
A Study on Effects of Mobile Phone Use Practice among College Students

Sowmya H, Prasanna Kumar C*, Jyothi P S

Department of Social Work, G.F.G.C. Vittal, Bantwal Taluk, Dakshina
Kannada District, Karnataka State, India, 574 243

Email: *cpkmsw@gmail.com

Abstract: *In today's technically advanced society, mobile phones have become indispensable communication devices especially among youth. In two or so decades of its presence, mobile phone culture has been developed in which mobile phones are used for starting and maintaining relationships, exhibiting individual identity and belongingness, claiming membership of a social group and thus emphasizing personal status. The impact of cell phones on today's youth is enormous. In this regard an attempt has been made to examine the effects of mobile phone use practice among college going students of Bantwal Taluk, Dakshina Kannada district of Karnataka State. The objective of this study was mainly to address the effects of mobile phone on the academic performance, social relationship and health of the respondents. A descriptive research design was considered keeping in view of the objectives of the study. The findings of the study reveal that mobiles have become an important social technology for youth. Mobiles are becoming a crucial element being part of their life and mobile users become agitated when they are away from mobile phones. Mobile phone makes them secure at their place and thus reduces stress level as they can communicate with others instantaneously. But surely sleep is disturbed as they keep on checking for messages / calls which can be hazardous to their health. The study recommend to sensitize students on adverse effects of over use of mobiles and providing right knowledge on appropriate and wise ways of using mobile in their academic development. It also suggests that appropriate regulations to be laid down in educational institutions in fostering right behaviour among students on college campus in using mobiles.*

Key Words: *Mobile Phone, Youth, Communication, Technology*

1. Introduction

Cell phones or mobile phones have become inherent part of our day to day life. Human beings need for communication in terms of belongingness is facilitated with the use of cellular phones. Cellular phones have had a major impact on our lives and the way that we perform everyday tasks.

In 1940s Motorola developed a backpacked two-way radio, walkie-talkie and a large hand held two-way radio for the US military. The same technology developed further and produced the mobile phone that we know today. Dr. Martin Cooper of Motorola is considered to be the inventor of first practical mobile phone. At present mobile phone is changing the norms, etiquette, proforma, conventionalities and rules of communication. Cell phones are the way to stay connected with family and friends, access the internet sources, online shopping, and navigate the route and so on.

Students use this hand held device for initiating and maintaining relationships as a facility of easy communication with the world. It provides endless opportunity for entertainment, exhibiting their identity and belongingness, claiming membership of a social group and also emphasizing their status without interruption of their movements and distances. The cell phone plays a role in students' identity formation - fostering a sense of self-esteem, showing social connectedness, and providing a teen with an independent means of communication. The impact of cell phones on today's youth is immense. Cell phones are becoming a common sight in educational institutions. Mobile phone turned from technological tool into a social tool.

College authorities are more concerned with the use of mobile phones on college campus because mobile phones are source of disruption and peer pressure. Colleges in different states of India have responded to this trend in different ways. Many of them have banned the use of mobile phone inside the campus whereas some colleges asked the students to use their cell phone only in canteen or the common room. Some colleges have provided individual lockers to students for nominal fee charge. But if teachers find them using cell phone during class hours, phones are being confiscated, parents are informed and fine is also imposed. Most academicians strongly agree that cell phone usage in college disrupt the teaching process. Whatsoever, it can also be observed from our routine that mobile phones have become a basic necessity for college students that they cannot be without it.

2. Positive Effects of Use of Cell Phones by Students

Mobile phones function as tiny computers, with internet capabilities, games, pictures, videos, texting and email etc. along with oral communication. Cell phones for youth are mobile communication devices that they can use in a

wide variety of ways. There are many concerns about the impact of cell phones on youth, at the same time there are many advantages as well.

2.1 Communication

The most obvious benefit of cell phones for students is their ability to help students communicate. It connects students with their peer group so that they can share information which assists them in the process of learning. Many applications have been developed so that students stay connected with their class mates and peer group frequently and also with their family members when they are outside.

2.2 Improved Personal Security

Cell phones provide security for students. The parents who by and large worry about their children would often keep in touch when they are away from them. Indeed, many parents argue that cell phones keep students at safer circumstances. The presence of a cell phone with student ensures that he/she can call parents or emergency personnel in the case of an unforeseen emergency. For the parents, knowing that their child can easily communicate with them at any time offers peace of mind. They have also used cell phones with video and phone capability to record criminal events, making them into reporters and helping police identify criminals and observe exact events in a crime.

2.3 Assisting Teachers

It is a device which connects students with their teachers whereby teachers can deal various issues pertaining to their students and provide them timely help. Other aspects such as attendance issues, sharing information in time of emergencies, coordinating teaching learning activities are also possible these days.

2.4 Education

On some college campuses, students can organize their schedules and take quizzes through their phones. In doing projects or during times of uncertainties, they can easily call their classmates or teachers to consult them and solve any questions that they may have. Students can browse e-resources, which may be used in the preparation of assignments, notes, projects etc. More often students try to solve problems themselves by searching online when they have a difficulty with their course studies. They are easily connected to teacher through mobile for consultation beyond class hours. They can have more discussion on the concerned topic and also can exchange course

content instantly. Educators can also teach students how to use their phones as research tools, which may encourage students to take more initiative in their own learning.

2.5 Youth Engagement

Cell phones have also been leveraged as an important tool for youth engagement in developing country like India. Nowadays, even in remote places network is available and cell phones are becoming a way even for students to connect with the global world and give their opinions on issues that affect them.

2.6 Socialization

Young people's ability to communicate is extended. Now students can reach classmates, friends, peer group and the family members on a daily basis with cell phone.

2.7 Capture Memories

The college experience is one of the most memorable in most students' lives. Students can capture pictures and preserve them and also upload to social networking sites.

2.8 Social Networking

Making social connections is an important aspect of college life. Cell phones allow college students to have an always on connection to their social network. They can send images, messages, documents, and access websites such as Facebook and so on with their friends at any time.

3. Negative Effects of Mobile Phones on Students

Along with the positive effects of the mobile use there are several negative repercussions associated with it. As the technology of cell phones is increasing rapidly, the negative effect on students is growing fast as well.

3.1 Classroom Distraction

The biggest lament of teachers with regard to cell phones is that they lead to student distraction and off task behavior. If students bring cell phone to the class and if it is not silenced, cell phone can ring during class, drawing everyone's attention away from the lesson and disrupting the flow of learning. There are also chances that the students may use the cell phone for inappropriate purpose in the class. Many teachers worry that this added distraction negatively impact on students' school performance as it stops them from dedicating their full attention to their studies.

3.2 Negative Impact on Studies

It is true that mobile phones can help students in studies but only if students use them wisely. Most of the students become addictive to mobile phones and do not focus on study. They are found playing games, chatting with their friends and watching movies and involved in other unimportant stuff. If students are busy keeping their eyes on their mobile phones at all times, they won't get time for study which would lead to poor grades. Texting in short, spontaneous conversation limits the development of ability to converse in complete thoughts and form complete sentences. Excessive use of texting language leads to change in the language even in writing such as - eg, dat, c, wat, u, der, and so on.

3.3 Engage in Inappropriate Behaviour

Cell phone while useful, many of its features can also be used to engage in inappropriate behaviours. Because of cell phone's portability and discrete nature of camera there is a danger that students may take inappropriate pictures quickly without the knowledge of the person being photographed and use them inappropriately. This stuff may get uploaded into social media, later this may be used for unethical purposes. Students are dragged into violent games such as blue whale challenge which may also pose their life in danger.

3.4 Reduce Cognitive Ability

Students may develop short attention span attitude by weakening their focus which may affects their awareness eventually may lead to passive mind. They may forget things easily and create dependency on mobile for quick fix (e.g. even for simple arithmetic calculation mobile calculator application is used)

3.5 Sexting

Sexting is sending, receiving, or forwarding sexually explicit messages, photographs, or images, between mobile phones of oneself to others is a new teen trend. At later stage if this stuff is uploaded to social networking sites, they may have to face the bad consequences. Teens often fail to recognize the long-term implications of such inappropriate behaviors and they engage in the behavior without considering the future consequences.

3.6 Accidents

Mobile phones lead to a lot of accidents. As some students may exhibit risk taking behaviour there is all possibility of accident if they are talking on the mobile phone while driving because they are having half attention on the road. It may also happen when they concentrate over mobile phone when walking on roads. Even students may risk their life while taking selfies by staying at dangerous sites.

3.7 Health Risks

The mobile phones have a negative impact on health of an individual.

3.7.1 Mental Health: By measuring the link between cell phones and mental health, it is found that teens who have used cell phones the most were more likely to be anxious and depressed.

3.7.2 Strain on Eyes and Ears: This results from focusing continually on a small screen and talking over phone for long hours. The habit of watching mobile in dark (putting lights off) may initially cause dry eyes and lead to extensive strain to eyes.

3.7.3 Bacteria: Owing to the close proximity to the mouth where germs can be passed from breathing, coughing and sneezing, most cell phones are crawling with bacteria. Additionally, many people use their phone everywhere, even in the bathrooms, washrooms.

3.7.4 Disturbance in Sleep: Some students use cell phone till late night. This behaviour not only takes away their sound sleeping need but also they are more likely to be tired and will be less able to focus throughout the day.

3.7.5 Psychological Effects: Switching off phone might cause anxiety, irritability or sleeplessness to those who have been addicted to it. It can change in the sleep cycle due to late night usage of mobile phone. They may feel the loneliness or emptiness when there are no calls or messages even for a short while.

3.7.6 Other Issues: Excessive use of cell phones may result in fatigue, difficulty in concentration, headache, pain in neck, back pain, pain in fingers, infertility, brain tumors and low sperm counts. Chances of Alzheimer's disease, leukaemia, ear defects, and blurring of vision too are noticed to be higher in cell phone users.

3.8 Over Expenditure

Mobile phones have become status symbol in college campuses. Now a days, cellular manufacturing companies are also constantly coming up with new models, software and many more features in order to attract more buyers. Due to peer pressure students may get tempted to buy newest mobile phones even if their old ones are still functioning sufficiently well. This leads to incur unnecessary expenses without consideration. They install new features and keep their handsets up to date, spending more money and time lavishly.

3.9 Addiction

In today's world our youths are exposed to technology. In a time where instant gratification is the norm and the cell phone is an item that no youth can possibly do without, they are suffering more and more from "cell phone addiction". K.S. Young (1998) categorized mobile addiction to five specific subtypes such as Cyber-sexual addiction (use of adult chat rooms or cyber-porn); Cyber-relationship addiction (over involvement in online relationship); Net compulsions (online gambling, online shopping, online trading) Information overload (compulsive web surfing or searches) and Computer addiction (obsessive computer game). It is also evident in contemporary society that college students are getting hooked to pornography, internet gambling, games, online shopping, searching for unimportant information and chatting for long hours.

4. Research Methods

The present study intends to address the effects of mobile phone on the academic performance, social relationship and health of the respondents. A descriptive research design was considered keeping in view of the objectives of the study. The sample comprises of 80 college going undergraduate students from four Government First Grade colleges of Bantwal Taluk of Karnataka state. 20 students from each college were selected by using simple random sampling technique for the study. Questionnaire and an interview schedule were framed for data collection. The respondents were contacted personally to elicit the required information. Responses were recorded on the basis of interview schedule as well as observation. Data were tabulated and results were given in numbers and percentages.

5. Results and Discussion

5.1 Personal Profile and Attitude towards Mobile Phone Usage of the Respondents

It is clear from the study that, as many as 78% respondents are females and remaining 22% respondents are males. It is obvious that the influence of technology is increasing in rural areas as 96% of the respondents are from rural background, who own mobile phone during their educational phase of life.

Table: Attitude of Respondents towards Mobile Phone

Attitude	Agree	Undecided	Disagree	Total
Indispensable part of life	57.5%	26.25	16.25	100%
Life could not go on as normal	65%	16.25%	18.75%	100%
Feel more secure and reduces stress level	48%	30%	22%	100%

Above table makes it clear that majority 57.5% of respondents agreed that mobile phone is an indispensable part of their life and 26.25% of them have undecided with the statement made and 16.25% of the respondents disagree with it. Again 65% of the respondents opine that their life could not go on as normal without mobile phones and 16.25% of the respondents selected undecided option and remaining 18.75% of the respondents disagree with this statement. It is explicit from the above data that mobiles have become an important social networking technology for youth and mobiles are becoming a crucial element and indispensable part of their life. Today it has become a basic necessity for college students that without which they cannot lead normal life. The study also indicates that as many as 48% of the respondents feel that while carrying a mobile phone makes them more secure and it reduces their stress level. 30% of the respondents undecided about the statement and remaining 22% of the respondents do not feel that carrying a mobile phone keeps them secure and reduces stress level. In a cohort study done by Sara Thomee et al, 50% of the men and 65% of the women confirm that they lost interest in things and/or felt depressed or hopeless, due to mobile devices.

5.2 Pattern of Mobile Phone Usage on College Campus

It is found from the study that 22.5% of respondents do not use mobile phone during class hours. This may be because of the prevalence of strict rules in most of the colleges, whereas 77.5% of the respondents do use mobile phone in class. The same result can be seen in other literature which indicates that many students use their mobile phones, while in class, to send or receive text messages and post/respond to SMS content. Some studies (e.g., Lenhart, 2010) show that over 60% of teens with mobile phones have texted while in class.

The study further shows the intensity of addiction to their mobile phone. It can also be assumed that students who use mobile phone during class will be disturbed most of the times as they would keep checking their mobile phones now and then to make sure that they have not missed any message or calls. This will have severe impact on their academic concentration and performance as well. This finding is consistent with other studies conducted by Burns and Lohenry (2010) and Campbell (2006) found that both students and instructors identified mobile phone use as a distraction in class. Although texting is considerably more covert than actual telephone conversations, a growing body of literature suggests that it is equally problematic.

5.3 Academic Performance of Respondents Subsequent to the Start of Mobile Phone Using

It is revealed from the study that 74% of the respondents' academic performance has been declined after they started using mobile phone. Remaining 26% of the respondents' academic performance has not come down after getting mobile phone. It is undeniable that majority of the respondents' academic performance has been lowered after getting mobile phones which might have negatively affected on their academics. A similar finding on lack in "performance" has been documented in the study by Jennifer Meckles (2012) and also her study reports that "attention" gets affected due to increase in mobile phone usage.

5.4 Respondents' Feeling during Absence of Mobile Phone

As per the opinion shared on the feeling of respondents in the absence of their mobile phones it is found that 40% respondents feel disappointed, 22.5% of the respondents get irritated and 28.75% are become anxious if they forget to take their mobile phone to college. Even though 8.75% say that

they are not bothered, another 91% shows symptoms of irritated, disappointed and sadness during the absence of mobile. This again shows that mobile phone is slowly becoming a part of their life which may lead to addiction if not used wisely. They become agitated when mobile phones are away from them.

5.5 Annoyance on Undesirable Messages

The present study shows that 76.25% of respondents have opined that they are annoyed by the undesirable messages received from a known or unknown source. Remaining 23.75% of the respondents opined that they were not annoyed by unhealthy messages. So there is the chance of students getting influenced by such messages as their ability of self-control is not so strongly developed yet.

