, and interventions that improve gut barrier integrity or microbiome composition. In liver disease, investigational strategies also include regenerative medicine, stellate-cell-targeted approaches, and more precise immune modulation. While biologically attractive, these strategies are not yet replacements for abstinence and evidence-based AUD treatment.

A particularly promising direction is precision medicine. Because not all drinkers develop severe disease, future risk stratification may combine genetics, microbiome signatures, inflammatory biomarkers, and clinical phenotype to identify patients at highest risk of progression ([Bluemel et al., 2016](#)). Such stratification could improve preventive treatment and reduce unnecessary exposure to unproven therapies. This direction is especially relevant in alcohol-associated liver disease, where progression is variable but consequences can be profound.

Clinical implications

Alcohol-induced disease should be approached as a preventable, treatable, and often reversible condition if addressed early enough. The strongest intervention remains abstinence, but that goal is rarely achieved without structured treatment for alcohol use disorder and support for psychosocial barriers. Organ-specific therapies should be integrated into a broader care plan rather than given in isolation ([Asrani et al., 2020](#)). This is particularly important because liver disease, cardiomyopathy, pancreatitis, and cancer risk all improve most when exposure is reduced early.

References

1. Alvarado-Tapias, E., Pose, E., Gratacós-Ginès, J., Clemente-Sánchez, A., López-Pelayo, H., & Bataller, R. (2025). Alcohol-associated liver disease: Natural history, management and novel targeted therapies. *Clinical and molecular hepatology*, 31(Suppl), S112–S133. <https://doi.org/10.3350/cmh.2024.0709>.
2. Arrese, M., Arab, J. P., Barrera, F., Kaufmann, B., Valenti, L., & Feldstein, A. E. (2021). Insights into Nonalcoholic Fatty-Liver Disease Heterogeneity. *Seminars in liver disease*, 41(4), 421–434. <https://doi.org/10.1055/s-0041-1730927>.
3. Bertha, M., Choi, G., & Mellinger, J. (2021). Diagnosis and Treatment of Alcohol-Associated Liver Disease: A Patient-Friendly Summary of the 2019 AASLD Guidelines. *Clinical liver disease*, 17(6), 418–423. <https://doi.org/10.1002/cld.1129>.
4. Birková, A., Hubková, B., Čížmárová, B., & Bolerázka, B. (2021). Current View on the Mechanisms of Alcohol-Mediated Toxicity. *International Journal of Molecular Sciences*, 22(18), 9686. <https://doi.org/10.3390/ijms22189686>.
5. Bluemel, S., Williams, B., Knight, R., & Schnabl, B. (2016). Precision medicine in alcoholic and nonalcoholic fatty liver disease via modulating the gut microbiota. *American journal of physiology. Gastrointestinal and liver physiology*, 311(6), G1018–G1036. <https://doi.org/10.1152/ajpgi.00245.2016>.
6. Crews, F. T., & Vetreno, R. P. (2014). Neuroimmune basis of alcoholic brain damage. *International review of neurobiology*, 118, 315–357. <https://doi.org/10.1016/B978-0-12-801284-0.00010-5>.
7. Dasarathy, S., & Merli, M. (2016). Sarcopenia from mechanism to diagnosis and treatment in liver disease. *Journal of hepatology*, 65(6), 1232–1244. <https://doi.org/10.1016/j.jhep.2016.07.040>.
8. Donohue, T. M., Cederbaum, A. I., French, S. W., Barve, S., Gao, B., & Osna, N. A. (2007). Role of the Proteasome in Ethanol-Induced Liver Pathology. *Alcoholism Clinical and Experimental Research*, 31(9), 1446–1459. <https://doi.org/10.1111/j.1530-0277.2007.00454.x>.
9. Farhoudian, A., Razaghi, E., Hooshyari, Z., Noroozi, A., Pilevari, A., Mokri, A., Mohammadi, M. R., & Malekinejad, M. (2022). Barriers and Facilitators to Substance Use Disorder Treatment: An Overview of Systematic Reviews. *Substance abuse : research and treatment*, 16, 11782218221118462. <https://doi.org/10.1177/11782218221118462>.
10. Groves, P. J., Gao, Y. K., Kotiw, M., Wong, P. H. L., & Muir, W. I. (2025). Epidemiological risk factors and path models for Spotty Liver Disease in Australian cage-free flocks incorporating a scratch area. *Poultry science*, 104(5), 105016. <https://doi.org/10.1016/j.psj.2025.105016>.
11. Jones, K., Dye, E., Gilkes, N., Xia, D., Jiang, S., & Li, W. (2025). Mechanisms of DNA repair and mutagenesis induced by acetaldehyde, acrolein, aristolochic acids, and vinyl chloride. *Journal of environmental science and health. Part C, Toxicology and carcinogenesis*, 43(4), 295–332. <https://doi.org/10.1080/26896583.2025.2545086>.
12. Kim, D., Danpanichkul, P., Wijarnpreecha, K., Cholankeiril, G., Loomba, R., & Ahmed, A. (2025). Current burden of steatotic liver disease and fibrosis among adults in the

