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Tel: +94 26 2227317
Mail: editorijis@esn.ac.lk
Visit: www.tc.esn.ac.lk
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Message from the Vice Chancellor

Any University has a duty to hold conferences, workshops and symposia for the communication of their research and their counterparts in the country and beyond.

I am delighted to acknowledge the arduous task the Trincomalee Campus had engaged themselves to mobilize for this international conference amidst all their setbacks. I congratulate them. They had chosen the theme “emerging knowledge for sustainable regional development” which links the academic in terms of knowledge and the industry/people in terms of regional development. This blend is essential for the real development which could never be achieved in isolation.

I am also pleased that there are considerable number of papers from overseas which in itself a recognition. It is essential that this culture grows further into more significant outcome based targeted research and publications of corporate research.

I have seen a diversity of papers enlisted for the conference and am sure they would evoke a rich discussion at the end of each presentation.

Wishing the conference the best and the deliberations every success.

Professor. T. Jayasingam,
Vice Chancellor,
Eastern University, Sri Lanka
Message from the Editor

I am privileged to issue this message to the first International research conference (TRInCo 2016). I would like to extend first of all, my heartfelt appreciation to those who have agreed to join hands with us to conduct a grand successful event at Trincomlaee Campus, Eastern University, Sri Lanka.

The Conference provides an opportunity for transmission of knowledge based on research which is an essential component of academic programmes of all academic institutions.

The research conference will provide an opportunity for local and International scholars and practitioners to share their own ideas and practices of researches. The present University system encourages the academia to publish their findings on social and scientific issues; definitely this conference gives them space to publish their hypotheses.

This conference has another activity in addition to paper presentation, “A scientific dialogue on Environmental challenges for suitable regional development” which is introduced for the first time in the Eastern University, Sri Lanka. This event opens a path to fill the gaps between society and the academic institution. I am sure that the conference will give an informative and valuable experience while giving a chance for the presenter and participants to enjoy the natural features of Trincomalee city.

I am very well aware of the fact that organizing an international conference of this nature is a big challenge and our young academics accept that challenge and conduct research at the expected standard to the level of the world academic community.

I take this opportunity to thank the organizing committee for its excellent academic contribution and wish the researchers and participants success and sincerely hope that this will be an annual event of the Trincomalee Campus calendar in the years to come. I wish the conference grand success.

Dr. V. Kanagasingam,
Rector,
Trincomalee Campus,
Eastern University, Sri Lanka
# TABLE OF CONTENT

<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Selected Serum Biochemical Parameters of West African Dwarf Rams Administered with Aqueous African Marigold Plant (<em>Aspilia Africana</em>) Extract</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td>NseAbasi NsikakAbasi Etim</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The Agenda- Setting of Television Channels: 2015 Presidential Election Candidates in Prime Time News Bulletins</td>
<td>09</td>
</tr>
<tr>
<td></td>
<td>K.W.R.C.P. Kumara, S. Raguram</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Identifying the Learning Patterns of students Using Learning Management System Log</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>A. Suthakaran, E.Y.A. Charles</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A Descriptive Study on Perceived Psychological Stress among Middle Adolescents in Batticaloa Educational Zone</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Comparative study on poly herbal Siddha preparation of “Karunai kizhanku lekiyam” in house preparation and market sample</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>S. Janani, S. Kaluthotage</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Constructive alignment in Medical Education</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>T. Sathaananthan</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Impact of Organizational Learning on Organizational Innovation</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>M.S.F. Aqeela, L.D. Victor</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>A study on the influence of promotional mix and personal factors on urban consumers’ buying decision towards fast food special reference to Dehiwela Divisional Secretariat area</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>S. Thivyashani, F.B. Kennedy</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Relationship Between Fun Culture and Work - Life Balance Among Software Professionals in Chennai</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>B. Vimala, S. Mohankumar</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Emerging knowledge from Sri Lankan Tamil Fiction for Sustainable Regional Development: A Study on Selected Pieces</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>K. Shriganeshan</td>
<td></td>
</tr>
</tbody>
</table>
Selected Serum Biochemical Parameters of West African Dwarf Rams Administered with Aqueous African Marigold plant (*Aspilia Africana*) Extract

NseAbasi NsikakAbasi Etim

Department of Animal Science, Akwa Ibom State University, Obio Akpa Campus, Akwa Ibom State, Nigeria.

etimbobo@yahoo.com

**Abstract** — Selected serum biochemical parameters of West African Dwarf rams administered with aqueous *Aspilia africana* extract were examined in this study. Twenty four rams were used for the study. The experiment was in a Completely Randomized Design. The rams were randomly divided into four treatment groups with six rams per treatment and balanced for weight. Each treatment was replicated 3 times with 2 rams per replicate. Rams in treatment 1 ((T<sub>1</sub>; control)) received 10ml of distilled water, 1000mg/kg body weight, 2000mg/kg BW and 3000mg/kg BW of aqueous *Aspilia africana* extract were administered to rams in T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub> respectively. Rams in all the groups were fed 2kg of forages and 500g of the same concentrate diet daily. Blood samples were collected and analysed pre-, during and post-experiment. The results of the study revealed no significant differences (P>0.05) in the serum biochemical parameters of the rams among the various treatment groups pre-experiment, whereas significant differences (P<0.05) were observed during experiment and post-experiment. Dose dependent increases in values were observed for the rams administered with the extract (T2, T3, and T4), in which rams in T4 had the highest significant mean values for total protein (69.00g/dl), albumin (38.50g/dl), globulin (30.50g/dl), bicarbonate (26.00mmol/l), urea (5.95mmol/l) and calcium (27.5mg/dl), whereas T1 had the lowest mean values for all the parameters measured. The results obtained post-experiment followed a similar trend as those during experiment. This is an indication that *Aspilia africana* has the potential to improve the selected blood biochemical parameters in rams.

**Keywords** Serum, aqueous, ram, extract

I. INTRODUCTION

Blood analysis has become a rapid, non-lethal and inexpensive tool for the early detection of malnutrition, chronic pathology or stress conditions that do not lead to manifestation of clinical symptoms, but might negatively impact productivity (Peres et al., 2015). Serum biochemical analysis is a routine practice providing substantial diagnostic information regarding an animal’s physiological and health status. It is used to determine the level of heart attack, liver and kidney conditions as well as to evaluate the protein quality and amino acid requirements in animals (Etim, 2015). According to Jawasreh et al. (2009), serum biochemical parameters are usually affected by the level of nutrition and are closely associated with metabolic activities of individual animal.

Serum total protein values of 6.3 – 7.2, 6.3-8.5 and 5.0 – 12.3g/dl were documented by Bello and Tsado (2013) for Yankasa rams, Daramola et al. (2005) for WAD goats and Jawasreh et al. (2009) for Afec –Awassi sheep respectively. The values recorded above are within normal range. Highest increase in total protein in sera of experimental animals suggests that protein synthesis is efficient (Bello and Tsado, 2013). Furthermore, Bello and Tsado (2013) also
reported albumin values of 3.5 – 4.1 (g/dl) and stated that increase in body weight gain may be attributed to the increase in serum total proteins and globulin which indicated improvement in lambs health and immunity and a decrease in protein breakdown, since anabolism is defined as any state in which nitrogen is differentially retained in lean body mass, either by stimulation of protein synthesis and/or decrease breakdown of protein anywhere in the body (Gabr et al., 2009). Gundogan and Serteser (2005) reported that total protein from biochemical values of blood serum are positively correlated with albumin and globulin. Furthermore, Etim and Oguike (2011) observed significant increase in most biochemical values of rabbits fed Aspilia africana.

There is dearth of information on the serum biochemical parameters of West African Dwarf sheep administered with Aspilia africana, therefore, this study was conducted to investigate selected serum biochemical parameters of WAD rams administered with aqueous Aspilia africana.

II. MATERIALS AND METHODS

A. Location and Site of the Experiment

The research was conducted in the Teaching and Research Farm of the Department of Animal Science, Faculty of Agriculture, Akwa Ibom State University, Obio Akpa Campus, Akwa Ibom State, Nigeria. Obio Akpa is located between latitudes 5°17’N and 5°27’N and between longitudes 7°27’E and 7°58’E. It has an annual rainfall ranging from 3500mm – 5000mm and average monthly temperature of 25°C. Akwa Ibom State is a coastal State lying between latitudes 4°28’N and 5°3’N and between longitudes 7°27’E and 8°20’E, with a relative humidity between 60 – 90%. It is in the tropical rainforest zone of Nigeria.

B. Preparation and administration of extract

The leaves were sorted to remove contaminants, dead matter and sand particles. They were prepared fresh to prevent loss of bioactive ingredients which can take place during drying. The leaves were chopped into tiny pieces with chopping stick and sharp knife and ground using hand blender to produce Aspilia africana meal. 100g of the leaf meal was measured into a conical flask and extracted with 600ml distilled water for 48 hours at room temperature. The mixture was filtered into 250ml conical flasks and filtered with Whatman paper no. 1. The solution was filtered while the filtrate was concentrated to a semi-solid form using a rotary evaporator at 40°C to produce gel-like aqueous A. africana extract. This was weighed and the solutions prepared as 100mg/ml, 200mg/ml and 300mg/ml respectively.

C. Experimental Animals and Management

Twenty four (24) pubertal West African Dwarf rams of average weight of 4.65kg, aged 6 – 9 months from farm record and confirmed by the dentition, were sourced from four (4) Local Government Areas (Uyo, Abak, Oruk Anam and Etim Ekpo) of Akwa Ibom State and used for the study. The flock was managed intensively. The sheep were quarantined for two (2) weeks before the commencement of the experiment. Routine medications against endo and ectoparasites as well as suitable vaccination, together with fumigation were performed during the pre-experimental period. The animals were randomly assigned to 4 treatment groups, with one (1) ram per pen. The pens were constructed with concrete halved walls and iron doors in
the research farm that was well ventilated. The sheep were properly identified using plastic neck-tags.

During the period of the experiment, the animals were periodically washed (dipped) with Prectosol® against ticks and other ectoparasites. The health of the animals was properly monitored and adequate treatment was given to unhealthy animals. Routine inspection and regular cleaning were carried out.

D. Experimental Diet

The rams were fed 2kg of forages daily. The forages included: Panicum maximum (guinea grass), Pennisetum purpureum (elephant grass) and Cynodon nlemfuensis (star grass). Each animal also received 0.5kg (500g) of concentrate daily. Water was provided ad-libitum throughout the study. The quantity of forage and concentrate diet offered to the animals were weighed daily and the left-over feeds were weighed every morning using a sensitive electronic balance. Tables I and II show the composition of the concentrate diet given to the experimental animals.

E. Experimental Design

The experiment was in a Completely Randomized Design (CRD). The treatment consisted of administration of aqueous A. africana extract at 0mg/kg body weight (control), T1, 1000mg/kg weight (T2), 2000mg/kg body weight (T3), 3000mg/kg (T4). Six (6) rams were randomly assigned to each treatment and balanced for weights. Each treatment was replicated three (3) times with two (2) rams per replicate. The experimental model was as follows:

\[ Y_{ij} = \mu + T_i + E_{ij} \]

Where:

- \( Y_{ij} \) = Individual observation
- \( \mu \) = Overall mean
- \( T_i \) = Treatment effect
- \( E_{ij} \) = Random errors, which is assumed to be independently, identically and normally distributed with zero mean and constant variance (iind) (P=0.05).

**TABLE I: GROSS COMPOSITION OF CONCENTRATE DIET**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>40.01</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>4.31</td>
</tr>
<tr>
<td>Rice bran</td>
<td>41.30</td>
</tr>
<tr>
<td>Palm kernel cake</td>
<td>11.38</td>
</tr>
<tr>
<td>Bone meal</td>
<td>2.00</td>
</tr>
<tr>
<td>*Vitamin/mineral premixes</td>
<td>0.50</td>
</tr>
<tr>
<td>Salt</td>
<td>0.50</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>
Vitamin/mineral premixes (Growers) produced by Animal Care Product/Care Services Konsult (Nig) Ltd, Iperu Road-Ibadan Express way, Ogera Remo, Ogun State. *Vitamin Premix: Vit. A=8,000,000 I.U, Vit D3 = 1,700,000 I.U, Vit E = 5,000mg, Vit K3 = 150mg, Folic acid = 200mg, niacin = 15,000mg, Vit. B2 = 3,000mg, Vit. B12 = 5mg, Vit. B1 = 1000mg, Vit. B6 = 1000mg, biotin = 20mg. antioxidant = 125,000mg. Mineral Premix: Cobalt = 100mg, Selenium = 100mg, iodine = 100mg, Iron = 25,000mg, Manganese = 45,000mg, Copper = 3,000mg Zinc = 35, 000mg, Choline/chloride = 100,000mg.

TABLE II: PROXIMATE COMPOSITION OF FORMULATED CONCENTRATE DIET

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Percentages</th>
</tr>
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<tr>
<td>Drymatter</td>
<td>86.26</td>
</tr>
<tr>
<td>Crude protein</td>
<td>12.71</td>
</tr>
<tr>
<td>Ether Extract</td>
<td>7.59</td>
</tr>
<tr>
<td>Crude fibre</td>
<td>7.6</td>
</tr>
<tr>
<td>Ash</td>
<td>5.46</td>
</tr>
<tr>
<td>Nitrogen free extract</td>
<td>52.9</td>
</tr>
<tr>
<td>Metabolizable energy (Kcal/kg)</td>
<td>2529.57</td>
</tr>
</tbody>
</table>

F. Administration of Aqueous Extract to Experimental Animals

After two weeks of quarantine and acclimatization, and eight weeks which were used for collection of pre-experimental data, the aqueous extract of *A. africana* was administered once a day, orally for 64 days. Ten milliliters (10mls) syringes were used for the administration of the extract. The control group (T1) received 10mls of distilled water while treatments 2, 3 and 4 received 10mls of each of the following 100mg/kg, 200mg/kg and 300mg/kg body weight of aqueous extract of *Aspilia africana*, respectively.

G. Blood Collection and Determination of Blood Chemistry

At day 0 (i.e., after the two weeks quarantine and acclimatization), day 28 of the experiment (period of administration of extract) and day 65 of the experiment (a day after administration of the extract), 5ml of blood was collected by jugular venipuncture. The blood was allowed to coagulate to produce serum for blood chemistry measurements. The bottles of coagulated blood were subjected to the standard methods of serum separation and the harvested sera used for evaluation of Total Protein (TSP) which was measured by the Biuret method and total albumin concentration was determined by the method of Doumas *et al.* (1977); Gundogan and Serteser (2005). Total globulin concentration was calculated as the difference between blood serum total protein and blood serum albumin, and then average ratio was calculated (Gundogan and Serteser (2005). Calcium was estimated by means of atomic absorption spectrophotometer. Blood urea was determined by the di-methyl method as described by Varley *et al.* (1980).

H. Data Analysis

Data obtained were subjected to Analysis of Variance (ANOVA) (Steel and Torrie, 1986). Significant means were separated using Fisher’s Least Significant Difference (LSD) as described by Akindele (2004).
III. RESULTS AND DISCUSSION

A. Daily Feed Intake of West African Dwarf Rams before, during and after Administration of Aqueous Aspilia africana Extract

Table III presents the daily feed intake of WAD rams administered with aqueous A. africana extract. From the results in Table III, it could be observed that no significant differences (P<0.05) existed in the feed intake of the rams among the various treatment groups before, during and post-experiment.

**TABLE III: DAILY FEED INTAKE OF WAD ADMINISTERED WITH AQUEOUS Aspilia Africana EXTRACT** (g)

<table>
<thead>
<tr>
<th>Periods</th>
<th>T&lt;sub&gt;1&lt;/sub&gt;</th>
<th>T&lt;sub&gt;2&lt;/sub&gt;</th>
<th>T&lt;sub&gt;3&lt;/sub&gt;</th>
<th>T&lt;sub&gt;4&lt;/sub&gt;</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed intake pre-experiment</td>
<td>2466.63</td>
<td>2465.46</td>
<td>2464.96</td>
<td>2466.97</td>
<td>39.57</td>
</tr>
<tr>
<td>Feed intake during experiment</td>
<td>2469.98</td>
<td>2470.31</td>
<td>2469.15</td>
<td>2469.81</td>
<td>30.98</td>
</tr>
<tr>
<td>Feed intake post-Experiment</td>
<td>2471.65</td>
<td>2471.65</td>
<td>2471.98</td>
<td>2471.98</td>
<td>30.40</td>
</tr>
</tbody>
</table>

B. Serum Biochemical Parameters of West African Dwarf Rams before, during and after the Period of Administration of Aqueous Aspilia africana Extract

Table IV outlines the result for the serum biochemical parameters of WAD rams before, during and after the period of administration of aqueous A. africana extract.

**TABLE IV: Serum Biochemical parameters of WAD Rams before, during and after the Period of Administration of the Extract**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T&lt;sub&gt;1&lt;/sub&gt;</th>
<th>T&lt;sub&gt;2&lt;/sub&gt;</th>
<th>T&lt;sub&gt;3&lt;/sub&gt;</th>
<th>T&lt;sub&gt;4&lt;/sub&gt;</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP (g/dl)</td>
<td>6.00</td>
<td>59.50</td>
<td>61.50</td>
<td>58.97</td>
<td>6.59</td>
</tr>
<tr>
<td>Alb (g/dl)</td>
<td>33.50</td>
<td>33.50</td>
<td>34.00</td>
<td>32.50</td>
<td>4.49</td>
</tr>
<tr>
<td>Glob. (g/dl)</td>
<td>26.50</td>
<td>26.00</td>
<td>27.50</td>
<td>26.20</td>
<td>2.69</td>
</tr>
<tr>
<td>Bicarb. (mmol/l)</td>
<td>25.50&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24.50&lt;sup&gt;bc&lt;/sup&gt;</td>
<td>24.00&lt;sup&gt;c&lt;/sup&gt;</td>
<td>25.00&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>0.67</td>
</tr>
<tr>
<td>Urea (mmol/l)</td>
<td>5.15</td>
<td>5.15</td>
<td>5.30</td>
<td>4.90</td>
<td>0.51</td>
</tr>
<tr>
<td>Calcium (mg/dl)</td>
<td>2.40</td>
<td>2.60</td>
<td>2.45</td>
<td>2.60</td>
<td>0.31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameters</th>
<th>T&lt;sub&gt;1&lt;/sub&gt;</th>
<th>T&lt;sub&gt;2&lt;/sub&gt;</th>
<th>T&lt;sub&gt;3&lt;/sub&gt;</th>
<th>T&lt;sub&gt;4&lt;/sub&gt;</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP (g/dl)</td>
<td>60.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>63.00&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>65.00&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>66.00&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.70</td>
</tr>
<tr>
<td>Alb (g/dl)</td>
<td>33.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>36.00&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>37.50&lt;sup&gt;a&lt;/sup&gt;</td>
<td>38.50&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.00</td>
</tr>
<tr>
<td>Glob. (g/dl)</td>
<td>27.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>27.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>27.50&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>30.50&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.20</td>
</tr>
<tr>
<td>Bicarb. (mmol/l)</td>
<td>25.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>25.00&lt;sup&gt;b&lt;/sup&gt;</td>
<td>25.50&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>26.00&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.96</td>
</tr>
</tbody>
</table>
The result for serum biochemistry showed that there were no significant differences (P>0.05) in all the parameters before the period of administration of extract except bicarbonate. Values obtained for total protein (g/dl) ranged from 58.97 (T4) to 60.00 (T1), Albumin (g/dl) 32.50 (T4) to 33.50 (T1 and T2), globulin (g/dl) 26.20 (T4) to 27.50 (T3); calcium: 2.40 (T1) to 2.60 (T2) and T4). Significant difference (P<0.05) was observed among the various treatment groups for bicarbonate values. Such differences were impossible to control, prevent and account for at the beginning of the experiment. Values obtained for all the parameters fell within the normal physiological ranges reported by Jawasreh et al. (2009) and Merck Manual (2013).