5.6 Health Status of Respondents after Using Mobile Phone

It is evident from the study that as many as 71.25% of the respondents are facing health problems such as headache, ear ache, memory loss etc. after they started using the mobile phones. Remaining 28.75% of the respondents did not report on having such health problems. It shows that there is a definite hazard to health for those people who use mobile exceedingly. It is also evident from the study that 72% of the respondents opined that their sleep has been disturbed as they keep on checking for messages / calls which can be hazardous to their health state. Similar result was found in a study conducted by Massimini and Peterson (2009), where majority of students indicated that they had lost sleep at least one time within the previous seven days due to interference of mobile phone use.

5.7 Perception of Respondents Regarding Advantages of Mobile Phone

The study highlights that as many as 54% of the respondents have agreed on the fact that mobile keep connected to their friends and family. 34% of the respondents strongly agree with this statement and remaining 12% of respondents do not agree with this statement. 66% of the respondents agree that mobile phone is an important medium for maintaining kinship ties and 20% of respondents do not agree with this statement. Thus, it indicates that the role of mobile phone is also crucial in the process of socialization which helps to stay connected with beloved ones. As many as 30% of the respondents opined that owning a mobile definitely helps during the times of emergency

and 20% of respondents opined it is useful for having access to information and thus useful in enhancing their knowledge. 20% of respondents opined that it helps to maintain relationship with friends and 10% of respondents opined that it is useful to get rid of loneliness and remaining 20% of respondents opined that the advantages of mobile phone are: for knowledge/information, to maintain relationship with friends, helps during emergency, for entertainment, for quick information sends and also it removes loneliness.

6 Recommendations and Suggestions

The following suggestions and recommendations have been made based on the findings of the study and also in the best interest of youth development of India in general:

6.1 Appropriate regulations to be laid down in educational institutions in fostering right behaviour on college campus in using mobiles (enforcing do's and don'ts).

6.2 Strictly discouraging the use of mobile phones in class, during study hours. Classroom policy must be clearly stated in the student handbook to include wise ways of using mobiles and also on penalties for misuse/ initiation of disciplinary action. It is better that the instructor be very specific on what exceptions will be allowed.

6.3 Sensitizing students on ill effects of over use of mobiles and providing right knowledge on appropriate and sensible ways of using mobile in their academic development.

6.4 Diverting their attention by encouraging habits such as reading, sports and arts etc. rather than allowing them to hook on to mobile device all the time.

6.5 Share with care—using good intelligence while sharing/posting pictures, documents etc. with social media

6.6 Parents need to talk to their children about the dangers. They need to be convinced in limiting their cell phone usage at their early ages bringing into a system of practice among them. Parents can monitor their teens' text messages, pictures etc. to keep them monitored.

6.7 If one is unable to get rid of mental anxiety due to mobile phone, they should seek a professional help.

6.8 Universities can review and continually update their honour code or conduct guidelines to include current technology.

6.9 Some Self Regulation Suggestions for Students on Mobile Usage

1. Using the cell phone only when necessary
2. Keeping talk/messaging brief – not extending calls for hours.
3. Avoiding mobile while spending valuable time with fiends/ family
4. Self rules – no mobile use while eating, studying and during such other important activities.
5. In case of addiction seek the help of Counselor/Therapist/Mental health professional

Conclusion

Though it is hard to say whether the influence of mobile phones has made our life good or otherwise, we are following the trends of time unconsciously. Although as, new high - tech invention, the mobile phone really has brought about great changes and convenience in communication but without exception it also brings a lot of social problems. The emergence of mobile phone technology not only gives bad impact among youths particularly students' community, but it has affected the economy too. The mobiles have become an important social technology for youth. Mobile devices are becoming a crucial element and it is slowly becoming a part of their life and they become agitated when it is not with them. Sleep has been disturbed as they keep on checking for messages / calls which can be hazardous to their health though mobile phones make them secure and reduces their stress level. As a suggestion, the youth should avoid putting too much prominence on the use of mobile phones, and instead try to engage themselves in other ways, like reading, sports, arts etc. Educational institutions should make necessary rules and regulations so that students use mobiles in a conditioned environment and use it wisely.

References

- Burns, S., and Lohenry, K. (2010). Cellular Phone Use in Class: Implications for Teaching and Learning a Pilot Study, *College Student Journal*, 44:805-810.
- Campbell, S. W. (2006). Perceptions of Mobile Phones in College Classrooms: Ringing, Cheating, and Classroom Policies, *Communication Education*, 55: 280-294.

- Hurlock, E. B. (1989). *Developmental Psychology*. Bombay, Tata Mc Graw Hill.
- Jacknasar, P. H., and Wener, R. (2007). 'Call if You Have Trouble', Mobile Phones and Safety among College Students, *International Journal of Urban and Regional Research*, 31 (4): 863–873.
- Jayaswal, R. (1992). *Modernization and Youth in India*, New Delhi, Rawat Publications.
- John, S. (2007). *A Topical Approach to Life - Span Development*, New York, Tata Mc Graw-Hill Publishing Company Limited.
- Kumar, S. (2004). *Principles of Developmental Psychology*, New Delhi, Anmol Publications Pvt. Ltd.
- Lenhart, A. (2010). Teens, Cell Phones and Texting. Retrieved January 2014, from <http://pewresearch.org>
- Massimini, M., Peterson, M. (2009). Information and Communication Technology: Affects on U.S. College Students. *Cyberpsychology: Research on Cyberspace*, 3 (1): 1-15.
- Meckles, J. (2012, February 24). Sleep Affected by Late Night Cell Phone, Technology Use. Retrieved 2014, from www.wbir.com
- Nair, M. K. (2001). *Adolescent Care - 2000 and Beyond*, Bangalore, Prism books Pvt. Ltd.
- Newman, B. M., Newman, P. R. (1999). *Development Through Life - A Psychosocial Approach*, U.S.A, Wadsworth Publishing Company.
- Orlik, P. B., Anderson, C. D., Day, L. A., Patrick, L. (2007). *Exploring Electronic Media: Chronicless Challenges*, Blackwell Publications.
- Sara, T., Harenstam, A., Hagberg, M. (2011). Mobile Phone Use and Stress, Sleep Disturbances and Symptoms of Depression among Young Adults- A Prospective Cohort Study, *BioMed Central Public Health*, 11 (66): 1-11.
- Schiller, J. (2000). *Mobile Communications*. New Delhi, Person Education Ltd.
- Sharma, R. (2007). *Electronic Media-Issues and Innovations*. New Delhi, Regal Publications.

A Study on Organizational Climate and Job Satisfaction: A Critical Analysis on the Personnel in Catholic Hospitals in Kerala

Johny P R*, Pradeep V S

Shri Venkateshwara University, Gajraula, Amroha, Uttar Pradesh

Email : *johnputhuva@gmail.com

Abstract: *Organisational climate is the human environment in which the employees work and it provides a favourable or unfavourable setting for Job satisfaction. This paper is a pre-research discussion based on available literature upon Organisational climate and Job satisfaction in the perspective of prospective study on Organizational climate in relation to Job satisfaction in the context of Catholic hospitals in the state of Kerala, India. The literature survey indicates a positive correlation between Organisational climate and Job satisfaction. However, the variables that determine the organisational climate in a Catholic hospital would be different from other private hospitals. Therefore, there could be remarkable variation in the Job satisfaction derived in such situation. The present study is following a mixed methodology as the quantitative data will provide correlation between the variables and qualitative data would help in objective analysis of subjective experience of the clients studied.*

Key Words: *Organisational Climate, Job Satisfaction, Catholic Hospitals*

Introduction

Organizational climate is the core circle of human environment in the boundaries of which the employees of an organization works. Climate effects each activity in an organization directly or indirectly and is affected by almost everything that occurs in the organization. The survival and growth of any organization is directly proportional to the favourable climate in it. Employees in the organization have to be well conversant with rites, rituals, policies etc. This can only bring sense of belongingness among employees and further help in the growth of organization. Organizational climate is of great significance for utilization of human relations and resources at all levels. Organizational climate has a major influence on motivation, productivity and job satisfaction.

Hospital being a major institution in service sector has significant role in maintaining the positive health of the society. Catholic hospitals work with the motive of caring the sick after the model of the healing work of Jesus Christ, the founder of Catholic Church itself. What differentiate the catholic hospitals from other business-oriented hospitals is the service mission focus. Second to the government run hospitals where free treatment is provided, with minimum or affordable expenses the poor people also get an access to all catholic hospitals.

The study is aimed at analysing the organizational climate and culture in catholic hospitals and the level of job satisfaction of the employee personnel in such hospitals. The research is done among the catholic hospitals in the state of Kerala, India. Different employee stakeholders of catholic hospitals in Kerala constitute the study population.

Review of Literature

Organisational Climate

The organizational climate of the service industry is different from the manufacturing industry and especially in case of a hospital as the end product in curing of the disease of the patient, the entire organization should work with dedication and care. The employees of a hospital are not different from those of other types of organizations. There are factors that influence their job satisfaction. It was found that non-monetary aspects of organizational climate are having strong impact on job satisfaction of doctors in government as well as private hospitals in Andhra Pradesh of India.

As a result of this, issues of organizational climate are becoming matters of interest to both behavioural and social scientists as well as human resource practitioners (Patterson, 2005; Stone, 2004; Gershon et al, 2004 and Anderson and West, 1998). Studies conducted in the Western world on organizational climate found that individuals in a particular work group, level, or organization will have fairly similar perceptions of their shared environment (Kuenzi and Schminke, 2009; Hellriegel and Slocum, 1974). At the individual level, organizational climate has been linked with employee job attitudes such as commitment, job satisfaction, absenteeism, organizational citizenship behaviour and turnover intentions (Kuenzi and Schminke, 2009). Climate has been described as a component of organizational culture which is the pattern of shared assumptions, norms, values, and traditions of an organization that

distinguish it from other organizations (Schein, 1992). Study shows that the concept of climate can be useful in examining the quality of interpersonal relations, structure, and other organizational factors and both individual and organizational level outcomes if care is taken to conceptualize and measure at the appropriate level.

Components of Organizational Climate

Many studies have formulated indicators of organizational climate most of which are related. The indicators identified so far range from six to eighteen dimensions (Litwin and Stringer, 1968). Among these are employees' responsibility, organizational structure, warmth, conflict management, identity and rewards.

Organizational climate has been defined as the "relatively enduring quality of the internal environment of an organization that a) is experienced by its members, b) influences their behaviour, and c) can be described in terms of the values of a particular set of characteristics (or attitudes) of the organization" (Taguiri and Litwin, 1968, p. 27). The climate is the "ether" within which an organization exists.

Climate can be seen as organizational climate or psychological climate. Ekvall (1987) states that the organizational climate mediates in the confrontation between individuals and the organizational situation. James and Jones (1974) say that the organizational climate can be viewed in two different ways: "a multiple measurement-organizational attribute approach" or "a perceptual measurements-organizational attribute approach." Both of these approaches are confounded with organizational structure and processes and the general organization situation. The organizational climate is measured using variables like individual autonomy, the degree of structure imposed as the positions, reward orientation, consideration, warmth, and support. This is also the case in the treatment of organizational climate dimensions presented in Litwin and Stringer (1968) where organizational climate is measured along the following dimensions: structure, responsibility, warmth, support, reward, conflict, standards, identity, and risk. Poole (1985) states that climate seems to be a feature of, rather than a substitute for culture. That is, a comprehensive view of culture includes the organizational climate.

A study by Heidi Bushell (2007) has found that Hart, Griffin et al. (1996) Organizational climate model accounts for at least 16% single-day sick leave

and 10% separation rates in one organization. Other studies support the links between organizational climate and many other factors such as employee retention, job satisfaction, well-being, and readiness for creativity, innovation and change. Hunter, Bedell and Mumford (2007) have reviewed numerous approaches to climate assessment for creativity. They found that those climate studies that were based on well-developed, standardized instruments produced far higher effect sizes than did studies that were based on locally developed measures. Further a large number of other studies confirmed Research in organizational climate such as Sharan (2008), Johannesson (2003), Ganesan (2007) Akhilesh and Pandey (2006), Virmani and Kanchan (2000) explain organization climate its various parameters and its relationship with other factors.

Job Satisfaction

Investigated by several disciplines such as psychology, sociology, economics and management sciences, job satisfaction is a frequently studied subject in work and organizational literature. This is mainly due to the fact that many experts believe that job satisfaction trends can affect labour market behaviour and influence work productivity, work effort, employee absenteeism and staff turnover. Moreover, job satisfaction is considered a strong predictor of overall individual well-being (Diaz-Serrano and Cabral Vieira, 2005), as well as a good predictor of intentions or decisions of employees to leave a job (Gazioglu and Tansel, 2002). Beyond the research literature and studies, job satisfaction is also important in everyday life. Organizations have significant effects on the people who work for them and some of those effects are reflected in how people feel about their work (Spector, 1997). This makes job satisfaction an issue of substantial importance for both employers and employees. As many studies suggest, employers benefit from satisfied employees as they are more likely to profit from lower staff turnover and higher productivity if their employees experience a high level of job satisfaction. However, employees should also 'be happy in their work, given the amount of time they have to devote to it throughout their working lives' (Nguyen, Taylor and Bradley, 2003a).

Job satisfaction is simply how people feel about their jobs and different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs. According to Specters, (2007), an alternative approach is that proposed by Sousa-Pose and Sousa-Pose, based on the

assumption that there are basic and universal human needs, and that, if an individual's needs are fulfilled in their current situation, then that individual will be happy. This framework postulates that job satisfaction depends on the balance between work-role inputs - such as education, working time, effort- and work-role outputs - wages, fringe benefits, status, working conditions, intrinsic aspects of the job. If work-role outputs ('pleasures') increase relative to work-role inputs ('pains'), then job satisfaction will increase (Sousa-Pose and Sousa-Pose, 2000).

Perceived support by employees and superiors in the workplace can create a positive organizational climate that relates strongly to job satisfaction (Pritchard and Karasick, 1973; Siegel et al., 2014).

It was observed that people with a high professional background and official employment had a stronger organizational climate scores, so as higher organizational commitment scores. In the study of Gemlik et al. personnel with higher work experience had a greater commitment to the organization. According to Grover et al. age and work experience had a significant impact on job satisfaction and commitment of individuals. People who have been working for a long time in an organization may lose their confidence, thereafter which the feeling will increase the level of commitment of people and cause them to stay in the same organization to maintain their status. On the other hand, in the study of Marmaya et al. individuals with higher commitment to their organizations experience more stress than those with less commitment.

Sharma. M., et.al. (2012) conducted a cross-sectional study by using comprehensive customized questionnaire among Indian physicians to assess the level of satisfaction from their job and also to identify the factors influencing it. A total of 170 physicians were selected from two medical institutes using multistage sampling method. Fifteen facets of job satisfaction were studied with 42 questions. The results of this study showed that about 74% of physicians were satisfied from their job. Physical work conditions, freedom to choose desired method of working, attitude of fellow workers, recognition for good work, attitude of immediate boss, rate of pay, opportunity to use abilities, inter and intra departmental management, attention paid to the suggestions were the nine factors significantly associated with job satisfaction of physicians. According to author the pattern of high proportion of satisfaction of the Indian physicians reported was similar to the physicians' satisfaction working particularly in developed countries.