- United States, 2017-2023. *Clinical and molecular hepatology*, 31(2), 382–393. <https://doi.org/10.3350/cmh.2024.0987>.
13. Kim, G. A., Lee, H. C., Choe, J., Kim, M. J., Lee, M. J., Chang, H. S., Bae, I. Y., Kim, H. K., An, J., Shim, J. H., Kim, K. M., & Lim, Y. S. (2017). Association between non-alcoholic fatty liver disease and cancer incidence rate. *Journal of hepatology*, S0168-8278(17)32294-8. Advance online publication. <https://doi.org/10.1016/j.jhep.2017.09.012>.
 14. Kim, W. Ray²; Poterucha, John J.^{2,3}; Porayko, Michael K.²; Dickson, E. Rolland²; Steers, Jeffery L.⁴; Wiesner, Russell H.². RECURRENCE OF NONALCOHOLIC STEATOHEPATITIS FOLLOWING LIVER TRANSPLANTATION¹. *Transplantation* 62(12):p 1802-1805, December 27, 1996.
 15. Lee J, Kim Y, Han K, et al. Analysis of Severe Hypoglycemia Among Adults With Type 2 Diabetes and Nonalcoholic Fatty Liver Disease. *JAMA Netw Open*. 2022;5(2):e220262. doi:10.1001/jamanetworkopen.2022.0262.
 16. Mackowiak, B., Fu, Y., Maccioni, L., & Gao, B. (2024). Alcohol-associated liver disease. *The Journal of clinical investigation*, 134(3), e176345. <https://doi.org/10.1172/JCI176345>.
 17. Mandrekar, P., & Szabo, G. (2009). Signalling pathways in alcohol-induced liver inflammation. *Journal of hepatology*, 50(6), 1258–1266. <https://doi.org/10.1016/j.jhep.2009.03.007>.
 18. Osna, N. A., Donohue, T. M., Jr, & Kharbanda, K. K. (2017). Alcoholic Liver Disease: Pathogenesis and Current Management. *Alcohol research : current reviews*, 38(2), 147–161. <https://doi.org/10.35946/arcr.v38.2.01>.
 19. Sah, A. K., Afzal, M., Elshaikh, R. H., Abbas, A. M., Shalabi, M. G., Prabhakar, P. K., Babker, A. M. A., Khalimova, F. T., Sabrievna, V. A., & Choudhary, R. K. (2025). Innovative Strategies in the Diagnosis and Treatment of Liver Cirrhosis and Associated Syndromes. *Life (Basel, Switzerland)*, 15(5), 779. <https://doi.org/10.3390/life15050779>.
 20. Setshedi, Mashiko, Wands, Jack R., de la Monte, Suzanne M., Acetaldehyde Adducts in Alcoholic Liver Disease, *Oxidative Medicine and Cellular Longevity*, 3, 406524, 8 pages, 2010.
 21. Sinclair JMA, O'Neill A. Update on the management of alcohol use disorders. *BJPsych Advances*. 2020;26(2):82-91. doi:10.1192/bja.2019.61.
 22. Solà E, Kerbert AJ, Verspaget HW, Moreira R, Pose E, Ruiz P, Cela R, Morales-Ruiz M, López E, Graupera I, Solé C, Huelin P, Navarro AA, Ariza X, Jalan R, Fabrellas N, Bente D, de Prada G, Durand F, Jimenez W, van der Reijden JJ, Fernandez J, van Hoek B, Coenraad MJ, Ginès P. Plasma copeptin as biomarker of disease progression and prognosis in cirrhosis. *J Hepatol*. 2016 Nov;65(5):914-920. doi: 10.1016/j.jhep.2016.07.003. Epub 2016 Jul 12. PMID: 27422752.
 23. Steiner JL, Lang CH. Alcohol, Adipose Tissue and Lipid Dysregulation. *Biomolecules*. 2017 Feb 16;7(1):16. doi: 10.3390/biom7010016. PMID: 28212318; PMCID: PMC5372728.
 24. Stickel, F., Datz, C., Hampe, J., & Bataller, R. (2017). Pathophysiology and Management of Alcoholic Liver Disease: Update 2016. *Gut and liver*, 11(2), 173–188. <https://doi.org/10.5009/gnl16477>.

25. Szabo, G., Mandrekar, P., Petrasek, J., & Catalano, D. (2011). The unfolding web of innate immune dysregulation in alcoholic liver injury. *Alcoholism, clinical and experimental research*, 35(5), 782–786. <https://doi.org/10.1111/j.1530-0277.2010.01398.x>.
26. Thakral, N., Deutsch-Link, S., & Singal, A. K. (2023). Therapeutic Pipeline in Alcohol-Associated Liver Disease. *Seminars in liver disease*, 43(1), 60–76. <https://doi.org/10.1055/s-0042-1759614>.
27. Thomes, P. G., Rasineni, K., Saraswathi, V., Kharbanda, K. K., Clemens, D. L., Sweeney, S. A., Kubik, J. L., Donohue, T. M., Jr, & Casey, C. A. (2021). Natural Recovery by the Liver and Other Organs after Chronic Alcohol Use. *Alcohol research : current reviews*, 41(1), 05. <https://doi.org/10.35946/arcr.v41.1.05>.
28. Torre, E., Di Matteo, S., Martinotti, C., Bruno, G. M., Goglia, U., Testino, G., Rebora, A., Bottaro, L. C., & Colombo, G. L. (2024). Economic Impact of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) in Italy. Analysis and Perspectives. *ClinicoEconomics and outcomes research : CEOR*, 16, 773–784. <https://doi.org/10.2147/CEOR.S472446>.
29. Torre, E., Di Matteo, S., Martinotti, C., Bruno, G. M., Goglia, U., Testino, G., Rebora, A., Bottaro, L. C., & Colombo, G. L. (2024). Economic Impact of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) in Italy. Analysis and Perspectives. *ClinicoEconomics and outcomes research : CEOR*, 16, 773–784. <https://doi.org/10.2147/CEOR.S472446>.
30. Xu D, Xu M, Jeong S, Qian Y, Wu H, Xia Q and Kong X (2019) The Role of Nrf2 in Liver Disease: Novel Molecular Mechanisms and Therapeutic Approaches. *Front. Pharmacol.* 9:1428. doi: 10.3389/fphar.2018.01428.