During the period of administration of the experimental extract, significant differences (P<0.05) were observed in most of the parameters measured among the different treatment groups. Considerable increase in a dose dependent manner was observed in values recorded for the treated groups (T2, T3 and T4) compared to the control group (T1) resulting in significant increase in values obtained for these group of animals. All values obtained were within the normal physiological range of values reported by Gundogun and Serteser (2005), Kramer (2000), Bani Ismail (2008), Jawasreh et al. (2009), Abdelhamed et al. (2009) and Merck Manual (2013), Bello Tsado (2013) for sheep. The high mean values observed in the treated groups compared to the control group may be as a result of the extract administered to rams in these groups which might have caused significant increase in serum total proteins, albumin and globulin which indicated improvement in the rams health and immunity as was opined by Bello and Tsado (2013). The result obtained also implies that there was no alteration in protein metabolism of the animals, since protein synthesis is related to the amount of available protein (Iyayi and Tewe, 1998) in the diet. The high concentration of serum protein in the treated rams is not only an indication of high quality protein but a reflection of protein reserve in the treated animals (Anyaehie and Madubuike, 2007). This findings agrees with the report by Fasae et al. (2005) that increase in total blood protein reflects the ability of the animal to store reserve protein when the animal has reached the maximum capacity of less liable protein intake. It is also in line with the report by Anyaehie and Okorie (2008) that increase levels of serum urea, albumin and protein concentrations with increasing levels of treatment is an indication that the treatment
contains high quality protein. Results obtained for urea in the groups administered with different
doses of the extract signify that there was amino acid balance in the extract. Furthermore, the
normal range of values for bicarbonate implies that there was no alteration in the blood pH of
the tested animals as a result of the treatment (Etim and Oguike, 2011). Higher values observed
in the treated groups is indicative of better buffering ability of the experimental extract. High
significant mean values for calcium in the groups administered with the ex-

After the period of administration of the experimental extract to the animals, significant
differences were still observed in all parameters measured. The control group had lower values
in all the parameters compared to T₂, T₃ and T₄ which values increased with increase in the dose
of the extract. The test extract may be implicated in the observed result suggesting that it has
high biochemical properties.

IV. CONCLUSION

As evident in the results of the experiment, Aspilia africana has the potential to improve serum
total protein, albumin, globulin, bicarbonate, urea and calcium of sheep administered with it.
Thus, Aspilia africana is recommended for feeding of sheep.

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The Agenda- Setting of Television Channels: 2015 Presidential Election Candidates in Prime Time News Bulletins

Kumara, K.W.R.C.P. *1, Raguram S*2

*Department of Languages and Communication Studies, Trincomalee Campus, Eastern University, Sri Lanka, Trincomalee, Sri Lanka

*Media Studies, Faculty of Arts, University of Jaffna, Jaffna

1chandanapradeep49@gmail.com
2ragunadu2003@yahoo.com

Abstract - The media in Sri Lanka can be broadly placed into two categories- those which are owned and controlled by the State and those which are privately owned and controlled. Many analyses have found that the news media have been unbalanced, especially television channels at the election time, all over the world. However, it seems that the media in Sri Lanka have been used for political promotions. State Media channels directly support the government party candidates. Even though people are expecting balanced news coverage from the media, it is difficult to see that kind of situation in Sri Lankan Society. A scientific research had been needed to study this problem.

There are exiguous researches, has occurred via Sri Lankan media to reveal about Agenda Setting in Prime time News bulletins on political campaigns and its balancing, in the role of politics especially during the time of election. It is apparently few of researches have been conducted about the political background of Sri Lanka. Specially there are no researches conducted for Agenda Setting in Prime Time News Bulletins on Political campaign in Sri Lankan media specially related to the 2015 presidential election. Therefore, this has been a significant study for this research.

This research study carried out primarily based on the content analysis. The main purpose of this study to investigate the Agenda- Setting of Television Channels: 2015 Presidential Election Candidates in Prime Time News Bulletins. In addition to that to find out the content of political campaigns covered by the prime time news bulletins, whether the television channels covered the political campaigns in a balanced way or not and whether the state media and private media have been biased in supporting or opposing a specific candidate. The study has found out that television channels have been unbalanced, while they covered the political campaigns. Not only that the state media have been biased in supporting to the government candidates than private media in Presidential Election 2015.

Keywords Agenda Setting, Prime Time, Presidential Election, News Bulletin, Television Channels
I. INTRODUCTION

The term communication has resulted from the Latin word “communis” with the meaning of “to share”. Hence, communication is based on expressing information through the exchange of messages, information, and thoughts, as by signals, visuals, writing or behavior. The history of communication dates back to ancient times, that is, Speech was developed some 200,000 years ago, which transformed the human communication and symbols were developed about 30,000 years ago whereas writing about 7,000. Communication is a natural process that communicates messages to the outside world routinely. Without communication, the lives of human beings would be very challengeable by means of communication is critical aspect of growing and maintaining everything around the people.

There is an enormous relationship between communication and the human society. Throughout this long partnership, they have attained a huge growth. It is impossible to have such kind of growth and development without being communicated. In this society, all relationships and social connections rely on the communication. Humans understood the importance of communication after their arrival on earth and developed different communication methods and processes. The development of these processes gave a great enhancement to the development of human society. This is a continuing process as people always want to develop new communication methods and processes. Therefore, it automatically develops the human society.

Communication is the opening of the world. It is a substantial part of giving rise to social changes. During these few decades, the revolution of communication media has supported to hasten the pace of social change. Not only media of Radio, television, newspapers and other mass media have made the world ‘shrunk’ but also have revolutionized the values, attitudes, interests and social milieu. The media are a substantial instrument for expressing the messages to the society. Among the variety of extended media, the news channels are representative of social issues which helps to determine the real world circumstances. Rather, it plays the vital role with the aids of focusing on the social issues in almost every era. Sometimes it gives free and fair chances to explore the issues of society more openly. Therefore, it couldn't be deprived of issues always raised in order to provide justice to the people. Because of this inherent ability of television channels to reach a large number of public, it is widely used to convey messages with the purpose of building ideas and awareness.

According to the tendency of the audience, there are more television channels are on-air. Those are used a special time duration called prime time; the part of daily broadcast time during which the number of viewers is the highest. It is the peak watching period, which supports of audience to achieve their minds according to the prepared agenda. In here, the agenda setting means the ability to influence the salience of topics on the public agenda of the channel. The news editors prepare the bulletins; they are suggested to order the news on the basis of importance. The agenda covers areas of how the audience will be treated particular news, which is to be on air, after formulate the format of news; any media tries to order their agenda by giving attention to the special programs in prime time.

**Problem Statement**

The media in Sri Lanka can be broadly placed into two categories- those which are owned and controlled by the State and those which are privately owned and controlled. Many analyses have found that the news media have been unbalanced, especially television channels at the election time, all over the world. However, it seems that the media in Sri Lanka have been used for
political promotions. State Media channels directly support the government party candidates. Even though people are expecting balanced news coverage from the media, it is difficult to see that kind of situation in Sri Lankan Society. Most Editors and media directors failed to lead their teams in a professional manner that would have ensured balanced news reporting of the election. A scientific research needed to study this problem. This study covers that shortage.

**Research Questions**

1. How the content of political campaigns covered by the prime time news bulletins in Sri Lankan Television Channels?
2. Have the television channels covered the political campaigns in a balanced way?
3. Do the state media and private media have been biased in supporting or opposing a specific candidate?

**Objectives**

**General Objective**

1. To investigate the Agenda- Setting of Television Channels during 2015 Presidential Election Candidates in Prime Time News Bulletins.

**Specific Objectives**

1. To find out the content of political campaigns covered by the prime time news bulletins.
2. To find out whether the television channels covered the political campaigns in a balanced way or not.
3. To find out whether the state media and private media have been biased in supporting or opposing a specific candidate.

**Hypothesis**

Television channels have been unbalanced, while they covered the political campaigns. The state media have been biased in supporting to the government candidates than private media in Sri Lankan Presidential Election 2015.

**Significance of the Study**

Media is an important tool for the existence of communication. When a country is heading to its development, the responsibility assigned to the media is not trumpery. In a multi ethnic and developing country like Sri Lanka, the responsibility assigned to the media is critical. Especially with electronic media play a vital role here. People wish to have a balanced and fair media responsibility for them.

There were two main candidates Mr. Mahinda Rajapaksa and ‘Common Opposition candidate’ Mr. Maithripala Sirisena. The election was called by Mr. Rajapaksa two years before it was due because of a slide in his popularity as judged from the recent Provincial Council Elections. It is important to know that he had two more years as President when he called the election. The importance is that he has claimed, with some strange reasoning, that even if he loses, he will continue as President for two more years if he wins, the two years will be added to the six year term by making it eight years. With the Opposition in disorder and unable to find a credible
candidate, Mr. Rajapaksa was so sure of victory that he even said that he would be the only candidate. He failed to see that the possible candidate was Mr. Maithripala Sirisena, his own Health Minister and General Secretary of the Sri Lanka Freedom Party – SLFP).

With no alarm, on 21 November 2014, Mr. Sirisena said that he would be the “Common Opposition Candidate” to contest Mr. Rajapaksa. He blasted the Mr. Rajapaksa regime: Holding the President responsible, he said, “thuggery, embezzlement, crime, drug mafia, nepotism and corruption have institutionalized under the Executive Presidency, but alas President Mr. Rajapaksa or his government has done little to arrest this horrible an The election is more than an attempt at a regime change. It was an attempt to dismantle the Rajapaksa Family autocracy and replace it with something that is more acceptable. It is, by far, one of the most important elections in recent times in Sri Lanka which could have far reaching consequences for the country. Being a contest between two Sinhalese politicians to elect what in effect is a Sinhalese President, there has been some speculation whether this is of any consequence to the Tamil people in the North and East – the suggestion being that they should boycott the election as they did in 2005. However, many Tamils in the North and East wanted to vote. The question was whether they will be able to do so in an area which is an Army-run military state.

There are exiguous researches, has occurred via Sri Lankan media to reveal about Agenda Setting in Prime time News bulletins on political campaigns and its balancing, in the role of politics especially during the time of election. It is apparently few of researches have been conducted about the political background of Sri Lanka. Specially there are no researches conducted for Agenda Setting in Prime Time News Bulletins on Political campaign in Sri Lankan media specially related to the 2015 presidential election. Therefore, this has been a significant study.

**Theoretical Framework (Agenda Setting in Media)**

The development of the theoretical framework helps to clarify implicit theory in a manner that is more clearly defined. It helps to consider other possible frameworks and to reduce biases that may sway the interpretation. As develop the theoretical framework researchers will consider alternative theories that might challenge their perspective. They will also consider the limitations associated with their theory, and quite possibly, that their problem could be better understood by other theoretical frameworks.

The theoretical framework is how the researcher conceptualizes the nature of his research problem, its basis and the analysis he will choose to investigate that problem. This framework determines how he perceives, make sense of, and interpret his data. Explanation of the theoretical framework helps the reader understand his perspective and context.

The agenda setting approach was the overall theoretical framework for this study. This theory traced back to Walter Lippmann (1922) who suggested that the media were responsible for the “pictures in our heads”. Agenda-setting theory describes the "ability (of the news media) to influence the salience of topics on the public agenda” That is, if a news item is covered frequently and prominently the audience will regard the issue as more important.

The theory, also known as the Agenda Setting Function of the Mass Media, suggested that the media sets the public agenda by telling you what to think about, although not exactly what to think. The abstract in their first article about this theory states:
“In choosing and displaying news, editors, newsroom staff, and broadcasters play an important part in shaping political reality. Readers learn not only about a given issue, but also how much importance to attach to that issue from the amount of information in a news story and its position. In reflecting what candidates are saying during a campaign, the mass media may well determine the important issues that is, the media may set the “agenda” of the campaign (McCombs, 2003).

II. LITERATURE REVIEW

The research draws on an attempt to address the issue of “The agenda setting of television channels: 2015 presidential election candidates in prime time news bulletins”. The research content is comparatively analyzed by using two television channels; state owned television channels and private owned television channels. In the last few decades, great effort has been devoted to providing ample support for the assertion of related studies to this study.

It showed that the agenda setting influence of the news media on the public usually have focused on public issues. The result obtains by McCombs in the original study of the agenda setting, the influence of the news media was conducted in Chapel Hill, has found similar evidence of strong agenda setting effects public issues. As he claimed there, for the all agendas, the objects are public issues, but they could be other topics, such as the agenda of political candidates during an election, and images held by the public by political candidates are the most obvious examples of attribute agenda setting by news media. And the data yielded by this research provide strong evidences that the appearance of agenda-setting effects require the existence of reasonably free and open media and political system.

“News coverage and treatment in prime time bulletins”, is the most interesting approach to the issue, which was focused on mutual interests and the relationship with ruling political party in prime time news bulletin in selected two television channels with the hypothesis of TV news is not free from political biases. They have firstly revealed that the Bangladesh TV channels emphasize on covering news related to political parties and the government much more than others, some are connected with the two most dominant political parties (Rahman 2009) and some channels never send camera to cover political activities of main opposition party. As indicated in a related study, they have chosen on state-owned TV channel (BTV) and private channel (ATN Bangla) in the country (Bangladesh). It is suggested that the researcher has been tactful to indicate the balanced method of agenda setting by using channels patronized by the state and private. To carry on this study further, researcher focuses on the particular prime time of those news channels.

This study is concerned with the method of propaganda and it is the main theoretical premise behind of this. According to the propaganda model, state-owned TV channel (BTV) controlled by the ruling party and private channel (ATN Bangla) is also disciplined by the government because the channels maintain the liaison with government. So there are overwhelming evidences corroborating the notion that TV channels work on the political biases in their agenda setting on their prime time news bulletins.

There are some certain researches existent, which is related to election campaigns and agenda setting of media, throughout the world. But it is explicit fact that, in Sri Lankan context, there are some exiguous researches appear on the particular area. Especially there are no more researches conducted in the agenda setting of television channels in prime time news bulletins in relation with political campaigns in a Presidential Election.
III. METHODOLOGY

The particular research was conducted with the title of “The Agenda- Setting of Television Channels: 2015 Presidential Election Candidates in Prime Time News Bulletins. In order to carry out the objectives of the research, qualitative and quantitative methodology were employed. Primary data were collected through content analysis with the help of a coding system. In order to apply the data from related and reliable sources, this particular study has used the secondary data gathered from journal articles, books, magazines, research papers, reports, newspapers and web sources and have been applied to the content of the research.

Sample Design

The researcher has been used purposive sampling method for this research. There are 14 news bulletins have been selected and used for the content analysis, which were telecasted before one week from the Presidential Election 2015 (01st of January – 07th of January), from two different kinds of television channels that are related to the State Media (Independence Television Network) and Private Media (Derana Television) in Sri Lanka as the samples of this research.

IV. DATA ANALYSIS

Primarily, data gathered through content analysis analyzed and subsequently, comparison and contraction performed. Frequency counting used to find the prominence of reporting on political issues in television channels. And the time duration of the news bulletins measured to see how much time duration allocated. The nature of the news story, the length and the placement of the news analyzed in order to fulfill the objectives of the research.

In media content analysis, a priori design is operationalized in a Coding System. A key component of a Coding System is a comprehensive written Code Book or Coding List. This contains the list of variables (units of analysis) to be researched and provides researchers involved in the project with a consistent framework for conducting the research.

The constant comparative method used to develop concepts from the data by coding and analyzing at the same time. The constant comparative method “combines systematic data collection, coding, and analysis with theoretical sampling in order to generate theory that is integrated, close to the data, and expressed in a form clear enough for further testing” (Conrad, Haworth, Neumann, & Scott, 1993).

Finally, the findings presented in tables and graphs and deepened analysis with statistics. Therefore, data analyzed both qualitatively and quantitatively.

V. RESULTS & CONCLUSION

Through this study, the researcher has found that, before one week of time period for Presidential Election ITN channel has allocated more time in the news content for the campaigns of Mr. Mahinda Rajapaksa, the ruling party candidate apart from other candidates especially general candidate Mr. Maithripala Sirisena. Moreover, when ITN sets the agenda in prime time news bulletins, they have given more concentrate on ruling party’s campaigns, for instance, their policies, plans and development, defamation and making sympathy.

Especially ITN have allocated time for defamation about an opposition party candidate in primetime news bulletins. As well as, the researcher has found that, when ITN placing the news
in agenda of news bulletins, the first priority has given to the campaigns of Mr. Mahinda Rajapaksa, the ruling party candidate. In placement of news, the most initial places are given to telecast the news content of ruling party candidate without allocating space for an opposition party. Conversely, when Derana television channel set the agenda in the prime time news bulletin, they have allocated time for news contents of both candidates in the Presidential Election. Even though it seems instability in allocating time, comparatively it has given time for both candidates rather than ITN channel. Furthermore, the researcher has obtained the fact that, when the placement of news on Derana channel, they have given somewhat equal space for each candidate in the agenda of prime time news bulletins.

Not only that, the researcher has obtained a perception that, whether the television channels covered the political campaigns in a balanced way or not, in here, ITN has allocated more time for the news contents of ruling party’s campaign rather than the opposition party candidate. The important implication of these findings is that, as the state owned channel, ITN has used unbalanced way in covering news of the opposition party. On the contrary, the Derana television channel has given the time for news content in campaigns of both parties with somewhat balanced way relatively ITN channel.

From the outcome of data analysis, the researcher was able to find whether state media and private media display biasness in supporting or opposing a specific candidate in Presidential Election 2015. In here, the finding has enough to assert that, ITN has exhibited biasness by allocating more time for the news contents in campaigns of ruling party candidate. As well as, within the time allocated to ruling party campaigns, more time has spent to promote defamation against an opposition party candidate. In contrast, Derana television channel has exposed a balanced way without biases for one party. It has been demonstrated that, though ITN has shown a great biasness on ruling party, Derana channel has followed a somewhat unbiased way. In the contemporary society, the media play a significant role as a link. A society is expected that, the media would be performed in their social responsibility in a balanced way especially in the period of election. In here, as the media, television channels have a duty of expressing the reality without being biased for one party. Through this study, the researcher has found that television channels have been unbalanced, while they covered the political campaigns and state media have been biased in supporting to the government candidates than private media. Finally, it is quite convincing to assert that the hypothesis have been proofed in this study.

The media in Sri Lanka can be broadly placed into two categories- those which are owned and controlled by the State and those which are privately owned and controlled. Many analyses have found that the news media have been unbalanced, especially television channels at the election time, all over the world. However, it seems that the media in Sri Lanka have been used for political promotions. State Media channels directly support the government party candidates. Even though people are expecting balanced news coverage from the media, it is difficult to see that kind of situation in Sri Lankan Society. Most Editors and media directors failed to lead their teams in a professional manner that would have ensured balanced news reporting of the election.

In order to cover the shortage of studying this particular issue the researcher selected two television channels, which are owned by the government and owned and controlled by private section. At the same time the researcher selected the presidential election 2015 as the area for study. Here the researcher paid more attention toward main two candidates those who were gaining more publicity rather than other candidates. The basic purpose of this study was to
investigate the Agenda- Setting of Television Channels during 2015 Presidential Election Campaigns in Prime Time News Bulletins. Not only that, to find out the content of political campaigns covered by the prime time news bulletins, whether the television channels covered the political campaigns in a balanced way or not and to find out whether the state media and private media have been biased in supporting or opposing a specific candidate, this study had been carried out.