The above literature shows that there is a relationship between the variables of organization climate and job satisfaction. However, in the context of the catholic hospitals in Kerala that retains a special climate, the job satisfaction need to be studied, because you find employees prefer to work in such hospitals irrespective of comparatively low remuneration. It would be interesting to find out the factors contributing the retention of personnel in such a climate. Hence the study is relevant.

Objectives and Scope of the Study

General Objective

To make a study upon the impact of organizational climate upon the job satisfaction of the personnel management staff in the catholic hospitals in the state of Kerala

Specific Objectives

1. To assess and analyse the organizational climate of catholic hospitals in Kerala
2. To document and explain the level of job satisfaction of personnel in the catholic hospitals in Kerala.
3. To find the relationship between the organizational climate and job satisfaction
4. To analyse the managerial efforts to improve the organizational climate in the catholic hospitals in Kerala

Scope of the Study

Organizational climate and job satisfaction have become a major topic of discussion in India as a result of globalization of the economy and emerging work culture that utilizes maximum productivity of the employees at the threat of personal life. The hefty remuneration, prospective hike in the job ladder and added incentives may force the worker to spend long hours to achieve the target often neglecting the personal life. The hospital setting again demands increased working hours and very often in non-profit sector at remuneration which is not attractive. Then does the organization climate give sufficient job satisfaction is something to be researched.

The study is an attempt to find out how much the Organizational climate in catholic hospitals in Kerala give job satisfaction to its employees.

Methodology and Research Design

The paper is upon the research topic, “A study on Organizational Climate and Job Satisfaction: A critical analysis on the personnel in catholic hospitals in Kerala”.

Methodology used is both quantitative and qualitative. Quantitative data for accuracy of the problem analysed and qualitative case study method to get the objective experience of the personnel studied. The universe to be considered for the study would be the employees in catholic hospitals in Kerala having more than 500 bed strength.

Stratified random sampling method in which 100 each from different categories such as nurses, doctors, paramedical staff, administrative and ancillary staff, constituting total of 1000 samples from 10 major catholic hospitals in Kerala having more than 500 bed strength are chosen for quantitative data and 10 to 15 each samples from each selected catholic hospitals are chosen for focused group discussion for qualitative analysis.

The quantitative data would give sufficient input regarding the number of personnel in Catholic hospitals having different levels of job satisfaction as per the variation of the organizational climate. However qualitative data will provide more accurate picture of the job satisfaction based on the subjective experience of the personnel.

Pre-research Discussion

According to Qasim, Cheema and Syed (2012), Job satisfaction is the feeling that individuals have about their jobs. It is also seen as “a pleasurable or positive emotional state resulting from the appraisal of one job or job experience” (Locke, 1976 p. 1304). It is a feeling of accomplishment when once job meets his or her desired expectation. Organizational behaviour literature has revealed that individuals who express high feelings of job satisfaction are likely to exhibit productive behaviours, job involvement and commit to their organizations. Organizational climate has profound impact on the work behaviour of employees in organizations (Metle, 2001; Afolabi, 2005). Many factors affect the satisfaction of employees at their work places and supervisor behaviour is one of them. As cited by Holloway (2012), a study conducted by Momeni (2009) concluded that a leader’s behaviour has a great influence on employees’ attitudes, behaviours, emotions, morale, and perceptions.

Job satisfaction as an organizational phenomenon is multi-faceted (Xie and Johns, 2000; Fisher and Locke, 1992) and as such influenced by many factors like salary, working environment, autonomy, relationships, and organizational commitment (Lane, Esser, Holte and Anne, 2010; Vidal, Valle and Aragón, 2007; Fisher and Locke, 1992; Xie and Johns, 2000). Herzberg's two factor theory recognized these as hygiene factors. This dimension of the theory means factors whose presence or existence create dissatisfaction to employees. However, the lack of it does not bring job satisfaction to employees either. The other factor, motivation factors are rather the organizational practices which influence employees' job satisfaction (Judge et al, 2001 and Luthans, 2002). From a theoretical front, a lot of frameworks have been developed with regards to this organizational phenomenon.

Organizational Climate and Job Satisfaction

The concept of organizational climate has been studied by a number of researchers. According to Al-Shammari (1992), there are a lot of debates regarding the relationship between organizational climate and job satisfaction. In most of the studies conducted, there have been different dimensions used. As a result of these variations in the dimensions, the outcome of the relationship between these two variables, organizational climate and job satisfaction have also received many varying results (Patterson et al. 2005 as cited in Goi, 2013).

In the context of the current study the relationship between Organisational climate and Job satisfaction is studied in Catholic hospitals in Kerala. Social service orientation or contemporary social entrepreneurship characteristic is a remarkable feature of these service sector firms. However hardly any demarcation between volunteer service and paid service is being done in these hospitals. Hence poorly paid employees may negatively contribute to job satisfaction in these sectors.

Conclusion

The organizational climate is a vast and growing subject. Although job satisfaction is an age-old subject in the context of Catholic hospitals in Kerala it is relevant and will give significant results that could be contributed for the innovation in the organizational climate in such institutions. The findings of this study would hopefully contribute to the organizational development strategies and policy making of the firms in the days to come.

References

- Akula, R.L.K., Talluri, S. (2013). Impact of Organizational Climate on Job Satisfaction of Doctors in Hospitals of Andhra Pradesh, India, *Research Journal of Science and Management*, 3(3): 76-80
- Jahanzeb, K., Rasheed, M.F., Rasheed, A. and Aamir, A. (2012). Impact of Rewards and Motivation on Job Satisfaction in Banking Sector of Saudi Arabia. *International Journal of Business and Social Science*, 3(21): 72-78.
- Al-Shammari, M.M (1992). Organizational Climate. *Leadership & Organization Development Journal*, 13(6): 30-32.
- Bte Marmaya, N.H., Hitam, M., Zawawi, N., Jody, J.M. (2011). Organizaonal Commitment and Job Burnout among Employees in Malaysia, *Proceedings of International Conference on Business and Economics Research*.
- Deshpande, S.P. (1996). The Impact of Ethical Climate Types on Facets of Job Satisfaction, *Journal of Business Ethics*, 15: 655-660.
- El-Demerdash, S., Abdelaziz, A., Abdelsalam, G. (2013). The Relaonship between Burnout and Organizaonal Commitment among Nurses at Tanta University Hospitals, *IORS-JNHS*, 2(6): 20-28.
- Gemlik, N., Sisman, F.A., Sigri, U. (2010). The Relaonship between Burnout and Organizaonal Commitment among Health Sector Staû in Turkey, *J Global Strategic Manage*, 8: 137-49.
- Grover, H., Wahee, S.J. (2013). Study on Factors Influencing Job Satisfaction of Employees in Delhi/NCR, *International Journal of Business Management. Special Issue on Role of Statistics in Management and Allied Sciences*, 3(2): 101-12.
- Gohari, P., Kamkar, A., Hosseinipour, S.J., Zohoori, M. (2013). Relationship between Rewards and Employee Performance: A Mediating Role of Job Satisfaction, *Interdisciplinary Journal of Contemporary Research In Business*, 5(3): 571-597.
- Hellriegel, D., John, W., Slocum, Jr. (1974). Organizational Climate: Measures, Research and Cntingencies. *Academy of Management Journal*, 17: 255-280.

- Holloway, J.B. (2012). Leadership Behavior and Organizational Climate: An Empirical Study in a Non-profit Organization, *Emerging Leadership Journeys*, 5(1): 9-35.
- Jeevan Jyoti (2013). Impact of Organizational Climate on Job Satisfaction, Job Commitment and Intention to Leave: An Empirical Model, *Journal of Business Theory and Practice*, 1(1): 66-82.
- Pritchard, R. D., Karasick, B. W. (1973). The Effects of Organizational Climate on Managerial Job Performance and Job Satisfaction. *Organizational Behavior and Human Performance*, 9(1): 126-146.
- Sharma, M., Goel, S., Singh, S. K., Sharma, R., Gupta, P. K. (2014). Determinants of Indian Physicians' Satisfaction & Dissatisfaction from Their Job, *The Indian Journal of Medical Research*, 139(3): 409–417. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4069735/>
- Siegle, D., McCoach, D. B., Shea, K. (2014). Applying the Achievement Orientation Model to the Job Satisfaction of Teachers of the Gifted, *Roeper Review*, 36(4): 210-220.

A Study on Surface Chemical Behaviour of Solid State Nuclear Track Detector Films by Etching

Nadira Mahamood K, Prakash V*

Department of Studies & Research in Physics, Payyanur College, Kannur Kerala, India, 670 327

Email: *prakashamv@gmail.com

Abstract: *The etching is a process of modifying the flat smooth surface to identify the structure, phases, and other effects such as the orientation of grains, deformation and distribution of solute elements. Due to the chemical reaction between the etchant and the detector material, some molecules of the detectors are removed. The etchant used for LR-115 detectors in the present study is aqueous NaOH solution with 2.5 N. The bulk etch rate has been estimated by varying the etching time, keeping the etching temperature constant. It has been seen that, the bulk etch rate remains almost constant during etching. The result indicates that, rate of chemical etching is uniform in different intervals of etching time. The average bulk etch rate obtained from experiments was in good agreement with the standard value obtained from earlier experiments.*

Key Words: LR-115, Etching, Bulk Etch Rate.

Introduction

Cellulose nitrate ($C_6-H_8O_8-N_2$) films (commercially available as LR-115 films from DOSIRAD, France) have been commonly used as solid state nuclear track detectors (SSNTDs) in which visible tracks can be formed after ion irradiation and suitable chemical etching. SSNTDs are passive devices since these devices require no electrical power to perform its function. The films are mainly intended for the dosimetry of small quantities of ionizing particles (mainly “alpha particles”) or neutrons and are insensitive to beta and gamma rays. These are well known for the detection of ionizing radiation through track formation of heavy ionizing particles and are used to measure ^{222}Rn , ^{220}Rn and their progenies. The exposed SSNTD are required to undergo an etching process which turns the nuclear tracks on the films into holes. For the analytical results to be reliable and precise, temperature and concentration of the etching solution and etching time have to be stable and controlled. Constant Temperature Bath Model PSI-CTB1 is excellent equipment which facilitates processing of up to 30 films at one go.

Ion track growth in SSNTDs has been suggested to be based on two parameters, V_t and V_b where, V_t is the track etch rate (i.e., the rate of chemical etching along the ion trajectory) and V_b is the bulk etch rate (i.e., the rate of chemical etching of the undamaged surface) (Yip et al., 2006). The second factor V_b is strongly related to the removed thickness of the active layer and it has been established that the thickness of the removed layer during etching of the solid state nuclear track detector is one of the main factors influencing the track parameters or shape characteristics (Hussain, 2009). V_b is one of the most important parameters that control the formation and development of tracks and V_t is needed to simulate track growth and to calculate the track parameters. It has been shown that V_b depends on many factors like the purity of the basic substances, the molecular structures of polymers, conditions of polymerization, environmental conditions during the irradiation and finally on etching conditions (Palacios et al., 2010). V_b can be calculated using several methods, such as the decrease in the detector's thickness method, the loss of the detector's weight method or the fission-fragment diameter method (Hassan and Hafez, 2013).

The LR-115 type II SSNTD is used in the present study. The detector consists of a 12 μm active layer thickness of cellulose nitrate on a 100 μm clear polyester base substrate. Mass difference method is used to determine the bulk etch rate (V_b) and the removed active layer thickness (h) of LR-115 type II detectors.

Materials and Methods

The LR-115 type II strippable detectors used in the present study were purchased from DOSIRAD, France (supplied by Polltech Instrumentation Pvt. Ltd., Mumbai). The detectors consist of a nominal 12 μm thick red strippable active layer of red cellulose nitrate on a 100 μm clear polyester base substrate. The Constant Temperature Bath Model PSI-CTB1 used in the present study, comprises a double-walled water bath with glass wool insulation, three etching vessels, electrical water heater, circulating pump, temperature sensor and electronics. Each of the three etching vessels has slots for a rod that can accommodate 10 cartridges to facilitate the processing up to 30 films at one time. The electrical water heater is a resistive type heater. Circulating pump is used to circulate the water during the heating process to ensure uniform heating.

The etching is the process of modifying the flat smooth surface to identify the structure, phases, and other effects such as the orientation of grains, deformation and distribution of solute elements. Due to the chemical reaction between the etching solution (etchant) and the detector material, some molecules of the detectors are removed. Aqueous NaOH solution with 2.5 N (10%) is the commonly used etchant for LR-115 detectors.

During the present work, bulk etch rate has been estimated by varying the etching time keeping the standard etching temperature (60°C) as constant. The un-irradiated LR-115 detectors were cut with a size of about 3×3 cm² and their weights were measured using a weighing balance machine of 0.1mg accuracy. After the weight measurement, each detector was dipped in 2.5N (10%) NaOH solution and etching was carried out using the constant temperature bath. The temperatures were kept with an accuracy of about ±1°C. For each etching time, at constant temperature 60°C, the films were immediately rinsed by distilled water and air-dried for 30 minutes.

After completing the etching at various temperatures, the weights of each film were again measured and average mass differences Δm before and after etching were calculated. Because of the non-uniformity in the expected area (9 cm²) of the film, the actual area of the films was calculated using a travelling microscope. Travelling microscope is focused at the surface ends of a film and measured the length and breadth of the film by adjusting the horizontal and vertical cross wire. From this, the area of each film was calculated.

The bulk etch rate was calculated using the equation, $V_b = \frac{1}{2} \frac{m}{A\rho t}$ (3.1)

where V_b is the bulk etch rate in $\mu\text{m h}^{-1}$, Δm is the mass difference in mg before and after etching, A is the etched surface area in cm², ρ is the density of the active layer, which is equal to 1.45gm cm⁻³ for LR-115 and t is the etching period in hours.

After calculating the bulk etch rate (V_b), it is possible to evaluate the removed-active layer thickness h (μm) at any etching time using the following relation (Hussain, 2009)

$$h = V_b \times t \quad (3.2)$$

Results and Discussion

Experimental results of the chemical etching of LR-115 type-II SSNTD films at different etching time are given in Table 1. Graph of bulk etch rate Vs. etching time; and removed layer thickness Vs. etching time was plotted and shown in Fig. 1 and Fig. 2 respectively. It can be seen that, the bulk etch rate remains almost constant during etching (Fig. 1). The result indicates that, rate of chemical etching is uniform in different intervals of etching time selected for the experiment.

Thickness of the removed layer is an important factor in all applications of α particle detectors. In the present study, the estimated removed layer thickness shows linear variation against etching time (Fig. 2) at constant etching temperature.

Table 1: Bulk Etch Rate and Removed Active Layer Thickness

Time (minutes)	Area of the film (cm ²)	Mass before etching (mg)	Mass after etching (mg)	Mass difference Δm (mg)	Bulk etch rate V_b ($\mu\text{m h}^{-1}$)	Removed layer thickness h (μm)
60	9.4064	0.1452	0.1384	0.0068	4.9856	4.9856
70	8.999	0.1389	0.1319	0.0070	4.5982	5.3646
80	9.4885	0.1464	0.1377	0.0087	4.7426	6.3234
90	8.9287	0.1378	0.1291	0.0087	4.4799	6.7199
100	8.9559	0.1382	0.1285	0.0097	4.4817	7.4696
110	9.4444	0.1458	0.1350	0.0108	4.3017	7.8864
120	9.1506	0.1412	0.1303	0.0109	4.1075	8.2150

The average bulk etch rate obtained from the two sets of experiments was $4.48 \mu\text{m h}^{-1}$ without stirring and it was in agreement with the standard value obtained from the earlier experiments and was $4 \mu\text{m h}^{-1}$ (Eappen and Mayya, 2004). The standard etching conditions for the above experiment was constant etching temperature of 60°C without magnetic or any other stirring for 90 minutes etching time. The accuracy of calculation depends on the accuracy of measurement of mass difference for the LR-115 detector.

Fig. 1: Bulk Etch Rate Vs. Etching Time

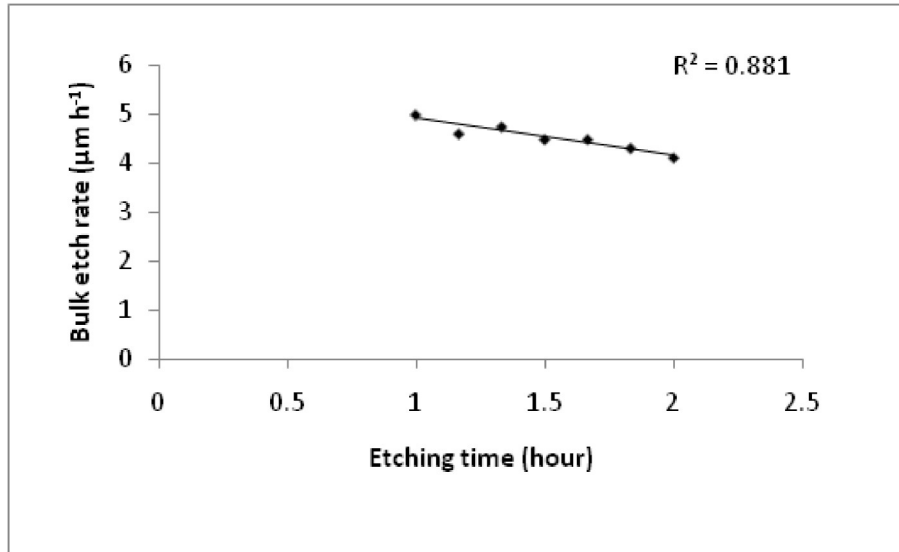
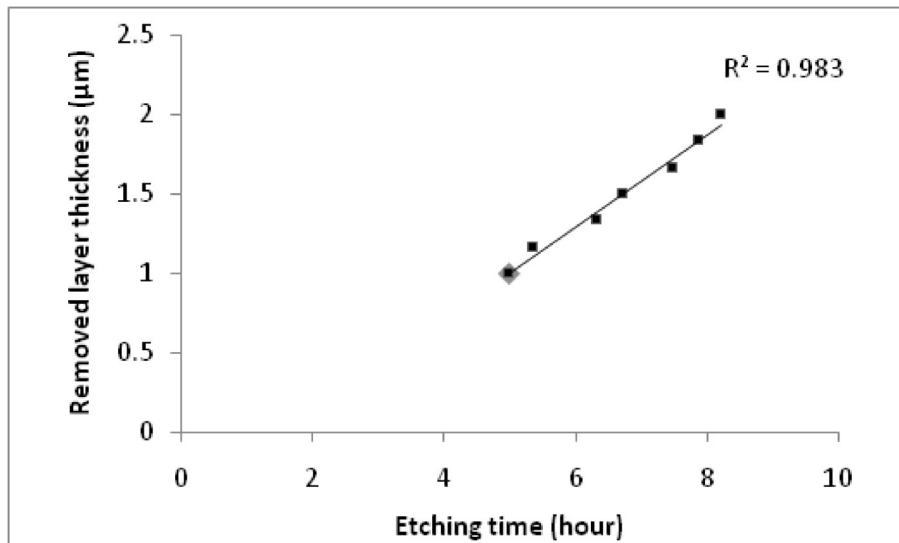


Fig. 2: Removed Layer Thickness Vs. Etching Time



Conclusion

The bulk etch rate estimation was carried out keeping the etching temperature constant and found that, the bulk etch rate remains almost constant during etching. The study also indicates that, rate of chemical etching is uniform in different intervals of etching time. The estimated removed layer thickness showed a linear variation against etching time. In order to conclude, the accuracy in the measurement of mass difference is an important parameter while calculating the various etching parameters of an LR-115 SSNTD films.

References

- Eappen, K.P., Mayya, Y.S. (2004). Calibration Factors for LR-115 (Type-II) Based Radon Thoron Discriminating Dosimeter, *Radiat. Meas.*, 38: 5–17.
- Hassan, N.M., Hafez, A.F. (2013). Studying the Physical Parameters of a Solid State Nuclear Track Detector, *J. Korean Phys. Soc.* 63: 1713–1719.
- Hussain, A.K. (2009). Variation of Bulk Etch Rate and Some Other Etching Parameters with Etching Temperature for Cellulose Nitrate LR-115 Detector, 49–60.
- Palacios, D., Sajó-Bohus, L., Barros, H., Greaves, E.D., Palacios, F. (2010). Alternative Method to Determine the Bulk Etch Rate of LR-115 Detectors. *Rev. Mex. Física*, 56: 22–25.
- Yip, C.W.Y., Nikezic, D., Ho, J.P.Y., Yu, K.N. (2006). Chemical Etching Characteristics for Cellulose Nitrate, *Mater. Chem. Phys.*, 95: 307–312.

A Study on the Religious Beliefs in the Choice of Treatment Modalities

Justin Raj¹*, Prince C P²

¹Mar Ivanios Public School Harmoti, Assam

²Green Dale School Rangapara, Assam

Email: *justinraj.tvm@gmail.com

Abstract: *Religious beliefs of persons who seek medical care is very often discussed in research circles to find out its impact or efficacy in the very healing process. The paper based on a masters level study in medical social work tries to explore the influence of religious background of the persons who seek medical care in different hospitals having a religious significance. The study is qualitative in nature and based on available literature and case studies try to explore the importance of religious beliefs and practices in choosing the type of hospitals for treatment. The study result shows significant correlation between the choice of the patient and religious orientation of the place of treatment at greater extent.*

Key Words: *Religious Beliefs and Practices, Treatment Modalities, Religious Orientation of Hospitals.*

1. Introduction

Religious beliefs and practices are common among patients seeking medical care, and even those who indicate that they are not religious often identify themselves as being spiritual in some way. Spirituality is more individualistic and self-determined, whereas religion typically involves connections to a community with shared beliefs and rituals. Religious belief, membership, importance, and attendance are prevalent and steadily increase with age. Since most patients with serious or chronic health problems are older, it is not surprising that many are religious. There is also a considerable gap between patients' and physicians' levels of religiosity.

One of the reasons why religious belief is so common among medical patients is that as people become ill, they experience stress over the changes in life that illness causes. Many who were not religious previously may turn to religion for comfort. Whether it is as a new method of coping or a lifelong

belief, religion becomes increasingly important as patients face the Goliath of illness. Those who seek comfort in religion approach it in many ways. In the religious based hospitals, this often involves belief in a loving and caring God, private religious activities (such as prayer and meditation), reading religious scriptures for direction and encouragement, or looking for support from a pastor or members of a faith community.

A growing body of scientific research suggests connections between religion, spirituality, and both mental and physical health. Recent studies indicate that religious beliefs influence medical decisions, such as the use of chemotherapy and other life-saving treatments, and at times may conflict with medical care. A growing body of scientific research suggests connections between religion, spirituality, and both mental and physical health.

Recent studies indicate that religious beliefs influence medical decisions, such as the use of chemotherapy and other life-saving treatments, and at times may conflict with medical care. Religious beliefs and practices are powerful sources of comfort, hope, and meaning, particularly in coping with a medical illness. When the people get chronic illness then they will think of God and most probably they will select religious based hospitals.

2. Review of Literature

Research on the relationships among religion, beliefs and health has grown dramatically over the past decade. It is clear from the literature that many in research, in health care, in the public, and in government, believe that important positive connections have been established and should be vigorously studied. It is also clear that others are unconvinced and even hostile to the subject. It is not surprising that such a deeply felt subject should be controversial when it makes its way into a field such as medicine. Nor should it be surprising that such a complex topic as health and religious, having been left out of scientific inquiry for so long, should prove difficult to study with the methods of science.

2.1 Analysis of Religious Beliefs and Spiritual Healing

Religion is generally understood as a set of beliefs, rituals and practices, usually embodied within an institution or an organization. Spirituality, on the other hand, is commonly thought of as a search for what is sacred in life, one's deepest values, along with a relationship with God, or a higher power,

that transcends the self. Persons may hold powerful spiritual beliefs, and may or may not be active in any institutional religion. Spirituality can be defined as “a belief system focusing on intangible elements that impart vitality and meaning to life’s events” (Maugans, 1996). Many in the baby-boom generation who claim not to be religious, admit to a sense of “reverence” for life, similar to the concept championed by theologian-philosopher Albert Schweitzer.

2.1.1 Religious Beliefs

Religious belief refers to attitudes towards mythological, supernatural, or spiritual aspects of a religion. Religious belief is distinct from religious practice or religious behaviours with some believers not practicing religion and some practitioners not believing religion. Religious beliefs, being derived from ideas that are exclusive to religion, often relate to the existence, characteristics and worship of a deity or deities, divine intervention in the universe and human life, or the deontological explanations for the values and practices centred on the teachings of a spiritual leader or group. In contrast to other belief systems, religious beliefs are usually codified (Testerman, 1997).

Religion is a subject that we encounter daily, because we follow a specific faith and the rules established by it. Religion is not only “researchable,” but it is also of essential interest to clinicians, doctors, patients and health psychologists. Religion has the benefit of empowering the individual through connecting him/her to a community, and to a superior force, that might in turn give psychological stability (Basu-Zharku, 2011).

2.1.2 Spiritual Healing

The Hamlyn Encyclopedia of complementary health (Sullivan, 1996) defines, ‘spiritual healing as the channeling of healing energy from its spiritual sources to someone who needs it. The word ‘spiritual’ refers to the divine nature of energy, which healers agree, comes from one external, invisible intelligent source.

Spiritual healing can help both physical and emotional problems. A goal of spiritual healing is to eradicate problems, usually starting in the mind, to restore balance to the person and continue spiritual awakening. Wounds, emotional or physical, impede our spiritual progress and therefore must be healed before awakening can continue. Spirituality is not a homogenous practice, but reflects individual expressions of being (Adegbola, 2006).

Spiritual healing exists in Christianity, Christian Science, Mesmerism, Shamanism and numerous other faiths. It involves an appeal to God or any higher power to heal others through prayer, meditation, faith and the transmission of energy through various means to the person who needs healing. It can involve divine intervention, faith healing and religious orientation.

2.1.2.1 Divine Intervention

The term divine intervention refers to a miracle caused by God's direct and active involvement in the human world. If you look at the words themselves, it means an intervening by a divine power. God got involved. God intervened. The healing of a person, through faith healing or spiritual healing could be considered divine intervention.

2.1.2.2 Faith Healing

Faith healing refers to supernatural healing; a healing that results from prayer or the laying on of hands, rather than medicine. According to author and theologian Andrew Village, faith healing is the idea that religious belief, or faith, can bring about healing. Faith healing occurs through prayers or rituals that evoke a divine power toward individuals who need healing of a disease or disability. Faith healing may take the form of prayer, a statement of faith in a god or gods and their ability to heal, the laying on of hands, anointing the sick with oil, visiting a religious shrine or other ritualistic variations on the same theme.

Dr. Stephen Barrett, M.D., claims that prayer, divine intervention and faith healing can cure illness have been popular throughout history. The Apologetics Index, non-profits online Christian ministry, says the term is most common in reference to Christianity. The Christian *Bible* is full of reports of faith healings, especially in the New Testament gospels. The group adds that advocates claim that, even in our modern age of medicine and technological advancement, faith healing has cured blindness, deafness, AIDS, cancer and a range of other diseases with wide success. These healings are often called miracles.

2.1.2.3 Religious Orientation

An individual's or community's religious orientation involves presumptions about the existence and nature of God or gods, religious prescriptions about morality and communal and personal spirituality. Such presumptions involve the study of psychology, ethics, sociology and anthropology. Religious

orientation means an attitude toward religion or religious practices. Orientation means an integrated set of attitudes and beliefs.

2.1.2.4 Spiritual Care

All people have spiritual needs. Some people have religious needs. The Pastoral Care Services Department works to help patients, family members and staffs addresses both spiritual and religious needs. Religious and spiritual concerns are particularly prominent during times of illness, suffering and death. Some medical leaders and policy-makers in the US have urged healthcare systems and providers to give due attention to patients' spiritual concerns (Williams, 2006)

2.1.2.4.1 Spiritual Needs and Concerns

Spiritual needs and concerns usually relate to what we call the “big” questions of life. These questions can include:

1. Why is this happening? Why is it happening to me?
2. What does it all mean?
3. How do I make sense of everything?
4. How do I feel about changes in my life?
5. What gives me comfort and hope?
6. What do I call “good” in my life? What do I call “bad”?
7. What am I grateful for?
8. What do I trust? Who do I trust?
9. Who is my “beloved community” — who loves me and is loved by me, no matter what?
10. What or who — beyond myself — do I believe is important in my life?

All of these questions relate to spiritual needs, concerns and resources. All people ask these questions during their lives, especially when they or someone they love are sick or in crisis.

Some people find meaning, comfort, hope, goodness and community through their religious practice, beliefs and/or community of faith. Some people do not. Regardless of whether religious faith is a part of a person's life, spiritual concerns, resources and needs can still be very important, especially during hospitalization.

2.1.2.4. 2 Spiritual Resources

Spiritual resources are practices, beliefs, objects and/or relationships that people often turn to for help in times of crisis or concern. Some spiritual resources include:

Music, Prayer, Meditation, Family and friends, Religious leaders, Priest, Rabbi, Imam, Supportive communities, Church, Synagogue, other support groups, Holy writings/scripture , Bible, Torah, Qur'an, Inspirational writings, Poetry, Devotional Materials, Prayer Books, Religion-specific items, Sabbath menorah, Rosary beads, Devotional pictures, Prayer rug, Sacramental practices, Communion, and Anointing

These resources can help people return to a sense of balance when their lives have been turned upside down. They can help people sort out the “big” questions in order to find meaning, comfort, hope, goodness and community in the midst of a crisis.

A religious based hospital provides, pastoral care, supports groups, insurance plans, financial supports and spiritual satisfaction.

2.1.2.4.3 Pastoral Care

Pastoral care is an ancient model of emotional and spiritual support that can be found in all cultures and traditions. It has been described in our modern context as individual and corporate patience in which trained pastoral carers support people in their pain, loss and anxiety, and their triumphs, joys and victories.

Pastoral care as a care model and profession is emerging in the public arena in its own right, in our day, and its value and helpfulness is now recognized as applicable to people generally in their everyday life.

Just as its theory and philosophy is not dependent on any one set of beliefs or traditions, so pastoral carers are trained to relate gently and skilfully with the inner world of individuals from all walks of life, and the elements that go to make up that persons sense of self, their inner resources, resilience and capacity to cope.