Through this study, the researcher has found that, before one week of time period for Presidential Election 2015 ITN channel has allocated more time in the news content for the campaigns of Mr. Mahinda Rajapaksa, the ruling party candidate apart from other candidates, especially common candidate Mr. Maithripala Sirisena. Especially ITN have allocated time for defamation about an opposition party candidate in primetime news bulletins. As well as, the researcher has found that, when ITN placing the news in agenda of news bulletins, the first priority has given to the campaigns of Mr. Mahinda Rajapaksa, the ruling party candidate. In placement of news, the most initial places are given to telecast the news content of ruling party candidate without allocating space for an opposition party.

Conversely, when Derana television channel set the agenda in the prime time news bulletin, they have allocated time for news contents of both candidates in the Presidential Election. Even though it seems instability in allocating time, comparatively it has given time for both candidates rather than ITN channel. Furthermore, the researcher has obtained the fact that, when the placement of news on Derana channel, they have given somewhat equal space for each candidate in the agenda of prime time news bulletins. Through this study, the researcher has found that television channels have been unbalanced, while they covered the political campaigns and state media have been biased in supporting to the government candidates than private media.

VI. RECOMMENDATIONS FOR THE FUTURE RESEARCHERS

- Those who are interested in this particular field of research can apply number of television channels, in order to conduct a research rather than having a limitation for two channels.
- Instead of selecting news bulletins broadcasted in prime time, can look for other all news bulletins.
- Consider of recipient analysis.
- Think of a comparative study with the other elections.

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Identifying the Learning Patterns of students Using Learning Management System Log

A.Suthakaran*1, E.Y.A.Charles*2

*Department of computer Science, University of Jaffna, Sri Lanka
1suthakaranniro@gmail.com
2charles.ey@univ.jfn.ac.lk

Abstract— The use of technology for teaching and learning in education has grown exponentially in the past decade, particularly the use of Learning Management Systems (LMS). LMSs are web-based systems which provide an excellent e-learning platform for interaction between the participants of a course. For auditing purposes, a typical LMS records each and every activity of the users in the form of a log. A teacher can track the progress of his class by analyzing the scores obtained for the assignments and quizzes by the students as in regular classes. In addition to the scores, the activity log of an LMS contains valuable information which can help the teacher to identify the learning behaviors of his class. But the log file contains entries for each and every activity and cannot be used directly for analysis. This research work attempted to identify methods to convert a log file into usable data and on identifying the learning patterns of the students using data mining methods on a log file. The frequency of access to a particular material or activity on a weekly basis rather than as a complete summary was used to convert the log entries into a usable data. When k-means clustering was applied, the transformed data was clustered into nine groups and these groups shown an approximate correlation between the final grades obtained by the students. It is expected that the correlation between the group’s identified using the log entries and the final grade can be further strengthened if the participation of the students was more active. More research is needed to understand the behaviors of the identified groups.

Keywords Learning management system, Learning patterns, Datamining

I. INTRODUCTION

Learning Management Systems (LMS) are now an important tool in educational and training institutions worldwide. LMS provides an excellent e-learning platform allowing instructors and/or students many facilities such as share learning materials, submit assignments, mark assignments, provide feedback, conduct on-line exams, and interact online or offline. In addition, LMSs have tools for producing reports of the student activities. These reports mainly consists of descriptive statistical details such as total or average usage or access. A teacher can also track the progress of individuals by analyzing the scores obtained for the assignments and quizzes by the students as in regular classes. These are not much helpful for the teacher to identify the learning patterns of the students. They are useful only for administrative purposes of each platform. Moreover, the existing e-learning platforms do not offer concrete tools for the assessment of user actions and access to the shared educational materials.

One important aspect of an LMS is, for auditing purposes it records each and every activity of the users in the form of a log. Similar as in other places where logs are maintained, a single log entry might not have much information if considered alone. Hence the log entries are needed to be transformed into a form in which standard data mining and machine learning techniques can be applied [1]. A number of previous work on analyzing LMS courses and students’ activity
can be found in the literature. Valsamidis et al. have used a Markov Clustering (MCL) algorithm for clustering the students’ activity and a Simple k-means algorithm for clustering the courses [2]. That work tried to cluster the students based on their activities on multiple course units. This research work attempted to identify methods to convert a log file into usable data. Using data mining methods, this research work further attempted to identify group of students with similar learning patterns and to find out are there any correlations between these groups with the results they have obtained at the final exam for the selected course unit.

II. METHODOLOGY

A. Selection of log entries:

For this research work, the log entries for a computer science course unit (Database Management Systems) followed by 64 second year students at University of Jaffna was selected. The course unit was taught as a regular course unit but a Moodle LMS was utilized to share the learning material and provided a platform for conducting quizzes, submit assignments and feedbacks and collaborative activities such as blogs and dictionaries. Moodle records each and every activity of the students when they accessed these resources. A total of 27228 log entries were collected and analyzed in this study. The attributes on a log record is given in Table 1.

<table>
<thead>
<tr>
<th>Log entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>Information about all students</td>
</tr>
<tr>
<td>Time</td>
<td>Information about the access time by the students.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Information about the devices that used by the students to access the LMS.</td>
</tr>
<tr>
<td>Action</td>
<td>Information about the student’s activities through the LMS.</td>
</tr>
<tr>
<td>Url</td>
<td>Information about the reference links.</td>
</tr>
</tbody>
</table>

B. Transform the log file into a usable form:

Transform the log entries into a usable data such that standard data mining algorithms can be applied. For this purpose the data converted into summarized form over a specific period. The log entries were summarised and converted into a dataset which provided the frequency description of the student’s interaction with the system. The activities and the descriptions considered in the analysis are listed in Table 2:
Table 2: Contents and description of the data set constructed from the log entries

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course View</td>
<td>Number of time logged in to a Course</td>
</tr>
<tr>
<td>Resource view</td>
<td>Number of time a course material was viewed</td>
</tr>
<tr>
<td>Quiz view</td>
<td>Number of times quiz contents were viewed</td>
</tr>
<tr>
<td>Assignment submit</td>
<td>Number of assignments submitted</td>
</tr>
<tr>
<td>Quiz review</td>
<td>View the assignment contents</td>
</tr>
<tr>
<td>Quiz attempts</td>
<td>Number of attempts in a particular quiz</td>
</tr>
<tr>
<td>Url View</td>
<td>View the references</td>
</tr>
<tr>
<td>Quiz continue attempts</td>
<td>Number of attempts for a quiz contents</td>
</tr>
<tr>
<td>Forum</td>
<td>Number of times participated in a forum discussions</td>
</tr>
</tbody>
</table>

The summarization can be done over the entire period of the course or on a monthly, weekly or daily basis. Summarising over period of one week is an appropriate selection since the academic activities are organised on a weekly basis and this gives a good sampling of behaviour of students. Notable observations are that some students’ participation were low or even nil. In the selected sample, seven students had no log entries to show their interaction. The data set was converted into ARFF format such that it can be used for analysis using WEKA.

C. Application of the data mining techniques:

Data mining is the process of efficient discovery of non-obvious valuable patterns from a large collection of data. In order to further explore the effectiveness of the data transformation strategy and to uncover patterns in the user’s activity, an optimum cluster analysis was performed and the data was clustered using k-means clustering method. From the clusters obtained and the final results obtained by the students a decision tree was constructed.

III. RESULTS AND ANALYSIS

Choosing the optimum number of clusters

There are a number of cluster evaluation criterions available to identify the optimum number of clusters from a given data set. “Gap criterion”, “Calinski Harabasz”, “silhouette” and “Davies Bouldin” are some criterions available in Matlab for cluster evaluation[6]. In this study “Gap criterion” was selected to find the optimum number of clusters [5]. The idea behind this approach was to find a way to standardize the comparison of the measure of the compactness of identified clusters (Wk) with a null reference distribution of the data, i.e. a distribution with no obvious clustering. Here the estimate for the optimal number of clusters K is the value for which log(Wk) falls the farthest below the reference curve. This information is contained in the following formula for the gap statistic:

\[ \text{Gap}(k) = E \times n \times (\log W_k) - \log W_k \]

Here the variance quantity Wk is the basis of a naive procedure to determine the optimal number of clusters [7]. The result obtained for the Gap evaluation is shown in Fig1. The “sqEuclidean" distance measure was used in the Gap analysis to obtain the result and the results are shown in Fig2. From these results the optimum number of clusters were identified as 09 for the data.
Following the cluster analysis, the summarized data was clustered into nine groups using K-Means algorithm with the machine learning tool, Weka. For this purpose the data was transformed into an ARFF file format.

**Figure 1:** Results obtained for Gap evaluation

**Figure 2:** Gap analysis
Weka has provided the information about the cluster centroids (mean/mode and standard deviation of each attribute) of each cluster, and the number and percentage of instances in each cluster. Here each cluster represents a group of student who have similar learning patterns.

The clusters obtained through k-means was analysed with the final results obtained by students to identify any correlation between the group and the results obtained by the students. The results are shown in Fig 3. Eventhough a correlation can be identified the accuracy found to be low.
Weka Machine learning tool has several classification algorithms. Among them the J48 algorithm was used in order to identify the relations between the learning behaviours and the final results. Characterize students who obtained the grades in the course. J48 is an algorithm for generating decision trees and inducing classification rules from the tree.

J48 algorithm was applied using a k-fold cross validation with k=3 and default parameters over the summarized data with each students’ final grade as an additional feature. Here the grade of the student was considered as the class to which a record belongs to. The results obtained are shown in Fig 4.

The results obtained from decision tree learning indicated the dependencies between the grades depends and the student activities. But it was observed that these relations are more specific and shown a severe lack of generality, hence cannot be used for prediction. Reasons for this
observation might be that the number of activities of students were not adequate as well as the use of LMS was an additional tool with the traditional learning methods.

IV. CONCLUSION

In this study a methodology to transform the LMS log records into a usable form is proposed. In addition this study has shown potential methods to identify learning patterns using LMS log records. The course unit selected for this study had a lack of activities in some particular tasks. In addition the usage of LMS as an additional platform for conducting the course on top of the traditional classroom based learning may have some influence on identifying learning behaviours. This study can be extended further with the support of experts in education to correctly characterise the students in the identified clusters.

REFERENCES

[4] Luis Talavera and Elena Gaudioso, Mining Student Data to Characterize Similar Behavior Groups in Unstructured Collaboration Spaces.
A Descriptive Study on Perceived Psychological Stress among Middle Adolescents in Batticaloa Educational Zone

S.P.M.S.Illangasinghe*1, N.Genoosha*2, M.N.M.Pushpakumari *3, A.Arulpragasam*4
*Department of Supplementary Health Science, Eastern University, Sri Lanka
# Department of Primary Health Care, Eastern University, Sri Lanka
*Department of Clinical Sciences, Eastern University, Sri Lanka

1 sillangasinghe@yahoo.com
2 ngenoosh@gmail.com
3 mnpushpakumari@gmail.com

Abstract — Adolescent period is identified as a vulnerable period of life when various mental and physical health problems are seen which may lead to stress. And the stress that is prolonged and managed poorly can be resulted in negative physical, mental, and cognitive outcomes of youth. This Descriptive Cross Sectional study was conducted among middle adolescents in Batticaloa educational zone. Objectives of this study were to describe the levels of stress and the factors influencing the perceived psychological stress of the middle adolescents. Six hundred and sixteen students were participated in this study. Study period was January to October 2015. Perceived psychological stress was identified by using a self-administered PSS14 questionnaire (Perceived Psychological Stress Scale) and the influencing factors were identified by using a structured self-administered questionnaire. After the completion of data collection, data was transferred to Statistical Package of Social Science (SPSS v.20) and were analysed according to the objectives. And the factors influencing the stress were analysed using the chi square test. This study revealed that more than a half of the population (54.4%) is not psychologically stressed and 45.6% are psychologically stressed. Among the stressed students, majority was the male students. Factors significantly associated with stress were the perceived happiness on personal behavior of parents (P=0.009), perceived happiness about lifestyle (P=0.001), perceived happiness about economic status of family (P=0.026). Other factors such as area of living, parents are abroad, perceived happiness on family support were not significantly associated with the perceived stress. The students who perceived unhappy about their life style, parent’s behaviour and economic status were more stressed than the others. Activities focused on enhancing their satisfaction on the personal behaviour of the parents, lifestyle and economic status by various strategies are helpful in reducing their stress.

Keywords Middle adolescents, Perceived psychological stress, Perceived psychological stress scale, Perceived happiness.

I. INTRODUCTION

Adolescence is the transitional period in everyone’s life. The term Adolescence has been derived from Latin word “adolescence”, which means ‘to grow up’ (Prerana RH, 2014). It is the period of 10-19 years of age and this can be further divided into three categories, namely early adolescence (10-13 years of age), middle adolescence (14-16 years of age) and late adolescence (17-19 years of age). It is identified as a vulnerable period of life when various mental and physical health problems are seen which may lead to stress (Thaker RB, Verma AP, 2014). Stress refers to the sum of physical, mental and emotional strains or tensions on a person.
(Brahmbhatt KR, 2003). Some researchers viewed stress as a result of exposure to major life changes of life events (Philip G, 1992). Prolonged and poorly managed stress can be resulted in negative physical, mental, and cognitive outcomes of the youth (Mary T, Kristin A, Hoan N, 2010). Developmental period of adolescence can have stressful life events derived both from normative experiences (e.g. developmental challenges such as puberty, school transition, increased academic demand) and non-normative experiences (e.g. moving to new place, peer group pressure, parents-child conflict) (Moksnes UK,2011). Not only that, biological or genetic factors too can increase one’s vulnerability to stress (Mary T, Kristin A, Hoan N, 2010). These do not only concern bodily changes and awakening sexuality, but also include other psychological changes.

It is essential to recognize the signs of stress in managing the adolescent’s stress. Excessive stress can have a dramatic effect on learning and social development. It can interfere with executive functions such as attention, memory, organization and integration. And, over a time, it can damage brain cells and shrink main memory structures (Casey BJ et al 2014). Stress adversely affects physical and psychological health of the adolescents while reducing the productivity and functioning of entire world (Duggal S. et al, 2000). Reducing adolescent’s stress can improve the physical and psychological health of adolescents and indirectly the productivity and functioning of the adolescents. This will effectively contribute to the community in improving the mental health of youth.

II. MATERIALS AND METHOD

It was an institutional Descriptive Cross Sectional study conducted among the middle adolescents in the Batticaloa educational zone. Study was carried out at selected schools in the Batticaloa educational zone. The general objective was to describe the levels of stress and the associated factors of perceived psychological stress among the middle adolescents.

Study population was the students who were at grade 9, 10 and 11 from the selected schools. Sample size was 616. Students who were willing to participate in this study on the day of visit were included. Absentees and unwilling students were excluded. The study was conducted from January to October 2015.

Study tool and instruments were the Perceived Stress Scale 14 (PSS 14) and Self-administered questionnaire. After the completion of data collection, data was transferred to Statistical Package of Social Science (SPSS v.20) and were analysed according to the objectives. The levels of stress were calculated by the PSS14 scale and the factors influencing the stress were analysed using the chi square test.

III. RESULTS

Study population was the students aged between 14 to 16 years with 310 male students and 306 female students. Analysis showed that 45.6% of middle adolescents were psychologically stressed and 54.4% were non-stressed. Most of the students were happy about their academic performances, family support, time spending with parents, extracurricular activities, parent’s personal behaviour, life style, peer relationship, hobbies, support from teachers and economical status of family.
A. PERCEIVED PSYCHOLOGICAL STRESS

Figure 1: The distribution of perceived psychological stress levels among middle adolescents. (n=616)

The mean stress level was 26.56 and the standard deviation was 5.496, mode was 28. The student who scored more than 28 marks considered as stressed and below 28 marks considered as non-stressed (Hampel P, Petermann F, 2006). This analysis showed that 45.6% of middle adolescents were psychologically stressed and 54.4% were non-stressed.

Figure 2: Distribution of stressed and non-stressed students (n=616)
B. FACTORS INFLUENCING THE PERCEIVED PSYCHOLOGICAL STRESS

Some variables were significantly associated with the perceived stress. Those were,
1. Gender
2. Perceived happiness about life style
3. Perceived happiness about parents’ personal behavior
4. Perceived happiness about economic status of their family

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stressed</th>
<th>Non-Stressed</th>
<th>Chi-square</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>153</td>
<td>157</td>
<td>3.515</td>
<td>0.036</td>
</tr>
<tr>
<td>Female</td>
<td>128</td>
<td>178</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>About life style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happy</td>
<td>250</td>
<td>321</td>
<td>10.598</td>
<td>0.001</td>
</tr>
<tr>
<td>Unhappy</td>
<td>31</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parents personal behaviour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happy</td>
<td>324</td>
<td>292</td>
<td>6.235</td>
<td>0.009</td>
</tr>
<tr>
<td>Unhappy</td>
<td>57</td>
<td>43</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economic status of family</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happy</td>
<td>196</td>
<td>258</td>
<td>4.160</td>
<td>0.026</td>
</tr>
<tr>
<td>Unhappy</td>
<td>85</td>
<td>77</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gender was statistically associated with the perceived psychological stress. Male students were psychologically stressed more than the female students. (P = 0.036)

There was a statistically significant association of perceived happiness about life style with the stress. Students who perceived unhappy about their life style were stressed more than the students who perceived happy about their life style (P = 0.001).

Perceived happiness on personal behaviour of parents was significantly associated with the perceived psychological stress. Students who perceived unhappy about their parents’ personal behaviour were stressed more than the students who perceived happy (P = 0.009).

Stress was statistically influenced by the perceived happiness about economic status of their family. Students who perceived unhappy about their family economic status were stressed more than the students who perceived happy (P = 0.026).
IV. DISCUSSION

This study revealed that 46% of middle adolescents were psychologically stressed. Similar results have been published by Ibrahim N, et al (2004) reported that 42.6% adolescents were psychologically stressed (Ibrahim N, Amit N, Suen MWY, 2014).

This finding revealed that considerable numbers of middle adolescents are being psychologically stressed and they need additional support and guidance to face their stress full life events.

In this study, there was an obvious relationship between the sex and stress. Most of the boys were stressed (54%) compared to the girls (46%). But, Hampel P, et al (2006) reported that adolescent girls aged 10-14 years were stressed more than the adolescent boys in Australia. And Geetha S, et al (2006) in Kartanaka state, India reported that sex of the adolescents has not influenced their stress.

Among the stressed students 52.5% expressed unhappy about the economic status of their family and it was a significant factor influenced their psychological stress. Economic status of the family has a direct impact on all the life events. Wickramarachchi R in 2003 has done a research in Colombo district and reported that school going adolescents with low income had more stress than others. A study conducted by Nancy M, et al in 2003 showed similar results that the children of higher socioeconomic status tend to have significantly lower levels of psychological distress. But, another study, conducted in Kartanaka state, India revealed that the income of the family has no significant impact on the stress among adolescents (Geeta S, 2006).

Another factor that directly influenced the psychological stress was the perceived happiness about their lifestyle. Seventy percentages of students who perceived unhappy about their lifestyle were stressed. It may due to the differences between expectation and the reality of life. This indicates that they need a guidance to overcome these problems. Thalagala N, in 2004 reported that in general 60% of adolescents perceived “good” about their lives. One third of them perceived just ordinary whereas only 2% were unhappy. A further 3% were undecided about how they perceived. It is important to note that a large proportion of adolescents felt “good” about their lives (Hampel P, Petermann F, 2006). But in our study the smallest proportion of adolescents only perceived happy about their lives.