They are not counsellors or therapists. They are personal relaters operating under a positive motivation that has no strings attached.

Holistic approach to the whole person to explore the inner essence soul in all of us: the inner world, historically Christian but is now a multi faith community caring for the sheep is the role of pastors (H. B. London)

2.1.2.4.4 Support Groups

Support is an important part of treating the emotional aspects of illness. Licensed, experienced social workers are available to help the patients and patient's family cope with illness in the religious based hospitals. There are different types of support groups in the hospitals.

2.1.2.4.5 Spiritual Satisfaction

Satisfaction: Everyone wants it. Yet everyone already has it even though they say that they do not. Satisfaction exists within every person. This is not some far-off potential satisfaction which exists in the imaginary future but a satisfaction which is very much happening here and now. There are different types of satisfaction: basically physical, mental, emotional, and spiritual.

Spiritual satisfaction arises from achieving your inner purpose, your innermost goals. This is not to be confused with imagined or externally defined goals. That would be like a mighty oak tree accepting the shrunken vision of a bonsai gardener. Whatever the gardener's aesthetic preconceptions are they are in no way aligned with the oak acorn's internal destiny. Similarly, and crucially, every human being has a life direction; one's guiding light, which is invisible to the outer eye. It is this inner guidance which must be honoured for spiritual satisfaction to exist. (Mickley, J.R., et. 1995)

2.1.2.5 Treatment Modalities

Treatment modalities can be simply defined as methods of treatment. These are ways in which a doctor or an allied health professional would go about treating a condition. It's not surprising to note that examples of varying treatments could include many methods. Some people are expert in a single method, and others have training in a number of different areas, all of which may be brought to bear for the benefit of a client or patient.

Another way in which treatment modalities is used is to talk about care options for the same disease. Instead of referring to a practitioner's methods, the term could be used to think about all approaches and the theories behind them that could be used. For instance, when people have haemorrhoids, doctors might consider the modalities available to determine best type of care. Options could include giving minor pain relief and changing diet while the matter resolves, using techniques that remove the haemorrhoids, or taking a surgical approach to cure protrusions not responding to other methods.

These different methods are each modalities or ways of accomplishing the same thing, and most doctors' expert in this issue would have experience with most methods.

Similarly, doctors can explore treatments for a variety of medical conditions. In cancer, multiple modalities like surgery, chemotherapy and radiation therapy could be used for treatment. Alternately, one method alone could be effective.

Religion/spirituality plays a vital part in medical decisions for many patients, sometimes leading to more aggressive medical interventions at the end of life. Again, here is another reason for taking a spiritual history. Spiritual and religious beliefs can have powerful effects on health and healthcare decisions, in either positive or negative ways, and physicians need to be aware of that.

Religious beliefs and practices help patients to cope better with their illnesses, enhance their social support, and help them to avoid self-destructive behaviours such as, substance abuse, it is important to understand how religion influences physical health through psychologic, social, and behavioural pathways (Koenig HG, et al., 1997).

The overall positive association between religiosity, mental health, and physical health, religion also influences factors that directly affect the delivery of health care. These factors fall into four major categories: medical decision-making, beliefs that conflict with medical care, spiritual struggles that create stress and impair health outcomes, a disease detection and treatment compliance (Frank E, et al., 1999).

3. Methodology

The aim of the study is to find the importance of religious beliefs in the life of patients. The following are the objectives;

To Study Socio demographic profile of persons with chronic illness to get treated at Puspagiri Medical College, Amritha Medical College and Jubilee Mission Hospital.

To Study the religious orientation and beliefs of the patients with chronic illness.

To explore the attitude of the patients towards the religious orientation of the Institute.

To study the religious orientation and attitude of the treating team.

The study was about the religious beliefs in the choice of treatment modalities belong to the age group of 20 to 60 from Kerala getting treatment at Pushpagiri Medical College Hospital, Thiruvalla, Amritha Medical College Hospital, Thirissur and Jubilee Medical Mission Hospital Palayam.

4. Case Studies

The qualitative analysis of the data obtained through semi structured interview schedule. The case study method is adopted in which 15 case studies are done. Each case follows the pattern of sociodemographic description of the respondent in the first paragraph and all other three objectives in the subsequent paragraphs. The last paragraph is the interpretation of the respective case as per the impression of the researcher. Three cases are selected from the 15 cases for this paper.

4.1.1 Case 01

Ms. Jolly Mathew is a 22 year young girl who was suffering from Leukaemia with chronic progressive pain and weakness, she feels that her faith offers the most help despite numerous medical interventions, for coping with her illness. She comes from an urban area, near Kayamkulam, Kerala. She attends Church regularly and has a strong faith. She is a M Com student and she is financially poor.

She had a history of bleeding and breathing problem for the past two years. She developed diffuse body pain. The end result was that it became difficult for the body to fight infections, control bleeding, and transport oxygen. She also tried acupuncture and massage yielding no benefit. The consulting oncologist did not have any further treatment to offer her.

Ms. Jolly Mathew continued to have diffuse body pain as well as increasing weakness of her lower extremities. During the course of her illness, she had steadfastly maintained her independence and good spirit. She had consistently stated that her faith in God had enabled her to endure her chronic pain. Her physician Dr. Radha Devi continued to struggle with the lack of traditional medicine to provide her one source of comfort and strength. The role this should play in her ongoing medical care remained a question. But she believed that God would help her to come back to life. Every day she was reading the Holy Bible.

Her spirituality, religion, and her beliefs (which included prayer and Bible reading) had an important role in the process. The Western religious worldview was an optimistic one that gives hope, purpose, and meaning to negative circumstances. Mrs. Jolly Mathew's strong beliefs frame her entire condition. Her trust and assurance were in God. She said that she prayed and read her Bible every day. Nothing came on the way of her prayer time and Bible reading. Regardless of whether an illness or health condition gets better or worse, having such a powerful belief in God may for some have a major effect in reducing loneliness and separation and reclaiming a sense of control.

4.1.2 Interpretation

Ms. Jolly Mathew was a faithful lady. In the midst of her pain she was searching on God's providence. She had no complaints to God. She selected Pushpagiri Medical College because it was a religious based hospital. She decided to come to this hospital for treatment because this Medical College provided good pastoral care and had the provision to receive Holy Communion every day. She had good family support. She believed that by the Grace of God she could get healing. The hospital authorities provided her some financial support. Therefore her belief system would have played a key role in the entire healing process.

4.2.1 Case 02

Mr. Rahul, 29 year old was a young business man belongs to Hindu Religion and he came from Chenganoor, a rural area of Kerala State. He was suffering from bladder cancer. Three months ago one morning he went to toilet and he saw that blood was flowing through urine. Quickly he went to Amritha Medical College for check up. There the doctors diagnosed that he had bladder cancer. Doctor said to him that it was the third stage so he should undergo an operation. The doctor suggested removing the bladder. But the problem was that if the bladder is removed then the natural urine pass would not be possible. He was mentally upset. The doctors gave counselling to him. After that the doctor sent him to their payer hall. He saw a number of patients and by standers were doing prayer. He also joined with that prayer group. He said that the prayers gave confidence in his life.

He agreed with doctor to get his bladder removed. He said that after the surgery if he would recover then he would join to Matha Amrithanada Mai

Ashram. Now he realized that life is a gift of God. He said when he became a patient he thought why he had got that disease. Now he understood that God needed me for His own work that's why He gave this disease to him.

He said that all this insight he got from this hospital. When doctor said about the operation he thought about suicide. But the treatment team through their care, love and prayer changed his mind. Thus he recovered and also motivates the patients to live in a happy way trusting the Almighty God.

4.2.2 Interpretation

He got good insight during illness time. Now he joined Matha Amirthanada Mai Ashram. After the bladder removal operation he couldnot urinate in a proper way. Doctor put a hole in his stomach. Through that he could pass urine. But he had no complaints on God. His trust in God helped him to recover as well as to accept all complications resulted from the surgical intervention.

4.3.1 Case 03

Mr. Ummer Abdulla was a 57 years old man who had multiple medical problems and chronic progressive pain and weakness. He felt that his faith offered the most help for coping with his illness. He lived in a village, near Kattakada, Kerala. He had seven children. His children were married. He was a good believer.

He had a medical history of hypertension and diabetes since 2007. He developed diffuse body pain. An evaluation found that he had sensory neuropathy. Initially he was treated with neurological problems. The consulting neurologist did not have any further therapy to offer him.

Mr. Ummer Abdulla continued to have diffuse body pain. He and his physician Dr. Shibi Petter continued to struggle with the lack of traditional medicine to provide him any type of better treatment. He was a man of faith. He believed that God 'Allahu' will protect him. He was admitted in Jubilee Medical Mission Hospital, Palayam, Trivandrum. He said that this hospital is Christian hospital. But they allowed him to continue his prayers. He believed that there is only one God. The treating team was always respecting his faith. The hospital authority provided a special place for him to do his prayers. It was because of their concern he selected this hospital.

4.3.2 Interpretation

Mr. Ummer Abdulla was a man of faith. In the midst of his pain he was searching God's providence. He had no complaints to God. He was always happy. He also was praying for other patients. He said that it was from this hospital he learned to pray for other patients. When he prayed for other patients God gave strength to him. All his family members were very supportive. They gave him lot of care and support. This case showed irrespective of different religious background of the hospital the patient could use his own belief system to get back to recovery.

Discussion

The religious beliefs of the patients incredibly influence the treatment process. There are several studies done in the West and in the East about religiosity of the patients. Most of the studies showed significant correlation between the faith and beliefs of the patient and recovery process. The present study also showed significant relationship between the belief system of the patients and the fast recovery process. The case studies again reveal the fact that it is not necessary that religious orientation of the hospital can affect contrary to the personal belief system of the patient. Irrespective of Catholic faith context a Muslim patient could express his belief system in the treatment process. It is also well appreciated by the medical team in general that spirituality has a significant influence in the Physical and Psychological healing process of the patients.

Conclusion

Treatment is a complicated medical process, very often depended upon scientifically proved methods either through pharmacological or surgical or both interventions. The modern science heavily depends on its own proven strategies in the application of medicine. However the age old medical treatment was closely linked with spiritual healing. The current study also proves beyond doubt that there is severe illness situation in which the modern medicine is helpless. In such occasions spiritual healing has a significant role either directly or indirectly contributing to the entire healing process. Health professionals always should take into account the influence of the religiosity and spiritual orientation of the clients and patients so that the professionals should give due weightage to spiritual aspects in the treatment process.

References

- Adegbola, M. A., (2006). Spirituality and Quality of Life in Chronic Illness, *Journal of Theory Construction and Testing*, 6 (2): 42-46
- Basu-Zharku, L.O. (2011). The Influence of Religion on Health, *Student Pulse Online Academic Student Journal*, 3 (01): 1-3
- Frank, E., Dell, M.L., Chopp R. (1999). Religious Characteristics of US Women Physicians, *Social Science Medicine*, 49: 1717–1722.
- Kelly, E.W. Jr. (1995). *Spirituality and religion in counselling and psychotherapy: Diversity in theory and practice*, American Counselling Association, Alexandria, VA.
- Koenig, H.G., Bearon, L.B., Hover, M. et al. (1991). Religious Perspectives of Doctors, Nurses, Patients, and Families, *Journal of Pastoral Care*, 45(3): 254-67
- Koenig, H.G. (1998). Religious Attitudes and Practices of Hospitalized Medically Ill Older Adults. *International Journal of Geriatric Psychiatry*, 13: 213–224.
- Maugans, T.A. (1996). The Spiritual History, *Archives of Family Medicine*, 5: 11-16.
- Mickley, J.R., Carson, V., Soeken, K.L. (1995). Religion and Adult Mental Health: State of the Science in Nursing, *Issues in Mental Health Nursing*, 16: 345-360.
- Sullivan, W.P. (1993). “It Helps Me to be A Whole Person”: The Role of Spirituality among the Mentally Challenged. *Psychosocial Rehabilitation Journal*, 16: 125-134.
- Testerman, J.K. (1997). *Spirituality Vs Religion: Implications for Healthcare*, 20th Annual Faith and Learning Seminar Held at Loma Linda, California, June 15 – 27
- Williams, J.A. et al. (2011). Religious attitudes and practices of hospitalized medically ill older adults *Journal of General Internal Medicine*. DOI 10.1007/s11606-011-1781-y

Practical Implication of Art Integration in a CBSE School: A Qualitative Study

Prince C P

Principal, Green Dale School, Rangapara, Assam-784 505

Email: cp princepsw@gmail.com

Abstract:

Art has its history from the time immemorial. Art being the creative expression of human being now integrated in the education system with multifaceted objectives to make learning interesting and to make learning process proactive, interactive, participatory and more effective in cognitive, affective and attitude enhancement levels. This paper is based on a qualitative study in a CBSE school in Assam using ethnographic methodology to analyse and appreciate the practical implication of art integration at primary and secondary education levels. The study used focused group discussion to collect opinions of teachers, students and parents and general discussion based on available literature. The study result shows that art integration created interest in studies and made the students active participants in the learning process. It also enhanced better parental appreciation and made teachers to adopt student-oriented education methods and pedagogy. As the CBSE curriculum insist on art integrated education from the year 2019, the attempt is a valid model to be replicated across the country in India and beyond the border.

Key Words: *Art Integrated Education, Participatory, Creativity, Student-oriented Learning.*

Introduction

Play is the express highway for a child to leap into the world of wisdom and knowledge. Two or three decades ago where no electronic gadgets like mobile phones and tabs were not available stones, pebbles, sand, twigs and leaves were objects of child play and what he or she observed around became theme of their childhood plays. Imagination and creativity made them to scribble around what they felt happy and subject of wonder. They form shapes such as squares, lines and circles with sticks or pebbles, leaning towards mathematical concepts. For young children, scribbling and stacking are first representations of their inner realities that emerge as detailed and imaginative stories if given a chance to describe their artworks.

As children grow, their drawings and sculptures begin to reflect their observations of the world. Nurturing artistic sensitivities and creative responses needs to be the universal thrust of elementary education. Using art to connect to the immediate environment brings out diverse perspectives, enriching the learning processes by enabling students to observe, explore, think and learn without constraints. It is in this process that children engage with emotions and creativity on a cognitive level to integrate and simplify complex learning experiences (NCERT, 2019).

Art, a creative manifested formula of human expressions and feelings has its history contemporary to origin of mankind. In the valley of development people engaged themselves in music, drama, painting, different visual arts and performing arts. “We wrote, we sang, we acted, and we poured ourselves out on every side.’ There was tremendous excitement and cultural richness.” Rabindranath Tagore (NCERT, 2010).

The contribution of Nobel Laureate Rabindranath Tagore pioneered the idea of a relationship between arts and learning. His ideas and thoughts are narrated in a book titled ‘Art- The Basis of Education’ by his student Devi Prasad (1998). Extensive research in the field has established that utilizing visual and performing arts in teaching-learning process encourages creativity, develops problem-solving abilities and improves the ability to handle mental imagery, as well as an understanding for using spaces creatively. This leads to the holistic learning and development of children. The recommendations of the National Curriculum Framework (2005), state that art education at all stages enables students to fully appreciate and experience the beauty of the universe and helps in their healthy mental development. [National Curriculum Framework, NCERT, 2005] The details for using art as a basis for learning have been described in the Position Paper on National Focus Group on Arts, Music, Dance and Theatre (page 7-8). The paper also stresses on the inclusion of art education in the curriculum of school education as a compulsory subject up to class X (NCERT, 2019).