Parents’ personal behaviour was another important factor that directly affected the middle adolescents’ stress. Nearly 60% of students who perceived unhappy about their parents’ personal behaviour were stressed. Family conflicts, family separations, alcoholism of parents may be the factors affecting their perception of parents’ behaviour. Low et al, in 2012 has done a thesis in French language schools and revealed that family disruption and interpersonal difficulties were significantly associated with depression symptoms which was the source of personal stress.

Factors that not directly influencing the stress were perceived happiness about Academic performances, Family support, Time spending with the parents, Extra-curricular activities, Peer relationship, Hobbies, Support from teachers and Area of living.
V. CONCLUSION

This study revealed that nearly half of the middle adolescents were psychologically stressed. And perceived happiness about economic status of family, personal behaviour of their parents, lifestyle and gender were the factors influencing the stress of middle adolescents.

The findings may widen the awareness of teachers, parents and healthcare professionals on the middle adolescents’ stress and may help them to improve their mental well-being.

REFERENCES


Comparative study on poly herbal Siddha preparation of “Karunai kizhanku lekiyam” in house preparation and market sample

S. Janani*1, S. Kaluthotage#2

* Unit of Siddha Medicine, Trincomalee Campus, EUSL
# Bandaranayake Memorial Ayurvedic Research Institute, Nawinna, Maharagama

Abstract - Hemorrhoids (HEM-uh-roids), also called piles, are swollen and inflamed veins in anus and lower rectum. Hemorrhoids may result from straining during bowel movements or from the increased pressure on these veins during pregnancy, among other causes. The number of hemorrhoids patients increased around the world because of their improper diet pattern and lifestyle. Surgery is only recommended treatment for hemorrhoids which often leads to a variety of side effects, hence herbal drugs are resolved to as an alternative therapy due its lesser side effects. But herbal drugs need standardization and validation studies. In the recent years there has been considerable researches going on traditional Siddha medicines focusing towards validation and standardization aspects. Karunai kizhangu lehiyam an herbal based Siddha formulation used to treat piles (internal & external) and constipation. It consists of Karunai kizhanku (Amorphophallus paeoniifolius), Thripala chooranam, Pooneeru (fuller’s earth) & gingelly oil. In the present study an attempt has been made to standardize and compare the Karunai kizhanku lekiyam in house preparation and market sample by some preliminary studies of standardization methods. Attempts were made to determine the quality parameters for this Siddha formulation which include determination of organoleptic properties, physicochemical parameters such as moisture content, ash values, extractability in water and ethanol were carried out. Data of the results obtained suggested that Karunai kizhanku lehiyam can be used as a good drug for piles and constipation.

Keywords Karunai kizhangu lehiyam, Hemorrhoids, Siddha formulation, standardization

I. INTRODUCTION

1.1. Background
The plants are the major source of naturally occurring medicaments. Sri Lankan Systems of Medicine in practice are Siddha, Ayurveda and Unani and the efficacy and popularity of any system of medicine depends on the quality of medicines used for the treatment. The Siddha system is contains roughly 300,000 verses covering diverse aspects of medicine. Standardization of herbal medicines becomes most important to access the quality of the drug. Standardization is an essential factor for herbal formulation in order to assess the quality of the drugs based on the concentration of their active principle.

Thus, the present study deals with standardization of Siddha herbal preparation, Karunaikizhangulehiyam is mentioned in the Siddha pharmacopeia by Dr. Pon Ramanathan for the treatment of piles (internal & external) and constipation. Present paper demonstrates the development of methods for the standardization of Karunaikizhangulehiyam of in house...
preparation and market sample through some preliminary studies; because a systematic protocol for standardization of Karunaikizhangulehiyam is not available, therefore it was decided to evaluate the qualitative and quantitative analysis for Karunaikizhangulehiyam.

1.2. Statement of the problem

Nowadays the number of hemorrhoids patients increased around the world because of their improper diet pattern and lifestyle. Even though surgery is the only available treatment in western medicine. But most of the patients doesn’t like to the surgery. On the other hand there are most of the drugs enumerated in Siddha medicine for the treatment of piles. Therefore standardize the karunaikizhankulekiyam with the help of some preliminary studies of standardization methods because this is a one of the specific medicine for piles.

1.3. Hypothesis

Karunaikizhangulekiyam is an effective medicine for moolanoi (Hemorrhoids).

1.4. Objectives

General objective –

- To compare the Karunaikizhangulekiyam, in house preparation and market sample by some standard preliminary standardization methods.

Specific objectives –

- To identify the organoleptic characters of the ingredients
- To calculate the moisture content, ash value and extract value

1.5. Significance of the study

In recent era, there has been great demand for plant derived products in around the world. Herbal medicines are not a simple task since many factors influence the biological efficacy and reproducible therapeutic effect. Standardization of herbal formulations is essential in order to assess of quality drugs, based on the concentration of their active principles, physical, chemical, parameters. The quality assessment of herbal formulations is of paramount importance in order to justify their acceptability in modern system of medicine. One of the major problems faced by the herbal industry is the unavailability of rigid quality control profiles for herbal materials and their formulations. Therefore it was decided to evaluate the qualitative and quantitative analysis for Karunaikizhangu lehiyam.

1.6. Scope of the study

To assess the quality of drugs based on the concentration of their active principles, physical, chemical, phyto-chemical standardization parameters. Because the quality assessment of herbal formulations is of paramount importance in order to justify their acceptability in modern system of medicine.

To develop a standard operating procedures for the manufacturing process to develop pharmacopeial standards for herbal preparations.

Scientifically validated and technologically standardized herbal medicines may be derived using a safe path of reverse pharmacology approach based on traditional knowledge database.
1.7. Limitation of the study
Time duration is short (2 ½ months)
There is a problem in laboratory to assess the TLC and Ph.

II. METHODOLOGY

- Authentication-
  Each ingredient has to be authenticated (parts of the plant collection, as phytomorphology botanical identity) and voucher specimen (No: IN 002) was deposited by botany section, Bandaranayaka, Memorial Ayurvedic Research Institute (BMARI), Navinna, Maharagama, Sri Lanka.

- Preparation of drug-
  The crude drugs used in preparation of Karunaikizhangulehiyam were collected from local market in November 2014 and identified in Botany section, Bandaranayaka Memorial Ayurvedic Research Institute (BMARI), Navinna, Maharagama, Sri Lanka. One in house formulation was prepared, as per the procedure mentioned in Siddha text “Siddha pharmacopeia by Dr. PonRamanathan”.

The preparation contains karunaikzhankhu (*Amorphophallu spaeoniifolius*), thripalachoornam, pooneeru (fuller’s earth) and gingelly oil. Take equal amount of *Phyllanthus emblica*, *Terminalia chebula*, *Terminalia belerica* were then dried in shade, powdered separately and passed through sieve cotton cloth. Then mixed the each equal amount of above powders and lastly packed in a well closed container to protect them from moisture.

Then clean the karunaikzhankhu and cut in to small pieces. After that take 1 part (120g) of karunaikzhankhu& boiled with water. Later take the boiled yam and made in to paste form, then add 1/2 part (60g) of thripalachooranam& 1/4 part (30g) of fuller’s earth with the paste. Then place the vessel in hearth and poured the adequate amount of gingelly oil & mixed well. After that remove the vessel from the hearth, when it is become “mezhukupatham” (Lekiyam stage). Finally the lekiyam stored in a clean container.

- Marketed samples
  The marketed sample of “Karunaikizhangulehiyam” was procured in a private pharmacy, Jaffna.

- Botanical parameters
  Organoleptic evaluation was carried out to assess the colour, odour, texture and taste of the each ingredients as well as marketed and in-house formulations.

- Physicochemical investigation
  A physicochemical investigation of the In-house formulations and marketed formulation has been done to evaluate the quality and purity of the powder drug. This is including determination of extractive values (water and ethanol), ash values and loss on drying.

34
Loss on drying is the loss of mass expressed as percent w/w. About 2g of 3 drug samples of each formulation was accurately weighed and dried at 105°C for 5hrs. Percentage was calculated with reference to initial weight. Samples were dried until become constant weight. Finally average percentage was calculated.

II. Determination of total ash

First empty crucibles were weighed. Then 0.5g of 2 samples and 1g of each samples were placed in a previously ignited crucible and weighed. The drug was spread and weighed accurately. The material was incinerated by gradually increasing the heat, not exceeding 450°C until free from carbon, cooled, weighed and percentage ash was calculated. Finally the average percentage was calculated.

III. Alcohol soluble extractive value

2.5g of coarsely powdered air-dried drug was macerated with 50ml of 95% of ethanol in a closed flask for twenty-four hours, shaking frequently during six hours and allowing standing for eighteen hours. It was then filtered rapidly; taking precautions against loss of solvent. 20ml of the filtrate was evaporated to dryness in a tared flat-bottomed shallow dish at 105°C to constant weight and weighed. The percentage of alcohol-soluble extractive was calculated with reference to the air dried drug and is represented as % value.

IV. Water soluble extractive value

2.5g of coarsely powdered air-dried drug was macerated with 50ml of chloroform water in a closed flask for twenty-four hours, shaking frequently during six hours and allowed to stand for eighteen hours. It was then filtered rapidly, taking precautions against loss of solvent. 20ml of the filtrate was evaporated to dryness in a tared flat-bottomed shallow dish at 105°C to constant weight and weighed. The percentage of water-soluble extractive was calculated with reference to the air-dried drug and is represented as % value.

III. RESULTS AND DISCUSSION

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Appearance</th>
<th>Colour</th>
<th>Odour</th>
<th>Taste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminaliachebula</td>
<td>Smooth powder</td>
<td>Yellowish brown</td>
<td>Characteristic</td>
<td>Astringent</td>
</tr>
<tr>
<td>Phyllanthusemblica</td>
<td>Smooth powder</td>
<td>Brown</td>
<td>Characteristic</td>
<td>Astringent</td>
</tr>
<tr>
<td>Terminaliabelirica</td>
<td>Smooth powder</td>
<td>Dark brown</td>
<td>Characteristic</td>
<td>Sour &amp; Astringent</td>
</tr>
<tr>
<td>Amorpholluscampanulatus</td>
<td>Rough</td>
<td>Creamish grey</td>
<td>Characteristic</td>
<td>Acrid</td>
</tr>
<tr>
<td>Fuller’s earth</td>
<td>Smooth fine powder</td>
<td>Whitish white</td>
<td>Characteristic</td>
<td>Salty</td>
</tr>
</tbody>
</table>
Table 2: Organoleptic Properties of two Formulations of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th>Parameters</th>
<th>In-house formulation</th>
<th>Marketed formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Thick semi solid mass</td>
<td>Thick semi solid mass</td>
</tr>
<tr>
<td>Colour</td>
<td>Dark brown</td>
<td>Dark brown</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic</td>
<td>Pleasant</td>
</tr>
<tr>
<td>Taste</td>
<td>Astringent</td>
<td>Sweet</td>
</tr>
</tbody>
</table>

Table 3: Loss on drying readings of 3 samples of in house preparation of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th></th>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Sample 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial weight (g)[empty dish]</td>
<td>77.7997</td>
<td>128.7802</td>
<td>129.4726</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>2.0139</td>
<td>2.0146</td>
<td>2.0173</td>
</tr>
<tr>
<td>Final weight(g) [after 3 hours ]</td>
<td>79.6373</td>
<td>130.6178</td>
<td>131.3211</td>
</tr>
<tr>
<td>Weight(g) [after 4 hours ]</td>
<td>79.6060</td>
<td>130.5790</td>
<td>131.2842</td>
</tr>
<tr>
<td>Constant weight (g)</td>
<td>79.6062</td>
<td>130.5791</td>
<td>131.2845</td>
</tr>
<tr>
<td>Weight difference(g)</td>
<td>79.6062 - 77.7997 = 1.8065</td>
<td>130.5791- 128.7802= 1.7989</td>
<td>131.2845- 129.4726= 1.8119</td>
</tr>
<tr>
<td>Weight of moisture content (g)</td>
<td>2.0139 - 1.8065= 0.2074</td>
<td>2.0146 - 1.7989= 0.2157</td>
<td>2.0173 - 1.8119= 0.2054</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>( \frac{0.2074}{2.0139} \times 100 = 10.3098 )</td>
<td>( \frac{0.2157}{2.0209} \times 100 = 10.67346 )</td>
<td>( \frac{0.2054}{2.0141} \times 100 = 10.1981 )</td>
</tr>
<tr>
<td>Average %</td>
<td>10.30098 + 10.67346+ 10.1981 / 3 = 31.17254 / 3 = 10.390847</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Loss on drying readings of 3 samples of market samples of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th></th>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Sample 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial weight (g)[empty dish]</td>
<td>84.2297</td>
<td>131.3705</td>
<td>129.5073</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>2.0061</td>
<td>2.0126</td>
<td>2.0703</td>
</tr>
<tr>
<td>Final weight(g) [after 3 hours ]</td>
<td>85.7816</td>
<td>132.9225</td>
<td>131.0892</td>
</tr>
<tr>
<td>Weight(g) [after 5 hours ]</td>
<td>85.7759</td>
<td>132.9172</td>
<td>131.0844</td>
</tr>
<tr>
<td>Constant weight (g)</td>
<td>85.7760</td>
<td>132.9170</td>
<td>131.0842</td>
</tr>
<tr>
<td>Weight difference</td>
<td>85.7760 - 84.2297 = 1.5463</td>
<td>132.9170- 131.3705= 1.5465</td>
<td>131.0842- 129.5073 = 1.5769</td>
</tr>
</tbody>
</table>
Table 5: Ash values of 3 samples of in house preparation of Karunaikizhankulekkiyam

<table>
<thead>
<tr>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Sample 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial weight (g)[empty crucible]</td>
<td>12.5344</td>
<td>23.5927</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>0.5595</td>
<td>1.0690</td>
</tr>
<tr>
<td>Final weight(g) (1)</td>
<td>12.5459</td>
<td>23.6159</td>
</tr>
<tr>
<td>Next reading(g) (after 2 hrs) (2)</td>
<td>12.5457</td>
<td>23.6140</td>
</tr>
<tr>
<td>Constant weight(g) (after 4 hrs) (3)</td>
<td>12.5457</td>
<td>23.6140</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>( \frac{0.0113}{0.5595} \times 100 )</td>
<td>( \frac{0.0213}{1.0690} \times 100 )</td>
</tr>
<tr>
<td>Average %</td>
<td>2.01966 + 1.99252 + 1.61204 / 3 = 5.62422 / 3 = 1.87474</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Ash values of 3 samples of market samples of Karunaikizhankulekkiyam

<table>
<thead>
<tr>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Sample 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial weight (g)[empty crucible]</td>
<td>11.3579</td>
<td>22.5878</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>0.5005</td>
<td>1.0425</td>
</tr>
<tr>
<td>Final weight(g) (1)</td>
<td>11.3626</td>
<td>22.6030</td>
</tr>
<tr>
<td>Next reading(g) (after 2 hrs) (2)</td>
<td>11.3626</td>
<td>22.6026</td>
</tr>
<tr>
<td>Constant weight(g) (after 4 hrs) (3)</td>
<td>11.3626</td>
<td>22.6024</td>
</tr>
<tr>
<td>Weight difference</td>
<td>11.3626 - 11.3579</td>
<td>22.6024 - 22.5878</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>( \frac{0.0047}{0.5005} \times 100 )</td>
<td>( \frac{0.0146}{1.0425} \times 100 )</td>
</tr>
<tr>
<td>Average %</td>
<td>0.93906 +1.40048 +1.15049 / 3 = 3.49003 / 3 = 1.1633433</td>
<td></td>
</tr>
</tbody>
</table>
### Table 7: Extract values of in house preparation of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th></th>
<th>95% of Ethanol</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial empty weight(g)</td>
<td>63.1392</td>
<td>63.1379</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>2.5054</td>
<td>2.5011</td>
</tr>
<tr>
<td>Volume of solvent(ml)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 1)</td>
<td>63.5117</td>
<td>63.9997</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 2)</td>
<td>63.5091</td>
<td>63.9910</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 3)</td>
<td>63.5091</td>
<td>63.9910</td>
</tr>
<tr>
<td>Percentage%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \frac{63.5091 - 63.1392 \text{ g}}{20 \text{ ml}} \times \frac{50 \text{ ml}}{2.5 \text{ g}} \times 100 = 36.99 %)</td>
<td>( \frac{63.9910 - 63.1379 \text{ g}}{20 \text{ ml}} \times \frac{50 \text{ ml}}{2.5 \text{ g}} \times 100 = 85.31 % )</td>
</tr>
</tbody>
</table>

### Table 8: Extract values of market samples of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th></th>
<th>95% of Ethanol</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial empty weight(g)</td>
<td>38.2686</td>
<td>65.6259</td>
</tr>
<tr>
<td>Sample weight(g)</td>
<td>2.5117</td>
<td>2.5005</td>
</tr>
<tr>
<td>Volume of solvent(ml)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 1)</td>
<td>38.5178</td>
<td>66.2084</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 2)</td>
<td>38.5098</td>
<td>66.2085</td>
</tr>
<tr>
<td>Final weight(g) in 20ml(weight 3)</td>
<td>38.5098</td>
<td>66.2084</td>
</tr>
<tr>
<td>Percentage%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \frac{38.5098 - 38.2686 \text{ g}}{20 \text{ ml}} \times \frac{50 \text{ ml}}{2.5 \text{ g}} \times 100 = 24.12 % )</td>
<td>( \frac{66.2084 - 65.6259 \text{ g}}{20 \text{ ml}} \times \frac{50 \text{ ml}}{2.5 \text{ g}} \times 100 = 58.25 % )</td>
</tr>
</tbody>
</table>

### Table 9: Physicochemical Parameters: In-house formulation and Marketed Formulation of Karunaikizhankulekiyam

<table>
<thead>
<tr>
<th></th>
<th>Result in % w/w (In-house formulation)</th>
<th>Result in % w/w (Marketed formulation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture content</td>
<td>10.390847</td>
<td>23.466087</td>
</tr>
<tr>
<td>Total Ash Value</td>
<td>1.87474</td>
<td>1.1633433</td>
</tr>
<tr>
<td>Alcohol soluble extractives</td>
<td>36.99</td>
<td>24.12</td>
</tr>
<tr>
<td>Aqueous soluble extractives</td>
<td>85.31</td>
<td>58.25</td>
</tr>
</tbody>
</table>

### Table 10: Standard range of physicochemical Parameters of lekaya

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Determined value (Ayurveda Pharmacopeia of India)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water soluble extractive</td>
<td>63.65 % w/w Not less than 60 %</td>
</tr>
<tr>
<td>Ethanol soluble extractive (Oily consistency)</td>
<td>55.85 % w/w Not less than 20 %</td>
</tr>
<tr>
<td>Loss on drying</td>
<td>3.44 % w/w Not more than 12.16 %</td>
</tr>
<tr>
<td>Total ash</td>
<td>1.99 % w/w Not more than 2.5 %</td>
</tr>
</tbody>
</table>
In house formulation was prepared in accordance with the Siddha pharmacopeia by Dr. Pon Ramanathan. As part of standardization procedure, the finished product Karunaikizhangulehiyam was tested for relevant physical and chemical parameters along with sample from private manufacturer for a comparative study. Both samples were dark brown in color. The lekiyams were smooth & semisolid texture. Marketed formulation having fragrant odour& possessing Sweetish sweet taste. In-house formulation having characteristic odour& astringent taste.

The organoleptic properties of the marketed formulations and the in-house formulations were reported in table 2. Quality tests for both samples were performed for moisture content, ash content, water soluble extractive, ethanol soluble extractive, acid insoluble ash and water insoluble ash, and were found to be within standard ranges. The extractive values and ash values of lekiyam, in-house formulation and different marketed formulations are given in table 3.

The results are expressed as the total ash value (1.87) of in house formulation was found to be higher than that for market sample (1.16). Moisture content for in house formulation was found to be 10.39 and in case of marketed formulation was found to be 23.46 respectively.

The extractive values of formulations in water were found to be much higher than alcohol extractive values. Alcohol soluble extractive of in house formulation was found 36.99 and the market sample was 24.12. Aqueous soluble extractive of in house formulation was found 85.31 and the market sample was 58.25. The results of the market formulations and in house formulation were found to be comparable.

IV. CONCLUSION

Siddha formulation of “Karunai kizhanku lekiyam” has been standardized by intervention of scientific quality control measures in the preparation describe in siddha texts. To conclude the standards determined in the present investigations could be useful in checking the genuineness of this Siddha herbal formulation Karunai kizhanku lehiyam. These parameters are being reported for the first time and could contribute towards the quality of Siddha formulation. Data of the results obtained suggested that Karunai kizhanku lehiyam can be used as a good drug for piles and constipation. All the physicochemical characters of the in house preparation were found in standard range. In market sample most of the characters were found in standard range but water soluble extract & moisture content were varies from the normal range.

REFERENCES


Constructive alignment in medical education of Sri Lanka

T. Sathaananthan

Department of Medical Education and Research, Faculty of Health-Care Sciences, Eastern University Sri Lanka

sathaananthan@yahoo.co.uk

Abstract - As any study programme should have the constructive alignment undergraduate Medical programme of each faculty should be aligned with the guidelines and specification on standards and criteria for the accreditation of medical schools in Sri Lanka by Sri Lankan Medical Council where student should register prior to practice as a medical profession in Sri Lanka. This study was conducted by the document analysis based on the official documents of the medical schools such as programme review report, curriculum, and hand book in 2013. This study presents the constructive alignment of the medical education between the institutional goals of the medical schools and the guidelines and specification on standards and criteria of the medical profession.

Keywords: Constructive alignment, institutional goals; medical profession; professional practice

I. INTRODUCTION

In Sri Lanka, an active dialogue is going on regarding the state of medical education and the need for curriculum change, innovation, and the adoption of contemporary, integrated, competency-based educational models (Jayasinghe, 2002). So the curriculum analysis is a very important concept in medical education. This analytical process involves documentary evidence in the form of materials such as syllabus, objectives, learning experiences, textbooks. Curriculum analysis focuses on constructive alignment as a key element in effective educational design. Constructive alignment is a principle used for devising teaching and learning activities, and assessment tasks that directly address the intended learning outcomes in a way not typically achieved in traditional lectures, tutorial classes and examinations (Biggs and Tang, 2011).

The institutional goals is an integral part of the curriculum (Nicholls and Nicholls, 1983). It has been found that the relevance of the institutional goals of the Sri Lankan Universities with the medical profession has not been sufficiently investigated.

In this regard, this study was aimed to determine the constructive alignment of undergraduate medical programme.

II. METHODOLOGY

Institutional objectives of five medical faculties in Sri Lanka denoted as A, B, C, D and E were obtained and analysed with the educational three domains such as knowledge, skill and attitude. The document analysis was used as an instrument to collect the data (Fetterman, 1998)

In the analysis, the guidelines and specifications on standards and criteria for accreditation of medical school in Sri Lanka by Sri Lanka Medical Council (SLMC) published in 2011 were
used as a standard. These standards have been analysed with the institutional objectives of five faculties to identify its relevance to the medical profession in Sri Lanka in 2013. The official documents of the medical schools such as programme review report, curriculum, and handbook were used to identify the objectives of the medical school. Ethical clearance of this study was obtained from ethic review committee of faculty of Medicine, University of Peradeniya

III. RESULTS AND DISCUSSION

A. Institutional objectives of Faculty A

There are ten institutional objectives as follows (Programme Review Report, 2009).

1. To develop and apply attributes and personal characteristics necessary for a productive professional relationship
2. To apply basic scientific knowledge in a wide range of practice situations.
3. To diagnose and rationally manage a defined range of health problems in Sri Lanka.
4. To communicate effectively.
5. To comprehend and apply ethical values associated with professional practice.
6. To apply the principles and practice of medicine in a community.
7. To contribute to the health system of the country as a primary care physician.
8. To demonstrate the ability to lead, guide and co-ordinate the work of others.
9. To evaluate students’ performance and seek assistance where necessary.
10. To keep abreast of advancing medical knowledge

The institutional objectives are formulated as per the three educational domains, knowledge, skill and attitude. The institutional objectives 2, 3, 5, 6 and 9 include knowledge and skill. Objectives 7 & 10 include knowledge, skills and attitude. The objectives 1 and 4 were originated to acquire the attitude and skills respectively. The objectives 8 was to acquire the skill. Institutional objectives 2 and 10 are directly relevant to Biochemistry. It can be noted that there is no medico legal aspects included in the institutional objective.

B. Institutional objectives of Faculty B

There are eight institutional objectives of the faculty B. In order to achieve the institutional objectives, the faculty also have seven competencies. (Programme Review Report, 2008).

Institutional objectives

On completion of the M.B.B.S course, a graduate should be able to do the following, at the level of general professional practice.

1. Identify important illnesses and other health related problems in individuals and in the community, and plan and implement appropriate preventive, curative and rehabilitative measures.
2. Identify, recommend and implement activities which promote health of the individual, family and community.
3. Work harmoniously with others as a member of a healthcare delivery team.
4. Educate and train other individuals, healthcare personnel and the community, towards better health.
5. Develop and maintain personal characteristics and attitudes for a career as a health professional.
6. Carry out basic medico-legal procedures and statutory duties.
7. Plan and carry out appropriate health related research projects.
8. Develop into a self-directed learner with the capacity to recognize the need for self-evaluation.

Competencies

To achieve the objectives stated above, the graduate should:

C1. have an appropriate knowledge of biomedical and social sciences and the humanities.
C2. be able to recognize the particular needs of a patient, community, self and the profession.
C3. be able to understand the ethical, legal and economic aspects of professional responsibilities and tasks.
C4. be able to use appropriate clinical and therapeutic skills.
C5. be able to recognize the importance of accountability and honesty, and the humane approach to professional work.
C6. be able to utilize appropriate educational, communicative, management and interpersonal skills.
C7. be able to utilize the facilities and resource available in relevant sectors for the benefit of the patient and the community.

The institutional objectives of the faculty B have three educational domains - knowledge, skills and attitude. The objectives 1, 2, 4, and 6 concentrate on knowledge and skill. The objectives 3, 5 and 8 focus on attitude. As the objective 7 deals with research, it focuses on all three domains.

The subject content of Biochemistry reflected that it can be used to achieve the institutional objectives 1, 2, and 4. Ethical, social and legal implications of human genome project are included in the subject content to satisfy the institutional objective “Carry out basic medico-legal procedures and statutory duties”.

C. Institutional objectives of Faculty C

The institutional objectives of faculty have been named as expected outcomes. There are twelve expected outcomes as follows (Curriculum for Medical Course, 2011).

At the end of the MBBS course the graduate should:

1. possess sound knowledge, skills and attitudes required for patient care.
2. be competent in health promotion and disease prevention.
3. possess good communication and inter personnel skills.
4. possess IT skills required for medical practice, self-learning and research.
5. be able to demonstrate administrative and management skills.
6. be able to carry out medico legal responsibilities.
7. be able to function as a leader and a team member.
8. be a self-learner committed to continuous professional development.
9. apply the principles of ethical practice in personal and professional life.
10. be able to teach and train.
11. plan, conduct and report research.
12. develop as reflective professional.

The first expected outcomes of medicine course include the three domains, such as knowledge, skills, and attitude, which every medical professional should possess. However, there was no
specific mention about basic sciences as in some of the schools. The curriculum objectives from 1-7 entirely provide the knowledge on the subject and the curriculum objective 4, in addition to knowledge, include the skills. The curriculum objectives 8-10 entirely satisfy the skills. Only the last objective (No.11) is to achieve the attitude.

D. Institutional objectives of Faculty D

There are ten institutional objectives in faculty D (Hand Book, 2013):

The product should

1. Posses an attitude towards medicine that is both scientific and humane and have the characteristics of high ethical standards required for professional life.
2. Be able to acquire knowledge, skills and attitudes that will enable the holistic management of medical problems affecting individuals and the community.
3. Be able to deal appropriately with all emergencies utilizing the facilities available.
4. Be aware of the limitations of knowledge and skills and be prepared to seek help when necessary.
5. Be able to work in a team, and provide leadership in activities related to health.
6. Be able to provide medico - legal services to the judicial system of the country.
7. Be able to assess evidence both as to reliability and relevance and appreciate that conclusions are reached by logical deductions.
8. Be able to continue self- education and contribute towards progress of medical sciences.
9. Demonstrate knowledge of the interaction between man and his environment and his/her responsibility in promoting a healthy environment.
10. Be able to communicate effectively with fellow practitioners, patients and their families, other professionals and public.

As in the institutional objectives of other four faculties, the institutional objectives of the faculty D have been worded in a manner focusing on the product. The objectives are analyzed with knowledge, skill and attitude i.e. on the three educational domains.

The objectives 1, 2, 3, 5, 6, 8 and 9 provide the students with knowledge, skills and attitude. The objectives 4 and 7 can provide only knowledge and skill and 10 provide skills and attitudes.

E. Institutional objectives of Faculty E

In contrast to other faculties, faculty E has the maximum number of institutional objectives which is twenty one in number (Handbook for Medical Students, 2010).

At the end of the period of undergraduate training, doctors should

1. adopt an empathic and holistic approach to patients and their problems and be motivated to serve the people of Sri Lanka.
2. have developed positive attitudes towards patients, the community and members of the health team, and be aware of rights of patients.
3. have a perception of the ethical issues relating to individual doctor-patient relationships with other professionals and with society as a whole.
4. possess the skills to communicate effectively in both national languages and in English with patients, relatives and the healthcare team.
5. have the desire and capability to maintain professional standards.
6. demonstrate knowledge of structure and function of the human body and their inter-relationships in health and disease.
7. demonstrate knowledge & skills to diagnose, treat, follow up and prevent diseases common in Sri Lanka and manage medical emergencies with the available resources.
8. be aware of other diseases which illustrate important principles in medical science and demonstrate a basic knowledge of less common diseases.
9. be able to recognize serious diseases in the early stages.
10. understand and engage in reflective practice, audit and self-appraisal, be aware of limitations of their professional skills, available facilities and be able to recognize conditions where referral is necessary.
11. be able to carry out basic medico-legal procedures, and comply with legal and administrative responsibilities applying the principles of confidentiality, consent and integrity.
12. have a knowledge of the managerial skills required to administer health institutions and health teams and be able to take a leadership role when necessary.
13. possess skills to efficiently and effectively manage physical resources, human resources, financial resources and information resources in a healthcare setting, and be able to take a leadership role when necessary.
14. have the knowledge to deliver primary health care.
15. develop knowledge, attitudes and skills in prevention of diseases and promotion of health taking into consideration social, cultural and economic characteristics of the individual and the society.
16. be aware of the principles of behavioural sciences as applied to health and practice of medicine.
17. be aware of alternative systems of medicine practiced in the country.
18. be capable of continuing self-learning, analytical and critical thinking reasoning and decision making skills.
19. be equipped to undergo further post-graduate training.
20. recognize the importance of issues such as stress reduction, self-care and avoiding unhealthy and unethical practices.
21. demonstrate the skills of being a lifelong learner.

The institutional objectives were formulated based on the three educational domains—knowledge, skill and attitude. The objectives no 15 and 19 satisfied all three domains. The first and third objective focuses on attitude. Second and 12th focuses on Knowledge, and attitude. The objectives 4, 9, 10 and 13 focus on skills. The objective 5 and 21 focuses on skills and attitude. The knowledge was focused in the objectives 6, 8, 14, 16, 17 and 20. The knowledge and skill are focused in 7, 11 and 18.

Some of the institutional objectives such as 8, 10 and 16 begin using vague terms “be aware” and “understand”. These were not actions verbs and are not measurable.

**F. SLMC Guidelines and institutional objectives**

The Sri Lanka Medical Council (SLMC) is a professional body. The medical graduates should register in the Sri Lanka Medical Council prior to professional practice. In order to register the medical graduate, MBBS programme of each faculty should be accredited. Thus the SLMC has guidelines and specification on standards and criteria for the accreditation of medical schools.
in Sri Lanka. Hence, MBBS programme of every medical faculty should be designed in par with SLMC guidelines. In the SLMC guidelines, there are twelve expected outcomes (Table 1).

In the present analysis, institutional objectives of faculties were also considered along with the SLMC guidelines.

However, in faculty B, in addition to the institutional objectives the competencies of Faculty B were also used in this analysis.

**SLMC Guidelines**

1. Have acquired a knowledge and understanding of basic, para clinical, clinical and social sciences relevant to the practice of medicine.
2. Be proficient in basic clinical skills such as the ability to obtain patient’s history to undertake a comprehensive physical and mental state examination, interpret the findings, arrive at a different diagnosis, identify investigations required to arrive at a diagnosis, and arrive at a patient management plan.
3. Be able to fulfil basic medico legal responsibilities.
4. Demonstrate attitudes necessary for the achievement of high standards of ethical medical practice.
5. Demonstrate competence in information/data handling, retrieval of information, record keeping and IT.
6. Have well developed communication and language skills.
7. Have understanding of the dynamics of team work, leadership and show respect for other categories of health care workers who comprise the health care team.
8. Have the knowledge, attitudes and skills necessary to deliver primary health care.
9. Be able to promote health and prevent disease in the context of the whole individual and his or her place in the family and society.
10. Be appropriately competent in higher order thinking research skills and practice of evidence based medicine.
11. Personal development and professionalism.
12. Health management.
Table 1: Comparison of SLMC guideline and institutional objectives of faculties

<table>
<thead>
<tr>
<th>SLMC Guidelines</th>
<th>Institutional objectives of Faculties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>1.</td>
<td>2, 9</td>
</tr>
<tr>
<td>2.</td>
<td>3,4</td>
</tr>
<tr>
<td>3.</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>4</td>
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<tr>
<td>7.</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>6</td>
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<td>9.</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>3</td>
</tr>
</tbody>
</table>

The institutional objectives of the five faculties have mostly matched with SLMC guidelines. SLMC guideline No 1 “Have acquired a knowledge and understanding of basic, para clinical, clinical and social sciences relevant to the practice of medicine” is related to the Biochemistry subject. Table 1 indicates that all the five faculties have the institutional objectives to achieve the Biochemistry subject.

In addition to the SLMC guidelines 1, SLMC guidelines 2, 4, 7, 8, 9, 11 and 12 are followed in all faculties. In faculty B, the first two SLMC guidelines are present in the competency but not in the institutional objectives. In faculty A, the medico legal aspects have not been included in the institutional objectives, while faculties B, C, D and E have specified the medico legal aspect. The objectives related to information retrieval, data handling, record keeping and IT are defined only in the faculty C. Faculty B does not have institutional objectives related to the communication and language while in the other faculties it is clearly defined.

The health promotion and disease prevention has been defined in all the faculties. The research and health management are also defined most faculties. However, there is no research related objectives in faculty A. This analysis is summarized in the table 1, where numbers under each faculty denote the corresponding institutional objectives. The numbers starting with C denote the competency of faculty B.

IV. CONCLUSION

Institutional objectives were designed with the three educational domains; knowledge, skills and attitude making it more meaningful.

There are wide variations between the 5 schools in the documentation. Though all five schools provide direction for specification of learning outcomes for inclusion of essential knowledge and competencies from the different disciplines, the institutional objectives of Faculty C only stated directly to satisfy the all SLMC guide lines.
REFERENCES

Impact of Organizational Learning on Organizational Innovation

Aqeela.M.S.F*1, Victor. L.D#2

* Department of Management, Eastern University, Sri Lanka
# Department of Management, Eastern University, Sri Lanka

1 aqeelasiraj@yahoo.com
2 vldila@yahoo.com

Abstract- Learning became a key activity for organization development and innovation. Recent years there have seen increased attention being given to the organizational capability that facilitates organization to learning. Knowledge constitutes input into the learning process, and sometimes knowledge is the outcome of learning. Organizational innovation is the creation of valuable and useful new products/services within an organizational context (Jannessen, 2004). According to that the aim of this research is to see the impact of organizational learning on organizational innovation. Organizational learning is an important determinant for the organizational innovation. The study took two variables named organizational learning and organizational innovation which is analyzed in private sector organizations. Under this there are three dimensions in the organizational learning and two dimensions are in organizational innovation. Shred vision, commitment to learning and open mindedness are coming under the organizational learning and technical innovation and administrative innovation are coming under the organizational innovation. Information was gathered from employees who are working in private organizations. The sample size is 200 employees in Puttalam District. The collected data are presented through univariate analysis and bivariate analysis using the SPSS 19.0 software. According to the results obtained through the data, the level of organizational learning is in high level and the level of organizational innovation is in high level. Further it is proved that the Organizational learning and the organizational innovation have positive relationship between them.

Keywords Organizational Learning, Organizational Innovation

I. INTRODUCTION

There are lot of obstacles for efficient and fruitful knowledge management and organizational learning. The knowledge management may inhibit an organization’s skills for learning and problem solving (Liao, 2002). Generally routine problem solving applications are accepted as times and endeavor saving, even as omitting risk (Liao, Fei and Liu, 2008).

To deal with the existing challenges, organizations should be seeking ways to augment research and knowledge development, shape their efficient management and find an effective way to exploit it.

Learning became a key activity for organization development and innovation. Recent years there have seen increased attention being given to the organizational capability that facilitates organization to learning. The capability to learn is a critical factor for organization to grow and innovate (Lynn and Akgun, 2000; Hult, Hurly and Knight, 2004).
Knowledge constitutes input into the learning process, and sometimes knowledge is the outcome of learning. All this comes down to defining what learning and knowledge means. Organizational learning is the process of acquisition, dissemination, interpretation, implementation and storage of new knowledge in organization (Au, Yoris, Carpenter, Darrell, Chen, Xiaogang and clark, 2009, p: 9).

Organizational learning would enhance the innovative capacity of an organization. Innovation is a result of individual and organizational learning and the only source of lasting competitive advantage in a knowledge intensive industry (Liao, Fei and Liu, 2008).

Organizational innovation is the creation of valuable and useful new products/services within an organizational context (Jannessen, 2004). Organizational innovation is the tendency of the organization to develop new or improved products/services and its success in bringing those products/services to the market (Gumusluoglu and Ilsev, 2009).

Based on the study the research question is “what is the level an impact of organizational learning and organizational innovation?”

Further the research is going to gain these following objectives.

- To investigate the degree of existence of organizational learning and organizational innovation in private sector organizations
- To examine the relationship between organizational learning and organizational innovation

II. LITERATURE REVIEW

Definition of Organizational Learning

In this light, organizational learning, defined as,

“The capability for organizations to create, disseminate, and act upon generated knowledge, can be regarded as a source”. (Auh and Mengue, 2005).