The main purpose of Art Education is to develop creativity, individuality and expression through art activities. Art Education fosters cultural awareness and promotes cultural practices, and is the means by which knowledge and appreciation of the arts and culture are transmitted from one generation to the next. It is therefore mandatory for impressionable minds to get the right exposure to arts in their formative years.

This paper is based on a qualitative study in the context of CBSE board instruction how a Secondary school in the North East India, in the state of Assam implemented 'Art Integration' and its practical implications are qualitatively analysed and discussed.

1. Literature and Research Background

Although Art and Art Forms are age old, integrating art into education is recent development across the world. However, there are multiple models experimented and both quantitative and qualitative researches are taking place in various countries. A few of the research details are reviewed here.

How art integration is different from other forms of art uses? The arts find their way in to elementary, middle, and high school classrooms every day in a variety of ways. The variations can be distilled into three main categories:

1. Arts as Curriculum
2. Arts-Enhanced Curriculum
3. Arts-Integrated Curriculum

1.1 Art as Curriculum

If a school has a music, art, drama, or dance teacher, their approach is most likely and primarily Arts as Curriculum. Students develop knowledge and skills in a particular art form. Often referred to as "arts learning" or "art for art's sake," the programs are guided by national, state, or local standards for each of the art forms. For example, in visual arts, students learn the content, processes, and techniques for two- or three-dimensional work. They learn how the visual arts developed and changed throughout history and engage in creating and analysing works created in a variety of media.

1.2 Arts-Enhanced Curriculum

When the arts are used as a device or strategy to support other curriculum areas, but no objectives in the art form are explicit, then the approach is called Arts-Enhanced Curriculum. For example, students sing the ABCs as a means to other ends-remembering the letters and sequence of the alphabet. However, students are not usually expected to learn about melody, song structure, or develop specific singing skills. Arts Enhanced Curriculum acts as a "hook" to engage students in learning content. Additionally, teachers need little or no training in the art form. Arts-Enhanced Curriculum is often mistaken for Arts-Integrated Curriculum or a distinction is not made between the two.

1.3 Arts-Integrated Curriculum

In Arts-Integrated Curriculum, the arts become the approach to teaching and the vehicle for learning. Students meet dual learning objectives when they engage in the creative process to explore connections between an art form and another subject area to gain greater understanding in both. For example, students meet objectives in theatre (characterization, stage composition, action, expression) and in social studies. The experience is mutually reinforcing-creating a dramatization provides an authentic context for students to learn more about the social studies content and as students delve deeper into the social studies content their growing understandings impact their dramatizations. For Arts-Integrated Curriculum to result in deep student understanding in both the art form and the other curriculum area, it requires that teachers engage in professional development to learn about arts standards and how to connect the arts to the curriculum they teach.

1.4 Arts Integration Definition

Arts integration is an approach to teaching in which students construct and demonstrate understanding through an art form. Students engage in a creative process, which connects an art form and another subject area and meets evolving objectives in both.

1.4.1 An “Approach to Teaching”

It refers to how something is taught rather than what is taught. Every teacher has an approach to teaching, whether or not they are aware of it. Approaches fall along a continuum from traditional, teacher-centred instruction to more progressive, student-centred instruction. Ultimately, our approach is based on our beliefs about how students learn. As an approach to teaching, arts integration relies heavily on the progressive, student-centred or student oriented end of the continuum.

This approach to teaching is grounded in the belief that learning is actively built, experiential, evolving, collaborative, problem-solving, and reflective. These beliefs are aligned with current research about the nature of learning and with the Constructivist learning theory. Constructivist practices that align with arts integration practices include:

Drawing on students' prior knowledge;

1. Providing active hands-on learning with authentic problems for students to solve in divergent ways;
2. Arranging opportunities for students to learn from each other to enrich their understandings;
3. Engaging students in reflection about what they learned, how they learned it, and what it means to them;
4. Using student assessment of their own and peers' work as part of the learning experience;
5. Providing opportunities for students to revise and improve their work and share it with others;
6. Building a positive classroom environment where students are encouraged and supported to take risks, explore possibilities, and where a social, cooperative learning community is created and nurtured.

1.4.2 Students Construct and Demonstrate UNDERSTANDING...

Understand-(1) to get or perceive the meaning of; to know or grasp what is meant by; comprehend (2) to gather or assume from what is heard; to infer 3) to know thoroughly; grasp or perceive clearly and fully the nature, character, functioning, etc. of 4) to have a sympathetic rapport with Constructing understanding of one's world is an active, mind-engaging process. Information must be mentally acted upon in order to have meaning for the learner (Brooks and Brooks, 1999).

Arts integration provides multiple ways for students to make sense of what they learn (construct understanding) and make their learning visible (demonstrate understanding). It goes beyond the initial step of helping students learn and recall information to challenging students to take the information and facts they have learned and do something with them to build deeper understanding.

“In the arts students have central and active roles as meaning makers. This role demands that they not only acquire knowledge but they develop the capacity to reflect on what they are learning and to use it as they interpret and create works of art” (Stevenson and Deasy, 2005, p. 37).

Students' visible demonstrations of learning serve as both formative assessments to guide instruction and summative assessments to determine what students have learned. For example, when students are challenged to work as choreographers to create a dance that demonstrates how the seasons change, they must build their understanding of the vocabulary and concepts shared by science and dance (such as rotate, revolve, cycles, patterns, and change). Their dance will reflect their understandings and provide teachers with a quick, effective means to determine whether individual students know the difference between rotate and revolve, if a group understood the cyclical nature of the seasons, or if the class has mastered how to demonstrate the concept of change through physical movement.

1.4.3 Through an ART FORM

Art form (n) – any branch of creative work in the arts (visual arts, dance, drama, music); the products of creative work.

Students can construct and demonstrate their understanding in many ways. Traditionally, they are asked to communicate their learning through a report or on a test. However, when they are involved in arts integration, their learning is evident in the products they create, such as the dance, painting, or dramatization.

Students can-and should-have opportunities to construct and demonstrate their understandings in various ways. Nationwide, classrooms have become, and continue to become, more culturally, economically, and academically diverse. And yet, a great deal of instruction relies primarily, and sometimes exclusively, on speaking and writing as the way for students to show what they know. Today's research points to the power of learning through a variety of senses or modalities. Teachers are encouraged to plan instruction that engages students in visual, aural, and kinaesthetic learning modalities so that students can actively process what they are learning. The recognition of the arts as powerful modalities for learning is embedded in this part of the definition. By their nature, the arts engage students in learning through observing, listening, and moving and offer learners various ways to acquire information and act on it to build understanding. They also offer a natural way to differentiate instruction as the arts offer multiple modes of representation, expression, and engagement (Wolf, 2008). Additionally, the arts provide an authentic context in which students solve problems such as those encountered by professional artists.

1.4.4 Students Engage in a CREATIVE PROCESS...

Creativity (n) – an imaginative activity fashioned so as to produce outcomes that are original and of value (NACCC, 2007).

The heart of arts integration is engagement in the creative process. Arts integration requires that students do more than repeat (a song), copy (an art project), or follow directions. They must create something that is original and of value. The creative process in the arts is a process not a single event. It includes many interacting phases and each phase is related to every other (Robinson, 2001). There are many descriptions of the creative process. The one provided here is a synthesis of ideas from many different sources. The process is made visible as five open circles: 1) students imagine, examine, and perceive; 2) they explore, experiment, and develop craft; 3) they create; 4) they reflect, assess, and revise, and 5) share their products with others. Arrows indicate the ways one can enter the process and the myriad ways the phases interact.

When students engage in the creative process, they produce original work that communicates their ideas, insights, points of view, and feelings. The creative process can be “messy.” It is difficult to predict what will happen, be discovered, or emerge during the process. Learners engage in inquiry and experimentation as opposed to following rigid, step-by-step rules. Some ideas, once explored, do not work well, while other ideas that were not originally considered, may surface as the perfect solution. If teachers are overly concerned with a “neat” process and product, they tend to make the creative choices for students and direct the outcome. In these cases, the creative process is present, but only for the teacher. It is the teacher’s or teaching artist’s responsibility to set a creative problem or challenge for students to solve, but not to take over and solve the challenge for the students.

1.4.5 Which CONNECTS an art form and Another Subject Area...

Connect (v) – to join, link, or fasten together; unite or bind

A distinguishing aspect of arts integration is its interdisciplinary connections. Connections are made between a specific art form and a specific curriculum area. For example, collage can be connected to the study of geographical regions or choreography can be connected to the study of life cycles. Connections can also be made between a specific art form and a school’s concern or need. Schools often identify a focus for improvement that is

sometimes outside the formal curriculum. For example, the arts can connect to school concerns such as character education/bullying, collaboration, habits of mind, or multiple intelligences.

Both connections-to curriculum or a concern/need-are strongest when they are mutually-reinforcing. In other words, by engaging in learning in one subject, learning in the other subject is reinforced and extended, and vice versa. Rather than imagining connections as two intersecting lines, mutually-reinforcing connections function as a cycle.

For example, students are challenged to create a tableau (motionless stage picture) that depicts 'Indian Independence Movement'. They must examine the social studies content, find out what led to the freedom movement in India forcibly relocating the British reign and establishing the union of Independent India integrating all small kingdoms. They must then distil their understandings into a tableau, which requires them to consider stage composition, characters, actions, relationships, and expression. Because a tableau is so concise, students must return to the social studies curriculum to determine the most significant information. Once the tableau is created, students are challenged to compose short statements that they will speak within the tableau. Again, they must return to the social studies content, synthesize it, and make inferences. With each rotation through the cycle, student learning in both theatre and social studies is reinforced and deepened. The more they learn about the freedom struggle in India, the more their tableaus develop; the more their tableaus develop, the more they build their understanding of history.

1.4.6 Meets EVOLVING OBJECTIVES in Both

Evolve (v) – to develop gradually. This final part of the definition underscores two ideas. First, arts integration requires teachers to set objectives in both the art form and the other subject area. The dual objectives are balanced; students are accountable for significant learning in both the art form and the other subject. Second, just as objectives evolve and challenge students to deepen their understandings in science, mathematics, or language arts, objectives in the art form must also evolve if students are to remain challenged. A student does not learn to express ideas through dance in one session. As students master each objective, they are ready to take on the next, more challenging ones. Teachers monitor student progress and adjust objectives to

keep students challenged and interested within a unit or across a year. As students' mastery grows, so do their feelings of self-efficacy-the belief in oneself and one's ability to achieve.

Teachers are familiar with the evolving nature of objectives in mathematics, language arts and other subject areas. They are less familiar with evolving objectives in the arts. Here is an example in dance: The objective is for students to create and perform a movement phrase set to a piece of music. This objective can begin with small groups of students choosing their movement phrase from a limited set of options and where the teacher counts the beat aloud. Once mastered, the objective evolves as students create their own movement phrase without pre-set options and can recall and repeat it. The objective further evolves as students are able to count the beat on their own. The objective evolves again as students are challenged to refine the quality of their movements. The evolution of objectives can pertain to one specific experience with a dance or can evolve as students have multiple experiences with dance across a school year.

Generally, from international research, it is confirmed that the involvement of art and culture in the lives of children does support their social, emotional, and cognitive well-being and development (Chemi 2014; Winner, Goldstein and Vincent-Lancrin 2013; Holst 2015). For instance, Sefton-Green et al. (2011) emphasise that the so-called Children's participation in artistic and cultural experiences appears to strengthen their ability to concentrate, and to engage in personal and social identity perception, which later in life may increase their confidence and ability to engage in social contexts. Within cultural and artistic experiences, children are offered a safe and challenging environment, resulting in a curiosity-stimulating, identity-building, and intellectually challenging approach that can lead to a positive attitude toward learning and development. The reason that the artistic learning environments are challenging is because they stimulate the child's ability to reflect, to find perspective, and to be critical, and they encourage creative thinking, empathy, and both metaphorical and logical-scientific thinking. Indeed, understanding art and cultural experiences is conducive to the overall development, whereby body, senses cognition, and emotions are developed together.

Artistic environments are often very safe despite any learning, understanding, and development challenges. The reason is that children who get early

positive experiences with learning framed through arts and culture will have an opportunity to maintain a positive desire to develop further artistic experiences. This may contribute to learning readiness, creativity, and mental and emotional resilience later in life (Goleman 1995). Artistic learning environments address some of the children's prerequisites for learning: one learns through empirical, aesthetic, and discursive forms of learning, respectively (Austring and Sørensen 2006; Hohn and Pedersen 2001), and through their sensory language, arts and cultural experiences offer the opportunity to talk to both a real and a fantasy world—therefore addressing different learning approaches.

Ensuring accessibility to art and culture for school children means investing in community-building, and encouraging the development of resilient, robust, innovative, and competent individuals. This accessibility (Gardner 1994) is both physical and logistical (i.e. children actually have the opportunity to experience art and culture), but are also of mental and emotional nature (the cultural and artistic offerings must be developed with children, are meaningful in the child's life and important for their development).

According to Perkins (1994), “bad habits of looking and thinking [that are] deeply rooted in the human organism” (p. 25) can be re-trained through positive habits, and the arts offer excellent cognitive training. The challenges hidden in the arts demand the activation of deep thinking, which happens to be rare in the shallow approach to art that is more typical in the mass culture of consumerism. Global trends are outlined in Wagner (2015), who considers the UNESCO research (Bamford 2006) and the OECD research (Winner and Vincent-Lancrin 2013) and Akuno et al. (2015) in this area to be the most recent and relevant landmarks in this field.

Summarising the empirical contributions of these studies, Wagner (2015) emphasises a possible taxonomy, founded on “five basic approaches, paradigms, or objectives” (p. 25) to arts education: (1) the art-specific approach (artistic skills for their own sake); (2) the economic approach (economic output of creative industries); (3) the social approach (community projects with the arts); (4) the educational approach (integration of the arts in education); and finally (5) the political approach (building citizenship through the arts).

Some empirical studies are cited as evidence for the possible results of Learning through the Arts:

Arts and disadvantaged groups: In an Elementary School catering to mixed social groups in Washington, employing the arts in academic classrooms was associated with improvement in test scores in Mathematics and English (Donna St. George, 2015). In particular, students living in poverty benefitted from the integrated approach. The researcher further emphasized that interest in the integration of arts is growing globally, driven by increasing research that points to the academic, social and personal benefits to students. Arts create innovative processes: Nobori (2012) was amazed at how the arts unlock pathways to learning. The process of integrating arts may seem like conducting art projects in classroom settings, but becomes a teaching strategy that seamlessly merges art experiences with core curricula to build connections in engaging learning contexts. For instance, students choreographed a dance using locomotor and non-locomotor movements to demonstrate their understanding of the solar system.

Arts and cognitive processes: Benegal (2010) stated that arts lead to dramatic changes in the brain such as strengthening the ‘attention network’. Brain areas involved in music are also active in processing language, auditory perception, attention, memory and motor control. Art Education is a much-needed way of promoting balanced mental development in today’s knowledge-based world.

Arts and Socio-emotional development: Based on his research, Harvey (1989) found out that art process relates to cognition, achievement, motivation, and self-concept in elementary school students. In essence, arts when integrated with learning process work splendidly as affective education. “The use of art, movement, and music can result in metaphor making and problem-solving of social/emotional conflicts. In this way the creative arts practices unite the cognitive aspect of creativity and the therapeutic aspect of behavioural and personality change. Because of this integration of thinking and feeling, the creative arts therapies offer an opportunity to positively affect social/emotional and academic behaviour”

Arts as Pedagogy: Puri and Arora, (2013) reviewed the use of Art Integrated Learning in 107 classrooms of 17 Municipal Corporation in New Delhi and found (i) remarkable difference in school environment, (ii) increased level of

student involvement in the learning process, (iii) significant improvement in students' attendance, (iv) improved academic achievements and (v) more confidence and openness to handle new situations than their peers in the non-AIL classrooms.

The objectives put forward by NCERT is equally important to understand art integrated learning. Hence it is included prior to conclusion of literature.

1.5 Objectives of AIL

The pedagogy contained in the art-based process accommodates space for varying pace of individual children. Learning and developmental needs of all children including children with special needs, weaker socioeconomic backgrounds and diverse cultures benefit from performance and expression through the medium of art. Art encourages, promotes and implements learning and living to be part of natural process. Discovery, observation as well as experimentation makes learning concrete, creative and rewarding for one and all. Artwork of the learners brings in the vibrancy of their social contexts. Art is a journey where people are co-travellers sharing and moving together as a team. It also breaks barriers of language as art has its own language. It helps children belonging to different backgrounds build communication and interaction beyond barriers. In small ways children learn about the coexistence and multiplicity of social realities. Celebrations like sports day, health mela, science fair and festivities in school use arts to enhance appeal and add colours of warmth and welcome. Integrating local arts and crafts in different school spaces like classrooms, corridors, different rooms, and outdoor area creates home school linkages besides the school environment becoming attractive and child friendly. Integration of arts with learning promotes:

- 1.5.1 Children's need to experience processes rather than strive only for a pre fixed goal
- 1.5.2 Experiential learning of academic content leading to holistic learning
- 1.5.3 Interdisciplinary connections
- 1.5.4 Expression with freedom and opportunity for self-reflection
- 1.5.5 Development of different domains
- 1.5.6 Possibility for children with different social backgrounds to interact on one common platform
- 1.5.7 Active participation of every child

- 1.5.8 Growth of social skills by giving students experiences of working as a team
- 1.5.9 Emotional expression and stability
- 1.5.10 Appreciation for diversity and cultural confidence
- 1.5.11 Observation, experimentation and building scientific temper
- 1.5.12 Aesthetic sensibility and respect for national and cultural heritage

Further there should be stages of objectives from pre-primary upto senior secondary level. The strategies for implementation must be planned, which includes capacity building of the stakeholders chiefly the teachers and planning of activities, time and resources. Strategies for AIL based assessment, the tools and techniques for assessment and do's and don'ts of assessment should be carefully designed. The role of the head of the institution, teachers and students also should be carefully planned prior to implementation of AIL (NCERT, 2019).

All the above studies prove that how art integration in education is important and the present study shows how an attempt is made in a CBSE school for art integration in the academic year 2019-20.

2. Methodology

The approach of the study was using a qualitative methodology using ethnography method and the data were collected from the teachers and students using Focus group discussion. A secondary school in the state of Assam who used art integration as per the instruction of CBSE in the year 2019-2020 was the study unit.

3. Art Integration Practicum

Central Board of Secondary Education (CBSE) New Delhi when declared and instructed all its 18,006 affiliated schools in India for art integrated education, Green Dale School at Rangapara, Assam had already taken a lead by planning to implement different art related club activities and multidisciplinary exhibition for the academic year 2019-2020. Hence it was an easy task to orient the teachers towards art integrated education system.

Although different forms of art were familiar to most of the teachers and students, art integration was totally new to the school. As per the instruction of CBSE board two hours per week were allotted for different art clubs

such as dance, music, drawing, craft and theatre. Different curricular and non-curricular clubs were designed to make art integration more effective and practical. Apart from the theoretical input simulating group exercises were conducted in the teacher training sessions. Life skill workshops were given to students to prepare them to assume student-oriented learning.

The pre-primary teachers were subsequently prepared their children for kids' fest in which the whole lessons in different subjects were converted into art forms, not as art enhances but as art integrated and every student was trained. The fest was amazing and it captured the attention of the parents and the public, how the art forms could be effectively integrated in class room learning. Kids who otherwise found the school allergic were enthusiastic to come to school after such art integrated approach introduced in class rooms.

Multidisciplinary exhibition was an opportunity for primary to secondary class students to creatively express their learning in different subjects and language studies. One of the teachers commended, 'after the multidisciplinary exhibition those introvert students became very active, and they began to respond to class room discussions. The students usually not ready to volunteer for any assignment started demanding assignments and was extremely happy to undertake any project'.

Classrooms became vibrant and active. The response of the students became more proactive. Teaching became more participatory. Home works became more experiential. Pedagogy became student friendly and student oriented. Some of the opinions of teachers and students in the focused group discussion is helpful for analysis.

'Primary data and secondary data, the concepts I found it difficult to understand', said Swetha of class IX, 'but the story I could create as per the guidance of the teacher helped to comprehend it, say, if I am present in a road accident spot what I observe is primary data and suppose the same accident news I watch in TV news is secondary data'. The stories, poems, anecdotes, drama and different art items students generated based on the lessons they had to learn made the learning meaningful and interesting.

Pooja finds it tough to understand Physics. She says, 'You know, Physics is a big deal, certain terms like velocity, momentum etc., but it so happened as I was cycling in a slop I fell down., I do not know what happened to me

and back home I reflected ... my speed.. momentum..., velocity..., all I tried to connect and Physics became experiential, realistic and hands on learning for me'. It was indeed experiential not only for Pooja but for many Green Dale students like her who tried to integrate their day to day experience into class room learning.

Clinton remembers how teacher gave him Geography project and the drama script he wrote made him into the world of discoveries, eye opening realities of Geography lessons. 'Drama, I feel is not an independent entity', said Mr Sharif, English teacher. 'The lesson I explained and told students to make a drama script and enact. They did, with unusual sense of expressions and emotions, dialogues that catch up your memory, actions that charge your eyes. Yes, it was indeed a wholesome experience of learning, for me and the students'. Sharif was literally into tears, a glimpse of joy and litany of satisfaction.

'When it is a movie or drama, it is easy to remember and we learned the slogans watched movies of holocaust, Indian Independence Movement, film Gandhi and all, made the history lessons tangible', says Raghuram class IX student.

'Literally we went for an international trip, and I had to teach my social science students, the culture and civilisation of different countries. It was impressive, enlightening that the students had a first hand taste of all, otherwise I had to explain in boring lecture series', said Gulmir Singh, the social science teacher.

'Music and chanting of Mantras made us fix in formulas of Mathematics', said Manisha of class VII and her Mathematics teachers confirmed the same.

'We dance for fun, to relax but to learn a unique experience', said Sikha, how dance steps and the choreography based on class room lessons improved her attention, concentration and brain activities. 'Dance, they love it, pouring out like a Monsoon shower, all feelings and emotions, what not to express, yes the lessons I told them to choreograph, they did it wonderfully well, beyond my imagination.., the flying colours of young minds made it unusual and extraordinary..., that only I could say', Kavita mis literally wept as she shared her dance generated lesson reading.

‘I took them home, and they acted out what happens there daily. It was amazing. They cooked up the story, real as it would be, delicious recipe, the chit chats at home, the petty fights or sibling rivalry if you call, but everything doesn’t need an extra explanation, crystal clear, drama or movie, I do not know. But they did it, making the Hindi lesson a memorable yummy food’, the flowering smile in the lips of Soumya madam, the Hindi teacher, expressed it all.

‘I made the students to act like wild animals and domestic animals and how do they behave. I was taking Moral Science subject, leading them to the difference in human behaviour domesticated and refined. And the children identified how human anger is like a ferocious lion or tiger and should be avoided and the thanks giving attitude of a pet dog, waving its tale and in turn we kids should be thankful for all generous service we receive from parents, teachers and others, said Ms. Kavita, class II teacher. She also added that children were emotionally involved and it created genuine interest to learn the lesson’.

‘Crafts of course, we could make models. We used clay, water, leaves, paper, bamboo and variety materials to recreate the vibrant characters in our Hindi, Assamese and English lessons. Language learning usually tough for me became very interesting and enriching’, said Kamala Das of class VIII.

‘We were creating knowledge, out of the blue, all remarkable experience, when teacher gave the lead and we discovered, no we invented, yes it was innovative, creative and euphoric’, the feelings of knowledge creation was evident in Sarat’s firm response. ‘I was teaching them a poem’, the English teacher Mrs. Piyush was much delighted to explain her class room experience. ‘I told them to imagine the situation of a mother caring the child and write what she does for the child. They posed, reflected, wrote, beautiful poems and I was impressed the way they wrote, the creativity they indulged in and the expressions they captured’.

‘Portraits, yes they did it, poets and writers reliving in 21st century and their poems recreated and they sung, not in Beethoven’s symphony but in folk lyrics native tune that drew them to nostalgic memories, perhaps to babyhood or transformed them into Davinci or Michael Angelo of the medieval century..., we all celebrated and I never knew learning could be such a mesmerising magic’. The art integration was taking a pictorial reality in the English classroom of Mr. Kishore.

‘The nation is witnessing several people’s movements in the current political scenario. I could draw students repeating patriotic slogans that made our freedom fighters to chase the foreigners. I feel the National Movements had a rebirth when they echoed those slogans of national integrity and patriotic liberalism and students equally became freedom fighters of current times’, Gulmir Singh was happy about his class.

‘All art related club activities made us to think creative, to look into lessons out of the box, made learning a joyful experience, lessons which otherwise boring became interesting, school became second home, perhaps like enjoying an ice cream of my choice or having a yummy food in grand party or what not should I say..., Sneha was in full of her colours to share it all.

The opinion of parents were neither different. Although they were bit apprehensive of the time taken for activities seems to eat up the time for lessons, when they new that it created interest in students and motivated them for study, parents were optimistic. One of them said, ‘what you have done at Green Dale is the need of the hour. Education should not be a burden for students, it should motivate and make students enthusiastic to learn. You have done it in right time and right space. I wish let all CBSE school follow the Green Dale method’.

Watching the kids fest program another parent commented that we never knew that learning is such interesting and I want to sit again in UKG. Of course, he was joking with a sense of appreciation and encouragement.

A parent in class X was satisfied only when she learned the fact that school was not focusing art education but art integrated education and lessons are taught with a different approach and indeed it motivated her child for board examination.

Although satisfactory attempt was made in art integration the teachers are not fully happy that they feel, miles to go before they rest, and they are right that sufficient home work is required to make art integration an effective approach in the long-term process of teaching.

4. Analysis and Discussion

It was a beginning for all of them both for teachers, students and parents. The sky is not free from clouds of anxiety and questions. However, the first-hand experience made everyone feel impressed. The art integration practicum

in Green dale School class rooms open up solid discussion in different similar CBSE and State schools in Assam and across North East states to the extent that they plan a North East level conference for schools on art integration.

The teachers and students agree that all is interesting but time consuming. The parents need to get sufficient assurance that everything on right track.

The ethnographic study shows that feelings of the stakeholders are not cumbersome. There is a sense of enthusiasm and sigh of satisfaction reflected in every corner.

The study has brought out certain areas of improvement. Strategical planning is lacking and much more rigorous training and motivation is required from the part of teachers to get up from the comfortable citadel of lecturing to student-oriented pedagogy of participative and interactive nature of teaching. Students love to think out of the box. The life skill orientation helped them to develop critical thinking and creative thinking. Multidisciplinary exhibition helped in communication skill development.

Some of the observation of UNESCO and NCERT contributes to the importance of art integrated education.

UNESCO outlines the importance of Arts Education and its essential role in improving the quality of education. The Road Map endeavours to define concepts and identify good practices in the field of Arts Education. It is meant to serve as an evolving reference document which outlines concrete changes and steps required to introduce or promote Arts Education in educational settings (formal and non-formal) and to establish a solid framework for future decisions and actions in this field.” (UNESCO, 2006) Based on deliberations during and after the World Conference on Arts Education, which took place in 2006 in Lisbon, Portugal, the Road Map for Arts Education aims to explore the role of Arts Education in meeting the need for creativity and cultural awareness in the 21st Century, and places emphasis on the strategies required to introduce or promote Arts Education in the learning environment.

The National Council for Education Research and Training (NCERT) created the Department of Education in Arts and Aesthetics (DEAA) as a separate Unit in 2005 to promote all forms of arts in schools by bringing it into the

mainstream of country's education system through various activities as development, training, research, orientation and to unfold the aesthetic potentialities of children for enabling them to become contributing citizens. The opinion of teachers who participated in NCERT training program could be useful for discussion.

'Children attending Art Integrated Learning (AIL) based classes were seen to be more confident, interactive, responsible and helpful. Thus, impressed by the outcome of AIL classrooms other teachers also started applying it in their classes. There were always sounds of clapping, singing etc. in these classrooms and attracted students towards this learning process. Overall academic level of children was uplifted; their participation in Zonal and inter zonal competitions increased remarkably, number of Merit Scholarships also went up' (Ms. Veena Gandhi Principal, Nigam Pratibha Vidhyalya New Chaukhandi New Delhi-110018, NCERT, 2019).

Another teacher's observation was, 'Art integrated learning (AIL) approach has proven to be one of the best approaches so far in my opinion. It is because of AIL that my rapport with my students became stronger and I could understand them better. It enabled me with a skill to explain the subject content in an easy and interesting manner. My students got better clarity of subject knowledge and their involvement in learning process increased. It was because of AIL they have started expressing themselves with more confidence and clarity. Their interest in art activities brings them to school on time and they are reluctant to leave. AIL has given students the opportunity to think freely; when they started participating in different art activities, they became more enthusiastic, their curiosity increased, they started exploring and creating new things. They started cooperating and helping each other willingly. AIL has made them achieve Learning Outcomes of Mathematics and Science without much efforts and they are no more afraid of class-tests. Their ability to communicate, listening to each other has increased many fold (Vikram Sonba Adsul National teacher awardee 2017 ICT National Teacher Awardee 2017 Z. P. P. School, Bandgarwasti, Tal-Krajat Dist. Ahmednagar, Maharashtra, NCERT, 2019).

Thus the teachers, students and parents who had the feel of art integrated education had positive outlook and the opinions derived in Green Dale study was not different either.

5. Suggestions and Recommendations

The CBSE circular gives guidelines for art integrated education. However it is not sufficient for majority of the schools in the country. Hence certain suggestions based on the study would be useful for further research and deliberations.

5.1. The Role of CBSE: Regional and state level trainings should be organised.

CBSE should have a project to fund interested schools to conduct workshops, conferences and training program in art integrated learning. The board also can revise the syllabus and course curriculum to enhance AIL in its affiliated schools. It can also introduce grace mark for those students who use it and encouraging incentives for teachers and schools who initiate to introduce AIL.