Commitment to Learning

Human beings need to learn new things every day in order to improve their mental and physical health and ameliorate their growth by the help of learning which an internal trend is. We learn from all past experience. All in all, an individual’s commitment to learning and also his/her ability to learn is vital for an organization. (Shalikar, Lahoutpour and Rahman, 2011).

Shared Vision

Shared vision is the discovery of common images about future, which strengthens real commitment in the members of the organization. Vision, points to a clear image and in some cases abstract topics in future that explain why we need to work hard to create such a vision (Shalikar, Lahoutpour and Rahman, 2011).
Open-Mindedness

Open-mindedness is an analytical method for phenomenon and a way to escape from the enchanted perceptions. The main idea of “Open-mindness” by Anthony Rothman who is a modernism thinker- is: “experiences based on wisdom”. Organizations need free vision, free expression and self-activation in order to convert implicit knowledge of the employees to formal knowledge, share the information and spread them within the employees. Such elements get managers prepared for methodology and knowledge management (Dovenport, 1997, 45).

Importance of Organizational Learning

Organizational learning is important to firms for several reasons. Learning allows a firm to renew itself, innovate (Rosenberg 1972; Håkansson 1989; Freeman 1991), and possibly enjoy first mover advantages, for example in form of product designs, new organisational forms and/or faster product development rates than its competitors (Barney 1991b). Knowledge constitutes input into the learning process (Foray&Lundvall 1996), that is, knowledge transfer in many cases is a means to generate new learning and among others an agent’s existing knowledge stock, or the agents’ absorptive capacity (Cohen &Levinthal 1990), is crucial for the ability to learn. Therefore, essential to a discussion of organisational learning is also a study of knowledge resources. Particularly, today where globalization has contributed to eroding efficiency of traditional sources of competitive advantage (e.g. cost and technological advantages), organisational learning and knowledge is essential for differentiating products or services from those offered by competitors. Organisational learning is therefore a source of competitive advantage to firms (Argote and Ingram, 2000).

Firms may choose either an exploration or exploitation strategy to achieve a competitive advantage (Barney, 1991). Knowledge of particular circumstances of time and place is initially local and dispersed among agents in society (Hayek, 1945). The increased specialization may indicate that especially inter-organizational relations and co-ordination with sources of learning external to the firm are important to firms. However, it seeks to identify designs and characteristics of organizational mechanisms which ensure that firms are efficiently attracting and acquiring knowledge both from internal and external knowledge sources, and which ensure that firms efficiently minimize decay of knowledge.

Organizational innovation

According to recent negotiations and discussions about organizational innovation, “producing new products depends notably on research and development issues”. (Kuratko, &Hodgetts, 2004, 172-174).

Wu et al., (2008) suggest that an innovation is defined as,

“An idea, a product or process, or a system that is perceived to be new to an individual”.

Administrative Innovation

Administrative innovation occurs within the administrative processes and has influence on social systems in organizations, which include rules, trends, instructions and communications. (Shalikar, Lahoutpour and Rahman, 2011).
Technical Innovation

Technical innovation entails importing raw materials or equipment from other industrial fields in order to produce new products, which are made radically different from developing the usage of the products or new formulation. For, by combination of several technologies, a completely different product will be presented. (Shalikar, Lahoutpour and Rahman, 2011). Organization’s features and also the existing relations between them. (Liao, 2007-2008).

The relationship between Organizational Learning and Organizational Innovation

Argyris and Schon (1978) believe that organizational learning augments the innovation ability in an organization. Stata (1989) considers innovation as a result of individual and organizational learning and the only permanent competitive privilege factor in a knowledge-based industry.

Moreover, Greve (2005) explains how organizations can learn through other organizations’ innovations. To achieve this, he presents an inter-organization learning competition that makes it possible to investigate the impacts of the source organization’s features and also the existing relations between them. (Liao, 2007-2008).

III. CONCEPTUALIZATION

Analytical model of research is divided into two groups. This model is going to analyze in this research.

![Conceptual framework](developed for research purpose)

Based on this conceptual framework the hypothesis was developed to measure the results.

H1: the degree of existence of organizational learning and organizational innovation is high in private sector organization

H2: Organizational learning is positively related to Organizational innovation

IV. RESEARCH METHODOLOGY

Regarding objectives of this study unit of analysis is the individual staff of the selected private organizations in Puttalam district. The study totally depends on primary data. The primary data will be collected through questionnaire from 200 staff of private organizations by using simple random sampling. The sample data were analyzed according to the descriptive statistics, correlation and regression analysis by using SPSS (19.0)

An empirical investigation is conducted through the structured questionnaire which was adopted from the past studies. From Frank, Kessler, Mitterer and Sammer (2012) organizational learning questionnaire is collected. And the organizational innovation questionnaire is collected from (Skerlavaj, Song and Lee, 2010). The questionnaires were issued to 200 employees of private sector organizations and 192 questionnaires are received.

Research information are collected through five dimensions under two variables.Shared vision, commitment to learning and open mindedness are from organizational learning. These
dimensions are analyzed by each five questions. and technical innovation and administrative innovation are the dimensions of organizational innovation. Technical innovation is measured with seven questions and administrative innovation is measured with four questions.

Univariate Analysis and Evaluation

Central tendency of mean and Standard Deviation are in consideration. The mean value is lying in the range of 1 to 5 and the value of each respondent for a dimension is compared with the medium value of 3. In evaluating the samples as a whole the mean value of the respondent is compared with the medium. The decision rule can be formulated as follows.

<table>
<thead>
<tr>
<th>TABLE I: DECISION CRITERIA FOR UNIVARIATE ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range for decision criteria</td>
</tr>
<tr>
<td>1≤X≤2.5</td>
</tr>
<tr>
<td>2.5&lt;X≤3.5</td>
</tr>
<tr>
<td>3.5&lt;X≤5.0</td>
</tr>
</tbody>
</table>

Bivariate Analysis and Evaluation

The bivariate analysis is to explore the relationship between the two variables. In this context the correlation analysis is carried out to measure the strength of relationship between the variables organizational learning and organizational innovation.

<table>
<thead>
<tr>
<th>TABLE II: DECISION CRITERIA FOR BIVARIATE ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
</tr>
<tr>
<td>r =0.5 to 1.0</td>
</tr>
<tr>
<td>r =0.3 to 0.49</td>
</tr>
<tr>
<td>r =0.1 to 0.29</td>
</tr>
<tr>
<td>r = -0.1 to -0.29</td>
</tr>
<tr>
<td>r = -0.3 to -0.49</td>
</tr>
<tr>
<td>r = -0.5 to -1.0</td>
</tr>
</tbody>
</table>

(Julie Pallant, 2004, SPSS Survival Manual)

Regression Analysis

The line regression explained the pattern of variation of depending variables in relation to values of the independent variable. In this research to find what relationship exists between organizational learning and organizational innovation, the regression is applied. This could be explained though the following equation.

Y = a+ bx
a = Point cutting a cross axis Y, that is value of Y when x= 0
b = Slanting of the regression line
V. DATA PERSSENTATION AND ANALYSIS

The reliability of the instrument was measured using Cronbach alpha analysis.

**TABLE III: RELIABILITY ANALYSIS**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Cronbach Alpha Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Learning</td>
<td>0.872</td>
</tr>
<tr>
<td>Shared Vision</td>
<td>0.733</td>
</tr>
<tr>
<td>Commitment to Learning</td>
<td>0.702</td>
</tr>
<tr>
<td>Open Mindedness</td>
<td>0.756</td>
</tr>
<tr>
<td>Organizational Innovation</td>
<td>0.902</td>
</tr>
<tr>
<td>Administrative Innovation</td>
<td>0.885</td>
</tr>
<tr>
<td>Technical Innovation</td>
<td>0.796</td>
</tr>
<tr>
<td>Overall Reliability</td>
<td>0.816</td>
</tr>
</tbody>
</table>

(Source: Survey Data)

**Descriptive Statistics**

**TABLE IV: ORGANIZATIONAL LEARNING MEAN AND STANDARD DEVIATION OF ORGANIZATIONAL LEARNING**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive statistics</th>
<th>Decision criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Shared vision</td>
<td>4.108</td>
<td>.546</td>
</tr>
<tr>
<td>Commitment to learning</td>
<td>4.176</td>
<td>.553</td>
</tr>
<tr>
<td>Open mindedness</td>
<td>3.884</td>
<td>.671</td>
</tr>
<tr>
<td>Organizational learning</td>
<td>4.065</td>
<td>.675</td>
</tr>
</tbody>
</table>

(Source: Survey Data)

The above table shows the mean value and the standard deviation for the variable of organizational learning. It shows that the shared vision has with mean value of 3.66 with standard deviation 0.528 which shows that high level of shared vision and the dimension commitment to learning which consists of mean value of 3.78 and standard deviation with 0.60. The dimension open mindedness has shown the value of mean as 3.88 and which reveals that there high level of satisfaction on open mindedness.

**Organizational innovation**

**TABLE V: MEAN AND STANDARD DEVIATION OF ORGANIZATIONAL INNOVATION**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive Statistics</th>
<th>Decision Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Technical innovation</td>
<td>4.0655</td>
<td>.6757</td>
</tr>
<tr>
<td>Administrative innovation</td>
<td>4.1419</td>
<td>.6174</td>
</tr>
<tr>
<td>Organizational innovation</td>
<td>4.1037</td>
<td>.5875</td>
</tr>
</tbody>
</table>

(Source: Survey Data)

The above table shows the mean value and the standard deviation for the variable of organizational innovation. It shows that the technical innovation has with mean value of 4.06 with standard deviation 0.6757 which shows that high level of technical innovation and the dimension administrative innovation which consists of mean value of 4.14 and standard deviation 0.5875 which shows that high level of satisfaction on administrative innovation.
deviation with 0.61. It also reflects the administrative innovation is in the high level in the private organizations. The above table shows that there is high level organizational innovation in private sector organization.

All together it can be concluded that there is high level of organizational innovation in private organizations.

**TABLE VI: RELATIONSHIP BETWEEN THE VARIABLES**

<table>
<thead>
<tr>
<th>variables</th>
<th>OL - OI</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlation</td>
<td>0.537**</td>
</tr>
<tr>
<td>Sig</td>
<td>0.000</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level (2-tailed).**

(Source: Survey Data)
The significance is at 0.01 levels (2-tailed), and coefficient of correlation (r) is 0.537. It is found as a strong positive correlation between organizational learning and organizational innovation because the Pearson correlation found here is greater than 0.5.

**TABLE VII: REGRESSION BETWEEN ORGANIZATIONAL LEARNING AND ORGANIZATIONAL INNOVATION**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>a constant</th>
<th>b value</th>
<th>Beta</th>
<th>Sig t</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL - OI</td>
<td>.547</td>
<td>.299</td>
<td>1.549</td>
<td>.630</td>
<td>.547</td>
<td>.000</td>
</tr>
</tbody>
</table>

(Source: Survey Data)
According to that, the Regression Equation is:

**Organizational innovation(Y) = 1.549 + 0.630X**

As indicated by R Square, 29.9% of the variance of organizational innovation is explained by organizational learning. And further the b and beta values are .630 and .547 respectively shows the Positive relationship of the variables.

VI. DISCUSSION OF FINDINGS

These discussions are about the level of organizational learning of private organization employees in Puttalam District. Out of 192 employees, According to the mean value of the organizational learning it is 4.065. According to this mean value it can be concluded that it is at high level of organizational learning of private organizations where the range between 3.5<Xd≤5.0. Whole look at the level of organizational learning of private organizations in Puttalam District is in high level.

These discussions are about the level of organizational innovation of private organization employees in Puttalam District. Out of 192 employees, 161 employees have high level of organizational innovation, while 30 have moderate level. Information regarding organizational innovation measured through two dimensions namely technical innovation and administrative innovation. According to the mean value of the organizational innovation it is 4.1037. According to this mean value it can be concluded that it is at high level of organizational innovation of private organizations where the range between 3.5<Xd≤5.0. As a whole we can say that the level of organizational innovation of private organizations in Puttalam District is in high level.

Based on the hypothesis statement organizational learning is positively related to organizational innovation. (Supported by Shekari and Ahamadi, 2011)
The analysis of correlation analysis between organizational learning and organizational innovation and regression results also discussed below.

A strong positive relationship is found between organizational learning and organizational innovation. The correlation coefficient between these variables is 0.537, which is significant at 0.000 significance level. This correlation is found to be stronger as it is greater than 0.5.

As per results of simple regression analysis between these two variables, organizational learning is found to have a positive impact on organizational innovation with the strength of b value of 0.630. As indicated by R Square, 29.9% of the variance of organizational innovation is explained by organizational learning.

Parameter estimates of the hypothesized relationships between the three constructs of organizational learning and the two constructs of organizational innovation are positive and significant, indicating positive impact of organizational learning on organizational innovation. In other words, higher organizational learning ability will lead to better performance in administrative and technical innovation; hence H1 is supported.

Then findings of correlation and regression analyses empirically support the findings indicate that organizational learning is correlated with organizational innovation. It shows that employees have organizational learning when doing their business operation it will create positive impact on organizational innovation.

The finding reveals the importance of organizational learning among private organization employees for improving their organizational innovation. The findings of the study suggest that the degree of organizational learning can be further increase in order to enhance the level of their organizational innovation.

VII. CONCLUSION AND RECOMMENDATION

This variable organizational learning is analyzed through three variables namely shared vision, commitment to learning and open mindedness. It can be concluded that overall organizational learning in private sector organizations are in high level. From this statement the researcher can conclude that the private organizations see the organizational learning as key for a competitive advantage and for survival.

From the analysis on organizational innovation it can be concluded that both administrative and technical innovations are in utmost best level in private sectors. This is because they involve in ongoing process and come up with the new managerial and marketing innovation very rapidly. And also the private organizations are very keen in first to market and take care of their customers in terms of quick response, modification, quality and flexible. According to that researcher can conclude that organizational innovation have high level impact in private sector organizations.

It can be concluded that there is strong positive relationship between organizational learning and organizational innovation in private sector organizations.

Recommendation

Organizations need to improve the organizational learning to its best because the higher the sharing of vision, the higher the commitment to learning and the higher the open mindedness
promotes higher level of innovation and helps the organization for long survival. The sharing of accumulated experience can also enhance organizational learning ability and foster better performance in organizational innovation. The employees can establish a shared vision among staves with regard to the ideals and goals of the organization through recognizing their common characteristics. Organizational learning can be achieved by cultivating an environment in which the employees can and should continually learn and share their knowledge. Give people a sense of direction based on a shared ambition and linking them to each other and have the people who continually learn from their mistakes and openly communicate with each other.

The fact that the individuals should welcome innovation and flexibility in administrative structure of the organization should be taught to the individuals. The management of organization should break the old traditional structures of thought in people and explaining the necessity of changes in administrative structure for establishing administrative innovation.

The employees should foster an open and creative work environment to create the administrative innovation. Then the team of the employees should be motivated to cope with diversity. By promoting the innovative ideas by the team innovation of organization can be established. The organizations first should ensure that their organizations truly understand their customers’ needs and the organizations should establish collaborative relationship with their business partners. The top level management should concentrate on allocating resources for proper training and development and they can create a culture for change and continuous improvement.

REFERENCES


A Study on the Influence of Promotional Mix and Personal Factors on Urban Consumers’ Buying Decision towards Fast Food Special Reference to Dehiwela Divisional Secretariat Area

S. Thivyaashani S.*, F. B. Kennedy*

*Department of Management, Eastern University, Sri Lanka

Abstract - The modern world has entirely diversified the living patterns of human being. Especially their food behaviour, where most of the people are consuming food from fast food place rather than home cooked food and is a fairly a new food trend in Sri Lanka. Quick establishment of fast food restaurants in all over the country is an evidence for the popularity of fast food among Sri Lankans. This study specially investigates the Influence of Promotional Mix and Personal Factors on Consumers’ Buying Decision towards Fast Food.

The descriptive research was used with the respondents of 200 residing in Dehiwela Divisional Secretariat Area as a convenient sample and the cross-sectional design was used to analyze the collection of data from the selected eight popular fast food outlets in Sri Lanka namely, Burger King, Dominos, Dine –Mor, KFC, Mc Donald, Majestic City Food Court and Pizza Hut. Data was collected through closed ended questionnaires and the analysis was conducted by SPSS with the measures at levels of Univariate, Bivariate, and Multivariate along with Research Hypothesis. The findings of the present study suggest that the Personal Factors is having the strong positive relationship with Consumers’ Buying Decision towards Fast Food and also Personal Factors influencing more on the Consumers’ Fast Food Buying Decision than Promotional Mix.

Keywords Promotional Mix, Personal Factors, Consumers’ Buying Decision, Fast Food

I. BACKGROUND OF THE STUDY

In the 21st century, science has yielded many things to make human life more comfortable and easy at the same time it generated a competitive world and led the people to run their life without having a resting time.

At all these circumstances, people are always looking forward to save the time and effort rather than money. In this struggle for time and effort saving, ready-made problem solving techniques are preferred over self-prepared solutions. In view of changing consumer choice for time saving and convenience, the food industry offered another choice to consumer in the form of fast food. In according to the definition of online Oxford dictionary, fast food can be defined as “easily prepared processed food served in snack bars and restaurants as a quick meal or to be taken away”. Quick establishment of fast food restaurants in all over the country is an evidence for the popularity of fast food among Sri Lankans.

But however, when considering the changes takes place in the food habits, there must be some factors can influence on their consumption decision towards fast food. In today’s competitive environment, to stay in the competitive market, communication is one of the ways to reach the customers. Communication is also one of the tools to achieve the company objectives where is known by Promotional Mix (Fill & Jasmieson, 2011). Even there is Promotional Mix; some
other major factors can influence the consumer behavior. There are four main types of factors influencing consumer behavior such as cultural factors, social factors, personal factors and psychological factors. Many of the researchers had found that mainly age, income, occupation, individual differences in attitudinal and life style characteristics, and knowledge are influencing more on the consumption of fast foods (Philip Mohr, Carlene Wilson, Kirsten Dunn and Gary Wittert, 2007). The consumption is beginning with the buying decision of each individuals and the buying decision of the consumers can influence by the marketing mix and the key factors which affecting on the consumer behavior such as Personal Factors.

**Problem Statement**

In Sri Lanka, mostly in urban areas, the fast food culture is growing as giant and most people adapted to this culture because of the environment as well as the massive number of promotional activities conducted by the fast food outlets and all those can influence an individual personally to make the buying decision.

The previous researches related with Fast Food Buying Decision had found the Promotional Mix takes 37.2% and 30% of the variance thus clearly linking that behavior to a number of Personal Factors like demographic, psychological and lifestyle characteristics.

As far the researcher concerns that a few researches has been conducted in Sri Lanka regarding fast food consumption and how these Promotional and Personal Factors can influence on Consumers’ Fast Food Buying Decision. Researcher examines this problem in this study to fill this empirical gap and get to know how significantly the Promotional Mix and Personal Factors can play role in Consumers’ Buying Decision on Fast Food.

Therefore the specific research question is,

*“Whether the Promotional Mix and Personal factors have been influencing the Urban Consumers’ Buying Decision of Fast Food, particularly in Dehiwela Divisional Secretariat Area?”*

The objective of the study is to understand the factors of Promotion Mix and Personal Factors influencing in the Consumers’ Buying Decision towards the Fast Food. To further understanding, the study is explore, how these factors can influence on theirs’ buying decision. More specifically, the research objectives driving this study as follows:

- To identify the nature of Promotional Mix and Personal Factors influence on Consumers’ Buying Decision towards Fast Food.
- To assess the impact of Fast Food Promotions and Personal Factors on Consumers’ Buying Decision towards Fast Food.
- To find out the more significant variable on which is more effective in Consumers’ Buying Decision towards Fast Food.
II. LITERATURE REVIEW

Mostly the people who are living in the urban area, adapted to this Fast Food Culture. Interestingly, Promotional Mix and Personal factors which have been identified the most influence factors on Consumers’ Buying Decision towards Fast Food. Fast food is fairly a new food trend in a developing country like Sri Lanka.

“Fast food have been defined by Bender and Bender (1995) as a” general term used for a limited menu of foods that lend themselves to production-line techniques; suppliers tend to specialize in products such as hamburgers, pizzas, chicken or sandwiches”.

Promotional Mix

It is an effective tool, the retailers using is to communicate with the customers. The promotional Mix includes advertising, Sales Promotions, Publicity, Personal Selling, Direct Marketing and Word of Mouth and all which very much effective in building a strong relationship between buyers and sellers (Philip Kotler & Kevin Lane Keller, 2007).

Personal Factors

A buyer’s decisions are also influenced by personal characteristics. These include the buyer’s age and stage in the life cycle, occupation, economic circumstances, life style, and personality and self-concept. According to William Applebaum (1951), Personal Factors are defined as a set of individual qualities combined together in terms of sex, age group, color, economic and educational status, occupation, religion, nationality origin, etc.

Consumer Buying Decision

It is a series of choices made by consumer before making a purchase after they have the willing to buy. To having customer buy retailer’s product, retailer should be able to influence customer-buying decision. Consumer buying decision process is consisting of five stages as, problem recognition, information search, and evaluation of alternatives, purchase, and post-purchase evaluation (Pride & Ferrell, 2012).

Therefore the study proposes that the Promotional Mix and Personal Factors are influencing on the Consumers’ Buying Decision towards Fast Food and Considered promotional Mix and Personal Factors as an Independent variables and Consumers’ Buying Decision as my Dependent variable.

To support the Problem of this study the following hypothesis were formulated,

- H1: The Promotional Mix is significantly influence on Consumers’ Buying Decision towards Fast Food.
- H2: The Personal Factors is significantly influence on Consumers’ Buying Decision towards Fast Food.

III. METHODOLOGY

The study is mainly focus on how Promotional Mix and Personal Factors have influence on the Consumers’ Buying Decision Making towards Fast Food especially in Dehiwela Divisional Secretariat area in Colombo District. From the design of the Descriptive study the Cross-Sectional Design is use to analyze the collection of data from the selected eight popular fast
food outlets namely, Burger King, Dominos, Dine –Mor, KFC, Mc Donald, Majestic City Food Court and Pizza Hut. Data will be collected through 200 consumers who are consuming fast food. These numbers of respondents are selected by convenience sampling.

For the study purpose, quantitative technique is used in order to measure the consumers’ buying decision making towards fast food. This study considered customers who are consuming Fast Food as unit analysis. The reliability and credibility of this study is depending on the data collection and it considers the both primary data and secondary data. The behavioral study morally depends on primary data for the empirical investigation and that are collected through closed structured questionnaire. The secondary data collected from past research papers, literature, reports and internet. The questionnaire for this study is structured as close ended questionnaire and “Likert’s five points rating scale” is used to require respondents to order their answers.

IV. RESULTS AND DISCUSSION

Reliability

The Cronbach’s Alpha is 0.852 with respect of all 32 statements, since it is greater than 0.8 and indicating the research information is reliable.

Findings on Research Problem

- The nature of Promotional Mix on Consumers’ Buying Decision

<table>
<thead>
<tr>
<th>Details</th>
<th>Mean</th>
<th>SD</th>
<th>Decision Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising (X₁)</td>
<td>3.210</td>
<td>.9013</td>
<td>High</td>
</tr>
<tr>
<td>Sales Promotion (X₂)</td>
<td>2.850</td>
<td>.9924</td>
<td>Low</td>
</tr>
<tr>
<td>Publicity(X₃)</td>
<td>2.798</td>
<td>1.066</td>
<td>Low</td>
</tr>
<tr>
<td>E-Word of Mouth (EWM) (X₄)</td>
<td>2.952</td>
<td>.9293</td>
<td>Moderate</td>
</tr>
<tr>
<td>Promotional Mix(X₅)</td>
<td>2.914</td>
<td>.6847</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

The Table 4.1 indicates that variable of Promotional Mix has moderate level at its individual characteristic in influencing the Consumers’ Buying Decision.

- The nature of Personal Factors on Consumers’ Buying Decision

The table 4.2 indicates that variable of Personal Factors has high level at its individual characteristic in influencing the Consumers’ Buying Decision.


**Table 4.2: Overall Dimensions and Personal Factors**

<table>
<thead>
<tr>
<th>Details</th>
<th>Mean</th>
<th>SD</th>
<th>Decision Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age and Way of Life (X₆)</td>
<td>3.450</td>
<td>.0665</td>
<td>High</td>
</tr>
<tr>
<td>Purchasing Power and Revenue (X₇)</td>
<td>2.825</td>
<td>.0713</td>
<td>Low</td>
</tr>
<tr>
<td>Life Style(X₈)</td>
<td>3.355</td>
<td>.0676</td>
<td>High</td>
</tr>
<tr>
<td>Personality and Self Concept(X₉)</td>
<td>2.743</td>
<td>.0702</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Personal Factors(X₁₀)</strong></td>
<td>3.133</td>
<td>.0535</td>
<td>High</td>
</tr>
</tbody>
</table>

- **The nature of Consumers’ Buying Decision**

**Table 4.3: Overall Dimensions and Consumers’ Buying Decision**

<table>
<thead>
<tr>
<th>Details</th>
<th>Mean</th>
<th>SD</th>
<th>Decision Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (X₁₁)</td>
<td>3.355</td>
<td>.855</td>
<td>Moderate</td>
</tr>
<tr>
<td>Customer Preferences (X₁₂)</td>
<td>3.106</td>
<td>.793</td>
<td>Moderate</td>
</tr>
<tr>
<td>Trend(X₁₃)</td>
<td>3.823</td>
<td>.872</td>
<td>High</td>
</tr>
<tr>
<td>Physical and Social Surroundings(X₁₄)</td>
<td>3.403</td>
<td>.872</td>
<td>Moderate</td>
</tr>
<tr>
<td>Status(X₁₅)</td>
<td>2.430</td>
<td>1.123</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Consumers’ Buying Decision(X₁₆)</strong></td>
<td>3.288</td>
<td>.7077</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

The table 4.3 indicates that variable of Consumers’ Buying Decision has moderate level at its individual characteristic towards Fast Food Buying Decision.

- **The impact of Fast Food Promotions on Consumers’ Buying Decision towards Fast Food**

Table 4.4 specifies, the significance is at 0.01 levels (2-tailed), and Pearson Correlation(r) is 0.214. It is found as a weak positive influence between these two variables.

Regression analysis indicates, Co-efficient of Determination (R²) is 4.6% and Adjusted R-Square is 4.1% indicates the lower influence between Promotional Mix and Consumers’ Buying Decision towards Fast Food.

**Table 4.4: Correlation and Regression analysis of Promotional Mix**

<table>
<thead>
<tr>
<th>Ind.V</th>
<th>P.c</th>
<th>Regression Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>R²</td>
</tr>
<tr>
<td>Promotional Mix</td>
<td>.214 **</td>
<td>0.046</td>
</tr>
</tbody>
</table>

To further clarify the influence of Promotional Mix dimensions, the study conducted the Partial Correlation and Multivariate analysis.
Table 4.5: Partial Correlation and Multivariate Analysis for Dimensions of Promotional Mix

<table>
<thead>
<tr>
<th>Dimensions of Promotional Mix</th>
<th>Partial</th>
<th>Multiple linear Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>R²</td>
</tr>
<tr>
<td>Advertising(X₁)</td>
<td>.021</td>
<td></td>
</tr>
<tr>
<td>Sales Promotion(X₂)</td>
<td>.040</td>
<td>.197</td>
</tr>
<tr>
<td>Publicity(X₃)</td>
<td>.138</td>
<td></td>
</tr>
<tr>
<td>EWM(X₄)</td>
<td>.425</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.5 specifies, the linear combination of Advertising, Sales Promotion, Publicity and EWM explains 19.7% of the variance in Consumers’ Buying Decision. And Adjusted R² adjusts the value of R² to accurately represent the interest of sample, is 18%. Also p-value is less than 0.05. Therefore, the decision is reject the H₀. The Promotional Mix is significantly influence on Consumers’ Buying Decision towards Fast Food.

- The impact of Personal Factors on Consumers’ Buying Decision towards Fast Food

Table 4.6 specifies, the significance is at 0.01 levels (2-tailed), and Pearson Correlation(r) is 0.683 as a Strong positive influence between these two variables. Regression analysis indicates, Co-efficient of Determination (R²) is 46.6% and Adjusted R-Square is 46.3% indicates an average influence between Personal Factors and Consumers’ Buying Decision towards Fast Food.

Table 4.6: Correlation and Regression analysis of Personal Factors

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Person Correlation</th>
<th>Regression Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>R²</td>
</tr>
<tr>
<td>Personal Factors</td>
<td>.683 **</td>
<td>.466</td>
</tr>
</tbody>
</table>

Table 4.7: Partial Correlation and Multivariate Analysis for Dimensions of Personal Factors

<table>
<thead>
<tr>
<th>Dimensions of Personal Factors</th>
<th>Partial</th>
<th>Multiple linear Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>R²</td>
</tr>
<tr>
<td>Age and Way of Life (X₆)</td>
<td>.397</td>
<td></td>
</tr>
<tr>
<td>Purchasing Power and Revenue (X₇)</td>
<td>.455</td>
<td>.592</td>
</tr>
<tr>
<td>Life Style(X₈)</td>
<td>.678</td>
<td></td>
</tr>
<tr>
<td>Personality and Self Concept (X₉)</td>
<td>.641</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.7 specifies the linear combination Age and way of Life, Purchasing Power and Revenue, Life Style and Personality and Self Concept explains 59.2% of the variance in Consumers’ Buying Decision. And Adjusted R² adjusts the value of R² to accurately represent the interest of sample is 58.4%. Hence p-value is less than 0.05. Therefore, the decision is reject the H₀. The Personal Factors is significantly influence on Consumers’ Buying Decision towards Fast Food.

**Regression Analysis Summary**

\[
Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9
\]

\[
Y = 1.47 + (.01) X_1 + (.04) X_2 + (.14) X_3 + .1X_4 + (.1) X_6 + .18 X_7 + .35 X_8 + .22 X_9
\]

**Multicollinearity Statistics**

Multicollinearity Statistics among independent variables of Promotional Mix and Personal Factors is 1.228 it is lower than 5 therefore the study assured that there is no multicollinearity problem.

V. CONCLUSION AND RECOMMENDATIONS

The study is especially focusing on the current issue of “Fast Food Consumption” in Sri Lankan context. The people who are living in the urban areas where adopted more to this Fast Food Behavior. The infrastructure facilities, environment, people’s education level their occupational and income levels and a busy life style might be the reasons for the establishment of huge number of Fast Food Outlets in Sri Lanka.

The study has under taken the “Promotional Mix” and “Personal Factors” as the independent variables and the “Consumers’ Buying Decision” as the dependent variable and concluded that the both Promotional Mix and Personal Factors have influencing the Consumers’ Buying Decision towards Fast Food and the “Personal Factors is influencing more on the Consumers’ Buying Decision towards Fast Food than Promotional Mix”.

**Recommendations**

The Fast Food retailers have to give more importance to the Consumers’ Personal Factors and then do the Promotional activities in accordance with Consumers’ Age and Way of Life, Purchasing Power and Revenue, Life Style and Personality and Self Concept. It will give positive results for the Fast Food retailers.

The consumption is starting with the Consumers’ Purchase intension, it can be stimulus by internal as well as external factors but however final buying decision can be taken by each consumer individually.

Age was the strongest predictor in Fast Food Consumption, where Fast Food Consumption decreased with increasing age. There would be the changes in the consumption pattern of Children, Teenagers, adult and elders. Therefore every fast food retailers have to give more concern on the Age and how the consumers portray their life, what are the things that they giving more importance in their life related with food consumption those very much essential in order to induce their buying decision.
Life style is the factor having the strong positive relationship with the Consumers’ Buying Decision. Because the life style is tightly bond with the culture of each society. The retailers of fast food outlets have to understand and the search for relationships between their products and lifestyle groups. If it not matches with the culture definitely it will carry huge loss in the business.

The reasons for the weak influence of Promotional Mix on Fast Food Buying Decision can be the poor attractive or emotional advertisements regarding Fast Food, people don’t have enough time to watch advertisements even in television, consumers unaware about the fast food sales promotional activities like free offers, discounts and get to know the free discounts and offers at the last minute due to the poor customer relationship and communication. Hence in Sri Lanka the Franchise Fast Food Outlets like KFC, McDonald’s, Burger King, Dominos, Dine- Mor, and Pizza Hut, not nominated a Sri Lankan Celebrity as the spokesperson for their products so when the fast food retailers once considers these weaknesses and do the recoveries and then retailers can enjoy the benefit from the promotional Mix.

Implications

This study focuses two independent variables of Promotional Mix and Personal Factors to explain the Consumers’ Buying Decision towards Fast Food and to explore the which variable is having more influence on their Buying decision. However, it is explicit that there may be other variables to be considered to explain the variation of Consumers’ Buying Decision, such in Promotional Mix to be consider Personal Selling, and other factors deciding on Consumers’ Buying Decision such as, Cultural Factors, Social Factor and other Psychological Factors. In addition, it is also advisable to extend this study by considering other local restaurants in Sri Lanka and other nations too for further understanding of target Customer’s Decision Making Behavior on Fast Food.

REFERENCES

Relationship between Fun Culture and Work - Life Balance among Software Professionals in Chennai

Vimala B*1, Mohankumar S#2
* Dept. of Business Administration, Annamalai University, India
# Dept. of Business Administration, Annamalai University, India
1athishmom@gmail.com
2vimohaa@gmail.com

ABSTRACT- Fun at work place is desirable and even necessary for letting go of the problems and worries of everyday working life. It is necessary for employees to be productive at workplace and fun at work place make employees productive. Work–life balance is an ordinary challenge throughout the industrialized world. Employees all over the world are facing challenges in balancing work and personal life this paper aims at understanding the relationship between fun culture and work life balance among the software professionals in Chennai. The sample size is 500. It is found that the there is a positive relationship between fun culture and work- life balance.

Keywords Fun Culture, Work -Life Balance, Software Professionals, Chennai

I. INTRODUCTION

The concept of fun in the work place began in silicon valley during the dot com era of the nineties when startup companies replete with technology-driven employees just out of college, began to create a new corporate culture (Van Meel & Vos, 2001). While spending 80 plus hours a week at work employees began changing the office environment to suit their needs. They began making it a place for not only work, but also leisure activities. Fun at work place is desirable and even necessary for letting go of the problems and worries of everyday working life. It is necessary for employees to be productive at workplace and fun at work place make employees productive.

On the other hand work-life balance reflects integration of work demands with family roles, whereas work-family conflict represents incompatibilities between work and family responsibilities because of limited resources such as time and energy (Kahn et al. 1964). Work–life balance is an ordinary challenge throughout the industrialized world. Employees all over the world are facing challenges in balancing work and personal life (Ramachandra and Suman, 2007). Most cited work family policies in work-family literature are onsite day care; help with day care costs, elder care assistance, information on community day care, paid parental leave, unpaid parental leave, maternity or paternity leave and flexible scheduling (Perry et al. 2000).

Fun Culture and Work-Life Balance

Today everybody need and struggle to live healthy lives. However in the depth of a fast paced industry, such as the public relations world, people forget to sit back, relax and laugh sometimes. Both young and older people aim only at work, work, and work. Work world is on top of the people as they climb the ladder of potential for a full time opportunity. At times they overanalyze and stress so much that they get lost in the overall experience. Whether it is a man or woman, dual earner or single earner family, whoever, it is they never get satisfied with the money they earn and find time to relax. So it is relevant to highlight the importance of interjecting fun with the work. If you think about it accurately, 8 hours of our day, 40 hours of
our week, 160 hours of our month and more are spent in the office. Therefore researcher pose
the question, why can’t people make some of that time more fun get people out of their desks
and into a more laid back social setting? Everything the employer does for including fun
whether it is creating fun week or implementing meaningful projects for clients, the though
process revolves around company values.

**Literature Review:** Imagine a work place where people love their work environment, and they
are calm, stress free, and happy all day long obviously, people who are in good spirit will be
much productive than others who are not (Barsoux 1993; Glasser 1994; Templar 2003; Urquhart 2005). And fun is one of the ways to support the mentioned work conditions set
(Barsoux 1993). People in fact, like to be with employees who are friendly and having fun with
them (Glasser 1994; Collinson 2002; Macks 2003; Templar 2003). Therefore, laughter creates
a bond that brings people together (Caudron, 1992; Stauffer, 1999; Craumer, 2000) and this is the main aim of the work life balance programs as previously stated
by Kopelman (1985), which states that spreading fun in the workplace is an essential method in
improving the work life balance and humour in turn is a primary technique of developing funny
environments. The Freibergs 1997 in the description of the fun strategy states that southwest
airlines had adopted, demonstrated the significance of fun in the meaning of a proper quality of
work life approach. It is also further stated that “when you are having fun at work, it does not
feel like work at all” it’s better than tolerable, it’s enjoyable. Having a job that is fun is certainly
worth holding onto, people are more likely to accept ownership of their responsibilities and
much more inclined to go the extra mile and do whatever it takes (Freibergs and Freibergs
1997). Hence many behaviourists had recognized the importance of such a tool in improving
the work ambience and pointed that some degree of fun should be injected in every work
placement (Newstrom, 2002).

Perrins, 2003 examined work life balance is not simply essential for the health and well-being
of individuals, but also cost efficient and stability enhancing for institutions and work
environments. Martins, 1996 found support for the notion that a healthy and playful sense of
fun serves as a moderator for the aversive effects of stress on health and well-being. Broussine,
Davies and Scott, 1999 conducted interviews with social service workers and found evidence
at fun is used as a means of coping with distressing and threatening events.

**Purpose of the Study**

The purpose of the study is to examine the relationship between the fun culture and work-life
balance. Findings from the study will be useful to software professionals. Since the nature of
job in software industry is very stressful, it is more important to introduce more workplace fun.
Fun and entertainment are becoming increasingly important in almost all uses of information
technology (Wolf, 1999; Pine II and Gilmore 1999; Monk, Hassenzahl et al. 2002). The
entertainment industry is expanding rapidly, and the number of crossover activities between
various media, such as movies, television, computer games, toys and the web is exploding. No
longer do people see only stand-alone entertainment products, such as video games and toys.
So it is essential to inculcate some form fun in the work place.

**II. RESEARCH METHODOLOGY**

In order to explore the relationship between fun culture and work-life balance, among software
professionals in Chennai, a questionnaire was developed. The questionnaire includes standard
instrument on fun culture scale developed by Fredrick w. becker 2012 and Work-Life Balance scale developed by Elaine St. James 1994. The survey was conducted among the software professionals with help of this questionnaire.

**Area:** The study was conducted in Chennai. Chennai has the maximum number of software concerns. The software industries in Chennai have extended their business in all areas namely, software testing, development, programming, import and export, and maintenance of projects.

**Sample Size:** Hence by applying formula the estimated minimum sample size required was 453. Keeping the non-response rates as 10 percent, the number of respondents was calculated as 498. Some respondents requested the researcher to send the questionnaire through email and also circulate in hand form. Finally 150 respondents received by email and 370 received in hand form. Only 520 respondents received on time. The elimination of cases with missing data resulted in 500 completed questionnaires. So 500 were taken for the research. The sample size obtained by applying formula was 498 and it is rounded off to 500.

**Sampling Technique**

The researcher adopted the convenient sampling method for selecting the sample. Researchers generally use convenient samples to obtain a large number of completed questionnaires quickly. The questionnaire were distributed personally and also through email.

**Limitations**

The survey was conducted in Chennai. So the findings may not be generalized to all the software industry in other places. This is because the there are other factors like climate, working conditions and legal framework vary from one place to other. But the findings may imply some meaningful suggestions to the software industry in general.

### III. RESULTS AND DISCUSSION

**Fun culture**

It is defined as the initiatives taken by organization to their employees. People seek fun at work (Ford, Newstrom &McLaughin, 2004; Kark et al., 2007). Fun activities are the enjoyment of pleasure, particularly in leisure activities. Fun is an experience short-term often unexpected, informal, not cerebral and generally purposeless. In this study the fun culture questionnaire has four dimensions such as fun activities, individual fun, co-worker relationship and experienced fun. Fun activities represents fun encountered during work. Individual fun is fun from the perspective of the individual. Co-worker fun refers to fun with the peer group. And the experienced fun refers to the extent to which a person perceives the existence of fun in their workplace.

<table>
<thead>
<tr>
<th>Fun activities</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>277</td>
<td>55.4</td>
</tr>
<tr>
<td>Medium</td>
<td>216</td>
<td>43.2</td>
</tr>
<tr>
<td>High</td>
<td>7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Source: Primary Data
Table 1 explains the level of fun activities of respondents. It shows that 43.2 percent of the respondents have medium level of fun activities, 55.4 percent of the respondents have low level of fun activities and only 7 percent of the respondents have high level of fun activities. The result is in coherence with the findings of the study by Ford et al. (2003) which demonstrates that some fun activities are more prevalent in organization than others.

Table 2: Level of Individual Fun of Respondents

<table>
<thead>
<tr>
<th>Individual fun</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>107</td>
<td>21.4</td>
</tr>
<tr>
<td>Medium</td>
<td>373</td>
<td>74.6</td>
</tr>
<tr>
<td>High</td>
<td>20</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 2 denotes the level of individual fun of respondents. It is found that only 4 percent of the respondents have high level of individual fun. 74.6 percent of the respondents have only medium level of individual fun. It is found the 21.4 percent of the respondents have low level of individual fun. It is noted that the findings is in coincidence with the findings of the earlier study conducted by Johan Huizinga which demonstrates that activities perceived as fun are often challenging in some way. When a person is challenged to think consciously, overcome challenge and learn something new, they are more likely to enjoy a new experience and view it as fun.

Table 3: Level of co-worker relationship of respondents

<table>
<thead>
<tr>
<th>Co-worker relationship</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>65</td>
<td>13.4</td>
</tr>
<tr>
<td>Medium</td>
<td>382</td>
<td>76.0</td>
</tr>
<tr>
<td>High</td>
<td>53</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Table 3 explains the level of co-worker relationship fun existing among the respondents. It is revealed from the table that 76 percent of the respondents have medium level of fun from co-worker relationship. 10.6 percent of the respondents have high level of fun from co-worker relationship and 13.4 percent of the respondents have only low level of fun from co-worker relationship. Several studies measuring cohesive workplace friendship found similar results to socializing in the workplace, with friendships providing increased job satisfaction, increased organizational commitment and decreased turnover intention.

Table 4: Level of Experienced Fun of Respondents

<table>
<thead>
<tr>
<th>Experienced fun</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>114</td>
<td>22.8</td>
</tr>
<tr>
<td>Medium</td>
<td>361</td>
<td>72.2</td>
</tr>
<tr>
<td>High</td>
<td>25</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Table 4 portrays the level of experienced fun of respondents. It is noted that only 5 percent of the respondents have high level of experienced fun. Among the remaining 95 percent of the respondents 72.2 percent of the respondents have medium level of experienced fun and 22.8 percent of the respondents have only low level of experienced fun. Karl et al demonstrated that personality is related to attitudes toward fun and experienced fun.
Table 5: Level of Work – Life Balance of Respondents

<table>
<thead>
<tr>
<th>Individual fun</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>135</td>
<td>27.0</td>
</tr>
<tr>
<td>Moderate</td>
<td>220</td>
<td>44.0</td>
</tr>
<tr>
<td>Good</td>
<td>145</td>
<td>29.0</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 5 describes the level of work-life balance of respondents. It is found that 27 percent of the respondents have poor work-life balance. The work–life balance of 44 percent of the respondents is found to be moderate. It is also found that only 29 percent of the respondents have good work-life balance.

Table 6: Relationship between Fun Culture and Work-Life Balance

<table>
<thead>
<tr>
<th>Fun culture Dimensions</th>
<th>Work-Life balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fun activities</td>
<td>0.176**</td>
</tr>
<tr>
<td>Individual fun</td>
<td>0.176**</td>
</tr>
<tr>
<td>Co-worker fun</td>
<td>0.124**</td>
</tr>
<tr>
<td>Experienced fun</td>
<td>0.203**</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 6 mentions the relationship between fun culture dimensions and work-life balance. H0: There is no significant relationship between fun culture dimensions and work-life balance.

To test the hypothesis, Pearson’s correlation coefficient test was conducted. It is found that there is a positive correlation between work-life balance and all the dimension of fun culture. Fun activities and individual fun have positive correlation with work-life balance with the r-value of 0.176. The co-worker fun has positive correlation with work-life balance and the r-value is found to be 0.124. It is also found that there is a positive correlation between experienced fun and work-life balance and the r-value is found to be 0.203. Since there is a positive correlation between fun culture dimensions and work-life balance the hypothesis gets rejected. The findings of the study are in concordance with the earlier studies conducted by Zemke, Raines and Filipezak (2000). They assert that generation X employees want work to be fun and are interested in work-life balance. Millennial are also interested in fun in that they gravitate to friendly, casual work environments (Lowe, Levitt, & Wilson, 2008).

Findings

- There is a positive correlation between fun culture dimensions and work-life balance
- Only 7 percent of the respondents have high level of fun activities.
- It is found that only 4 percent of the respondents have high level of individual fun.
- 10.6 percent of the respondents have high level of fun from co-worker relationship
- It is noted that only 5 percent of the respondents have high level of experienced fun.
- It is also found that only 29 percent of the respondents have good work-life balance.
IV. CONCLUSION

To sum up the study, it is found that there is a positive correlation between fun culture dimensions and the work-life balance of the respondents. Increase in fun culture of the workplace is likely to increase the work-life balance of the respondents.

REFERENCES

Emerging Knowledge from Sri Lankan Tamil Fiction for Sustainable Regional Development: A Study on Selected Pieces

K. Shriganeshan

English Language Teaching Centre, University of Jaffna
kshriganeshan@yahoo.com

Abstract - Regional development requires much of pre-planning and needs to consider various factors like available natural resources and the way they could be exploited with the knowledge available and emerging to look for some new development. However, destruction of the environment and natural resources is the main danger that the modern world has to face. There is an urgent need for institutional reform within modern society to safeguard the environmental resources and to maintain the ecological balance. Environmental sociologists have different views as to which institutional traits can be held primarily responsible for the environmental crisis. Further, there are other aspects like the effects of War-bereavement, loss of habitat, displacement and exile which slows down the progress with regard to regional development of our country. The life in the latter part of the 20th Century became very much painful and suffering due to the poor economic and deteriorating political conditions that prevailed in Sri Lanka. The traditional concepts of life held by the people further aggravated the people’s struggle for existence in the conflict-ridden parts of the country. The ignorance of the people and their fear psychosis led them to face more struggles to find a peaceful life. In order to understand the ground situation for planning for regional development there is a need to discuss what happened in the past especially during the war. The writers who faced the challenges have recorded their experience and the future agents could find suggestions for new development. The knowledge emerging out of the analysis of the short stories under study would be helpful to go forward towards regional development. The pieces written by Sri Lankan Tamil writers available in translation which appeared in Lute Song and Lament, A Lankan Mosaic, Tamil short stories from Sri Lanka are taken for critical analysis. This paper attempts to highlight the writers’ concern about the safety of the environment and the ecological balance of natural resources which could be the base for new understanding for sustainable development.

Keywords Struggle, Challenges, Fear psychosis

I. INTRODUCTION

Regional development depends on the natural resources available in the area. Though modern society is able to utilize facilities accessed through the inventions and discoveries of science and technology the villages are lagging behind. The ecological balance is also lost due to environmental pollution. There is an urgent need for institutional reform to safeguard the environmental resources and to maintain the ecological balance. All the social reformers, writers and artistes have a duty towards creating awareness among the public to safeguard the environment and many have indicated their concern for the safety of the earth from pollution and maintenance of ecological balance through their pieces. Environmental sociologists have different views as to which institutional traits can be held primarily responsible for the environmental crisis. The capitalistic or industrial character as well as the complex, highly
administered technological system of modern society is the cause for this depressing state of affairs. Many Marxist critics blame the social system which is based on the capitalist structure for the negative and destructive attitude of the people who do not have any concern for the safety of the Globe and its environment and the resources.

**Negative impact on the regional development due to communal conflicts**

This paper tries to look into four short stories namely *Gone with the soil* by Ottamavadi Arafath, Despondency by Al Azhoomath, *Kosalai* by Ranjakumar, and *Watering Time* by Senkai Aaliyan originally written in Tamil by Tamil and Muslim writers and translated into English by S.Sivasekaram, S.Pathmanathan and A.J.Canagaratne. They appeared in the collections titled *Lutesong and Lament* edited by Chelva Canaganayakam (2001), *A Lankan Mosaic* edited by Ashley Halpe, M.A.Nuhuman and Ranjini Obeyesekara, (2002) and *Tamil short stories from Sri Lanka* (2013) translated and edited by S.Pathmanathan. The Anthologies are represented by many Tamil and Muslim writers and the selection includes some expatriates, too. Most of the stories deal with the effects of War-bereavement, loss of habitat, displacement and exile. The writers have made it a point to record the sufferings of the people in their pieces so that there would be some awareness about the loss caused by the War. Mostly all these stories were written during a period when the country was in turmoil after the ethnic riots (1983) and the subsequent civil war which lasted till May 2009 between the armed forces and the militants belonging to the various movements which fought for the Tamil Cause.

In Sri Lanka, ethnic unity has been marred by many communal conflicts ever since Independence (1948). Subsequent political crisis such as the act of Pakistani and Indian disenfranchisement (1949), the Sinhala Only Act (1958), the Republic Constitution (1972) and the Executive Presidency (1978) contributed to the divisions and misunderstanding among the communities living in the country. The peaceful atmosphere for living in harmony in Sri Lanka was disturbed by continuous riots and discriminatory rule of successive governments. Out of this crisis emerged the Tamil youth militancy which turned out to be a force to be reckoned with.

They also caused a terrible negative impact on the ecological balance and purity of the environment and further it contributes negatively for the regional development. These situations are recorded in these stories. The knowledge gained from the analysis would pave the way for finding out social reasons to look for real solutions. An analysis is made here on the four selected stories in detail for the purpose of this paper.

**The dangerous forces destroying the lives of the people**

Making a poignant and accurate portrayal of the last days of a father who refuses to leave his home at the critical phase of the War, Arafath raises a voice in *Gone with the soil*. The inhabitants of the area had to leave because of the movements of the militants and the security forces. The peaceful atmosphere of the village is gone. The symbolic effects of the Sodhayan Hill which stands for the stable life of the people and the Tamarind tree in front of the shop owned by the narrator’s father providing shade, never bowing before wind or rain speak a lot about people’s freedom. The cultural symbols like the Banyan tree that was home to the god Bhairava loses its sanctity due to the presence of the armed forces. The soil famed for the toil of the people and their generosity loses its splendour and majesty because of the forces which have the least concern for the people’s pride and dignity.
“When the armed struggle was at its peak, this very hill served as the meeting place as well as the abode of the militants, and camps sprouted at its top.” (p.248, Halpe, 2002)

The father of the narrator of the story was hardworking and helpful. A professional businessman with many a skill is now a bedridden feeble old man who has lost his spirit and will. If the people who work hard lost their spirit there would not be any progress and development. But the story ends with a positive note: the narrator who answers the question raised by the father about the visibility of the Hill. The author himself symbolizes the dangerous forces which destroy the lives of the people as follows:

The beautiful village became a captive of uncertainty. The people lost heart and abandoned the village and become alienated from it. White ants made a hive in the taproot of the Tamarind tree. Alien war elephants lay all over the grazing grounds and prevented us from enjoying the waters of the rushing river. They encircled the people and suddenly crushed them to death. They yelled at us and demanded that we point a finger at any frog that croaked in its own voice. Our young women suffered death by rape in the grip of the elephants. p. 248. Halpe et al, 2002.

Conflict caused by displacement

Al Azhoomath underlines the personal problem of an individual character in Despondency but it portrays the suffering and alienation of the plantation worker who is forced to move to the city because of the riots and other personal problems. A sense of up-rootedness is felt by the main character and, at the same time he yearns for a sense of belonging. He says: “Every village is my own” and my heart whispered, “Matale is my own town.” (p.252, Halpe, 2002). The man was born in Matale but he is an estate worker’s son whose forefathers were brought from India. He had lived there with his parents till he was 17 years old. Then he proceeded to Colombo. Later, he makes visits to his mother on certain occasions and during the 1958 and 1983 riots. But he makes a visit now to see the land which he is able to get on lease because of the Sirima-Shastri Pact. He shows a feeling of nostalgia while he makes a visit to his town by motorbike. Though he was born in that town it is not his own. He has expressed much feeling for the rubber and cocoa trees, hills and valleys, the tributary, the Kali temple, the dispensary and many other things and places which are very familiar to him. He tries to establish a relation with these places and objects in order to claim some rights. Even the people who were living with him during his childhood shower upon him a lot of affection. In a way, he is able to sustain the human relationships which he missed during the last several years. Having led an alienated life in the city he shows an interest in village life. However, he can’t continue further. There is a conflict between his present state of life and his liking for the life of the past. There is no peace of mind for the character as he was uprooted from the village.

No concern for the damage caused to the environment

When the war between the militants and the Sri Lankan forces was at its height in the late eighties Kosalai was written by Ranjakumar. The plot of the story centres on the young boy who joined the militants for political reasons. He has no concern for the damage caused to the environment by his attacks but the writer has the concern for the environmental safety as he goes on depicting the plight of the mother who has to struggle for her living and to see her sons prosper in their lives. The story is based on the character Kosalai, mother of the epic hero Rama who went to the forest and had to fight the Rakhsas King of Lanka Ravanana. Kosalai is
worried over Rama’s departure from the Palace, their home and the writer tries to extend the name of the character that he depicts to have the same effect on the portrayal.

The story has the following to record in relation to damages caused by the explosions of mines to the environment.

The village womenfolk told Amma that the boys were using the fields, the palmyra groves and the uplands-so familiar to Amma-for training in exploding bombs.

Could Seelan be one of them, she thought greatly alarmed. But not even a dog had told Amma that Seelan had been seen. (p.100, Kanaganayakam, 2001).

The destruction of the jungle and the wild life

A herd of deer comprises as the main characters in the short story, Watering Time written by Senkai Aaliyan. The herd of deer lives and moves around the jungle looking for water and is terrified by the violent activities of the humans with their bombs and shells terrifying the animals around. With a single plot of the animals’ suffering the writer exposes the atrocities of the humans in the name of fighting for their own rights without having any concern for the rights of the poor animals. Thus the ecological balance is disturbed. The writer powerfully expresses the feelings with the following lines.

The peace of the jungle was disturbed by the strange sound emanating softly some distance away. Kalaiyan, which was grazing the grass that had turned brown because of the continuing drought, lifted its head majestically. It pricked up its ears and turned in the direction from which the sound came.

The writer depicts how the wild life is threatened and destroyed by the atrocities of the humans through their heartless minds.

You can’t approach Kunchukulum for water. The human beings won’t spare us. The animal taking a sip will fall a prey to their hunger. They are heartless. Their crude guns and traps have taken a heavy toll of wild life.

The portrayal is done throughout the piece how the environment is polluted by the explosion of bombs and thus the expected regional development is disturbed by the continuous attacks made by the war mongers.

Yet another day passed. The animals camped but could not find a drop of water. Kalaiyan’s herd could not endure the thirst. The sun was going to the west. The sound of exploding bombs rent the air. The bombers dropped bombs on the village and the jungle. The people wailed. Houses were razed to the ground. Human flesh was strewn on the streets. The survival instinct got the better of the villagers. They were leaving with whatever belongings they could lay hands on.(p. 106,Pathmanathan, 2013)

Thus, the destruction of the jungle and the wild life by the human beings disturbs the ecological balance of the world. The peaceful atmosphere is also broken.

The environment too is polluted by the bombs and the gases they emit. The writer has ingeniously moulded the characters and the plot in order to reveal the atrocities of humanity in general and the war-lovers in particular. In this manner, he contributes his part to make some awareness among the people how war would disturb the regional development. Therefore, it is
highlighted that the social and cultural factors contribute much to develop the region and the writers would be supplying their intellectual output to put the things in order.

II. CONCLUSION

The pieces become literary evidences in exposing human suffering through the issues discussed and the indirect impact due to the pollution of the environment and the loss of ecological balance. The ignorance of the people and their fear psychosis led them to face more struggles in their efforts to find a peaceful life. This state of affairs would not provide the necessary atmosphere for the expected regional development. Further, humans are trapped by life itself like the old man in Gone with the soil, and the man in the story Despondency. All the characters seem to be captives of many social agents which have no social commitment. Their struggle for a better life is to be taken care of by the so-called forces in the future. The mother in Kosalai suffers for the son’s misconduct which is created by the social agents which move in the background. The animal character in Watering time too struggles due to the inhumane activities of the humans. All these institutions have not got any dedication towards the society and the environment and are not worried over the loss of ecological balance. More than the scientists and the researchers in this field it is the writers’ duty to make awareness among the public through their writing about what we have to do with our mother nature. With the resources in the region the development can be taken forward. But the ignorance of our people with regard to human relations with the political and social agents functioning behind the scene has to be taken into consideration. The socio cultural aspects would definitely help us to identify the causes for the loss of life and destruction. If the writers’ thoughts are taken care of – that is the emerging knowledge from the writers- the expected regional development would see the daylight. The stories taken for analysis suggest that the prime concern of the humanity should be towards the safety of our earth and that concern would only provide the required atmosphere and mood for future plans for regional development. There should be peace and harmony and the negative and dangerous elements should have been identified and avoided or neutralized for the sake of progress to be achieved in the country economically and socially.

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List of Authors

Abeysinghe, L.A.S.M., 25
Alsath, M.U., 25
Aqeela, M.S.F., 49
Arulpragasam, A., 25
Charles, E.Y.A., 18
Genoosha, N., 25
Illangasinghe, S.P.M.S., 25
Janani, S., 32
Kaluthotage, S., 32
Kartheepan, K., 25
Kennedy, F.B., 59
Kumara, K.W.R.C.P., 09
Madusanka, I.W.P., 25
Mohankumar, S., 67
NseAbasi NsikakAbasi Etim, 01
Pushpakumari, M.N.M., 25
Raguram, S., 09
Sathaananthan, T., 41
Sharminy, B., 25
Shriganeshan, K., 74
Suthakaran, A., 18
Thivyaashani, S., 59
Victor, L.D., 49
Vimala, B., 67