5.2 The Role of Schools and Teachers: In an AIL classroom, a teacher is expected to play the role of a mentor, guide and a facilitator of students who helps facilitate the learning process (NCERT, 2019). Although AIL is difficult initially, in due course of time it considerably reduces the burden on teachers and make teaching student oriented. Eventually it saves time and energy in the whole process of teaching. Hence teachers should be trained and motivated by schools and teachers should explore the possibility of implementing it effectively in their respective class room environment. The school should redefine discipline in class rooms and student opinions or initiatives should be encouraged. As famous pedagogist Paulo Freire says, 'student should not be passive instruments but active agents of education'. Strategic planning is necessary for each class with proper objectives and criteria to fulfil. Planning about resource mobilisation is also an important task entrusted with teachers. Be flexible in the process of integrating art lessons to teach. Process is important and not product and so encourage every little effort of the student and never belittle them for any fault of performance. Remember that failure is also a learning. Assessment criteria must be properly planned and implemented redefining objectivity in individual performance.

5.3 The Role of Students: AIL brings a major role to students, motivating them creating interest in study, and to make learning a liberative and generative process. Hence, they need to co-operate with teachers and be ready to

involve in activity-oriented learning system. Considering students as active agents of learning, appreciate and get the support of teachers in the learning process. Involve in team work and make AIL more participatory. Encourage other students who are poor in intelligence or understanding.

5.4 The Role of Parents: They should always remember that education is not information dissemination process, but it is knowledge creation process. The cognitive, affective and attitude level growth and development of your child is more important than the information he collects. Hence, encourage child in constructing knowledge and always appreciate the effort and not the outcome. Encourage children to make use of the time effectively through proper planning and effective and diligent uses of resources.

Conclusion

Art Integrated Learning is a process and not a product or outcome. Therefore, none of the stakeholders in education should not have over expectation about its results. It is a method of making education process interesting and effective. Its practical implications are based on cognitive, affective and attitudinal changes in the students and consequent proactive transformation of the student towards learning. More than the content of learning the process of learning takes priority. Ultimately it motivates students, make them goal oriented and apart from career seekers they modify their life individual, familial and societal useful for themselves and others. Education thus becomes a learning process of celebration of life, which every student love to cherish throughout the life. Art Integrated Learning should be practised in all possible schools to create a better world of happy learning.

References

- Akuno, E., Klepacki, L., Lin, M. C., O'Toole, J., Reihana, T., Wagner, E., and Restrepo, G. Z. (2015). Whose Arts Education?. M. Fleming, L. Bresler, and J. O'Toole, (Eds.), *The Routledge International Handbook of the Arts and Education*, New York, NY: Routledge, 79–105.
- Austring, B. D., and Sørensen, M. (2006). *Æstetik og læring*, Copenhagen: Hans Reitzels Forlag.
- Bamford, A. (2006). *The Wow Factor: Global Research Compendium on the Impact of the Arts in Education*, New York, NY: Waxmann.
- Brooks, J. G., and Brooks, M. G. (1999). *In Search of Understanding: The Case for Constructivist Classroom*, Alexandria, VA: ASCD.

- Chemi, T. (2014). *In the Beginning Was the Pun: Comedy and Humour in Samuel Beckett's Theatre*, Aalborg: Aalborg University Press.
- DEAA, NCERT (2012), Report on National Seminar on Art Integrated Learning.
- NCERT (2019), Report on Art Integrated Learning Guidelines.
- CBSE (2019), Report on Art Integrated Education.
- Devi Prasad (1998). *Arts the Basis of Education*, National Book Trust.
- Donna St. George, (2015). More Schools are Working to Integrate Arts in Classroom, Washington Post.
- Gardner, H. (1994). *Frames of Mind. The Theory of Multiple Intelligences*. London: HarperCollins.
- Goldstein, T. (2010). *The Effects of Acting Training on Theory of Mind, Empathy, and Emotion Regulation*, Ph.D. dissertation, The Graduate School of Arts and Sciences, Boston, MA.
- Goleman, D.(1995). *Emotional Intelligence, Why It Can Matter More Than IQ*. New York City, NY: Bantam Books.
- Hohr, H., and Pedersen, K. (2001). *Perspektiver på Æstetiske Læreprocesser (Perspectives on Aesthetic Learning Processes)*, Frederiksberg: Dansklærerforeningens Forlag.
- Mariko Nobori (2012). 'How the arts unlock the door to learning', Edutopia, George Lucas Foundation for Education.
- Molly Zhou and David Brown (2018). *Arts Integration in Elementary Curriculum*, (2nd Edition), Education Open Textbooks, <https://oer.galileo.usg.edu/education-textbooks/3>
- NACCC (National Advisory Committee on Cultural and Creative Education) (2007), In P. Cochrane and M. Cockett, *Building a Creative School: A Dynamic Approach to School Development* (p. 7). Stoke on Trent, UK: Trentham Books.
- NCERT (2005), National Curriculum Framework.

- Perkins, D. N. (1994). *The Intelligent Eye: Learning to Think by Looking at Art*. Los Angeles, CA: Paul Getty Trust.
- Robinson, S. K. (2001). *Out of Our Minds: Learning to be Creative*, West Sussex, England: Capstone Publishing.
- Sefton-Green, J., Thomson, P., Jones, K., and Bresler, L. (Eds.). (2013). *The Routledge International Handbook of Creative Learning*, New York, NY: Routledge.
- Steve Harvey (1989). Creative Arts Therapies in the Classroom: A Study of Cognitive, Emotional, and Motivational Changes, *American Journal of Dance Therapy*, 11(2): 85-100.
- Stevenson, L. M., and Deasy, R. (2005). *Third Space: When Learning Matters*, Washington, DC: Arts Education Partnership.
- Wagner, E. (2015). Local-Global Concepts in Arts Education. in S. Schonmann, (Eds.), *International Yearbook for Research in Arts Education 3/2015: The Wisdom of the Many-Key Issues in Arts Education*, M^unster, NY: Waxmann Verlag, 24–29.
- Winner, E., Hetland, L., Veenema, S., Sheridan, K., Palmer, P., and Locher, I. (2006). Studio Thinking: How Visual Arts Teaching Can Promote Disciplined Habits of Mind, *New Dir. Aesthet. Creat. Arts*, 189–205.
- Wolf, D. P. (2008). Building and Evaluating Freedom Machines: When it Arts Education a Setting for Equitable Learning?. In D. Glass (Ed.), *Contours of Inclusion: Frameworks and Tools for Evaluating Arts in Education*, Washington, DC: VSAarts, 5-6

Role and Support of Animal Husbandry Programmes for the Promotion of Farmers in Kerala: A Study from Kasaragod

Karunakaran N *, Sareena M

Department of Economics, EKNM Government College, Kasaragod,

Kerala, India, 671314

E-mail: *narankarun@gmail.com

Abstract: *The study examined the role and developmental support of animal husbandry programmes for the promotion of farmers in the rural areas of Kerala and revealed the dependence on their livelihood. Livestock includes cow, sheep, goat, buffalo and poultry. Majority of the farmers have only primary level education. Climate change, low availability of fodder and feed, disease and lack of veterinary services are the major problems. Absence of good access to market and unavailability of various incentives for improving the care and breeding of animals create lot of problems to farmers.*

Key Words: *Animal Husbandry, Role and Support, Programmes, Farmers, Kerala.*

Introduction

Animal husbandry is a branch of agriculture concerned with the care and management of livestock and deals with the feeding, breeding, housing and health care of them for getting maximum benefits. It includes day to day care, selective breeding and rising of livestock. The livestock sector has emerged as a vital sector ensuring a more inclusive and sustainable agriculture system.

Animal husbandry and agriculture are the backbone of Indian rural economy. The progress is linked with the advancement in these two sectors and scientific education of farmers and rural people (Karunakaran N, 2017). India occupies third position in the global production of eggs and sixth position in the global production of poultry. About 20.5 million people depend on livestock for their livelihood. Livestock contributed 16 percent to the income of small farm households as against an average of 14 percent for all rural

households. This sector contributed 4.11 percent GDP and 25.6 percent of total agricultural GDP.

India ranks first among the world's milk production since 1998, and has the largest cattle population. Milk production in India during 1950-51 to 2017-18 has increased from 17 million tonnes to 176.4 million tonnes as compared to 165.4 million tonnes during 2016-17 recording a growth of 6.65 percent. FAO reported 1.46 percent increase in world milk production from 800.2 million tonnes in 2016 to 811.9 million tonne in 2017. The per capita availability of milk in the country during 1950-51 was 130 gram per day increased to 371 gram per day in 2017-18 as against the world estimated average consumption of 294 grams per day during 2016-17. This represents sustained growth in the availability of milk and milk products.

Department of Animal Husbandry in Kerala came into existence in 1956. The major activities of the department includes veterinary services and animal health care, disease eradication programmes, cattle, goat, pig and poultry development programme, control of diseases, extension and training programme to farmers and veterinarians production of biological. At present, about 2638 institutions are functioning in the Animal Husbandry Department. Majority of livestock population in the state is concentrated in villages and agricultural labourers are engaged mostly in cattle rearing and allied activities (Avinash Kishore, 2016).

Livestock related interventions are found to be a successful strategy for poverty alleviation all over the world and large percentage of rural population depend on livestock rearing to earn their livelihood (Jaya Jumrani and BIRTHAL P S, 2015). Around 600 million poor small holders in the world keep nearly one billion heads of livestock and livestock contribute 40 percent of the global value of agricultural output and support the livelihoods and food security of almost a billion people. Dairy farming is a major livestock enterprise in India and Kerala where small and marginal farmers are engaged to earn their livelihood. Animal husbandry programmes ensures proper guidance and encouragement to the farmers in each panchayat. It plays an important role in generating employment and income to the weaker sections of the population and its facilities are available in all panchayat and municipalities. In this

context, the role and developmental support of animal husbandry programmes, the awareness and effectiveness of these programmes were attempted in this study.

Review of Literature

Chauhan A K, et al. (2004) attempted the variability in milk production among sixteen major states in India. Jain, et al. (2004) assessed the technical efficiency of dairy farms in developing countries. Sarbjeet Singh (2007) analyzed the distribution pattern of land and livestock among different socio-economic groups in the rural areas of Himachal Pradesh. Dikshit A K and Birtha P S (2013) analyzed positive environmental externalities of livestock in mixed farming systems of India. Anjani Kumar (2013) studied the structural transformation in dairy sector of India. Bardhan D K, et al. (2015), Ranjith Kumar E G (2015) and Prem Chand and Smita Sirohi (2015) evaluated sustainable livestock development. Prajapati P M (2016) studied the major economic constraints faced by dairy farm women. Harmeet Singh (2017) revealed a holistic approach for rural development dairy farming. Dinesh Kumar M and Singh O P (2017) evaluated the economics of Dairy Farming and pointed out the view of identifying interventions for improving the economics of dairy farming and understanding its importance in nutritional security of rural households. Marcella Guarino (2019) analyzed the environmental impact of livestock farming and precision livestock farming as a mitigation strategy.

Materials and Methods

The study was conducted among the farmers of Kasaragod district and two panchayats, Balal and Kinanoor Karinthalam were selected for primary data. For primary data sixty samples were taken. Information related to services provided was directly collected from officials. Secondary data were collected from reports, journals, magazines and websites. Opinion of farmers was used to analyze the effectiveness of service provided and is classified into highly effective, moderately effective and low effective.

Results, Analysis and Discussion

Table 1 show that 55 percent of farmers have only primary education and 20 percent have upper primary.

Table 1: Educational Status of Livestock Farmers

Sl. No.	Category	Total	Percent
1	Illiterate	5	8
2	Primary	33	55
3	Upperprimary	12	20
4	Highschool	6	10
5	Highersecondary	2	4
6	AboveHighersecondary	2	4
Total		60	100

Source: Primary data

Among the farmers, 48 percent are engaged in livestock farming and the rest 23 percent in agriculture and 29 percent in other activities. Majority of farmers have more than ten years of farming experience (Table 2).

Table 2: Occupational Status of Farmers and Farming Experience.

Sl. No.	Occupational status			Farming experience		
	Category	Total	Percent	Category	Total	Percent
1	Livestock	29	48	Less than 10 year	15	25
2	Agriculture	14	23	10 to 20 year	20	34
3	Others	17	29	More than 20 year	25	41
Total		60	100	Total	60	100

Source: Primary data

Animal husbandry and dairy development play a vital role in rural economy to increase their income. In table 3, out of 60 farmers, 8 percent of farmers possess below 25000 rupees annual income from livestock and 42 percent was the highest and the income group between 25,000 to 5,000 rupees. 24 percent of farmers possess income between 50,000 to 75,000 rupees. 18 percent have income between 75,000 to 10,000 rupees. 5 farmers have more than 100000 rupees income from livestock.

Table 3: Annual Income from Livestock Farming

Sl. No.	Annual income from livestock	Total	Percent
1	Below 25000	5	8
2	25000 - 50000	25	42
3	50000 - 75000	14	24
4	75000 - 100000	11	18
5	Above 100000	5	8
Total		60	100

Source: Primary data

Animal husbandry generated gainful employment in the rural sector, particularly among the landless labourers, small and marginal farmers and women. Livestock farmers engaged mainly in poultry, cow, goat, buffalo, rabbit, and pig and so on (table 4).

Table 4 shows different livestock rearing engaged by farmers in Balal and Kinanoor-Karinthalam Grama panchayat of Kasaragod. In Balal 39 percent farmers engaged in poultry birds where as 41 percent in Kinanoor-Karinthalam Grama panchayat. In both the panchayat, another major livestock farming engagement is cow, consisting 28 percent and 32 percent respectively. Farmers engaged in goat rearing consists 20 percent and 22 percent in respective panchayats.

Table 4: Livestock Rearing Engaged by Farmers

Sl. No.	Livestock	Different livestock rearing				Total
		Balal panchayat		Kinanoor-Karinthalam panchayat		
		Livestock in numbers	Percentage	Livestock in numbers	Percentage	
1	Poultry	35	39	38	41	73
2	Cow	25	28	29	32	54
3	Goat	18	20	20	22	38
4	Buffalo	5	6	3	3	8
5	Pig	4	5	1	1	5
6	Rabbit	2	2	1	1	3

Source: Primary data

Animal husbandry is one of the most important occupations of farmers. Various factors adversely affected their production which includes problem like diseases, higher cost of feed, marketing difficulties, lack of irrigation facility, inefficient veterinary services, climate change, lack of patent drugs, lack of vaccination and lack of knowledge about animal husbandry management.

Table 5: Major Problems Faced by Livestock Farmers

Sl. No.	Problems	Total numbers of farmers	Percent
1	Diseases	25	21
2	Higher cost of feed	9	8
3	Marketing difficulties	2	2
4	Lack of irrigation	3	3
5	Insufficient veterinary services	8	7
6	Climate change	11	9
7	Lack of patent drugs	13	11
8	Lack of vaccination	9	8
9	Lower price	19	16
10	Lack of knowledge about management of livestock	18	15

Source: Primary data

Table 5 shows the major problems faced by livestock farmers in Kasaragod district. The most serious challenge faced by the farmers is the disease of livestock; 21 percent of the farmers are facing this problem. 8 percent of farmers facing feeding cost, 2 percent marketing difficulties and 3 percent of farmers faced lack of irrigation facilities. Another important problem faced by farmers is insufficient veterinary services. 9 percent farmers faced climate change and 11 percent faced the problem of lack of patent drugs. 8 percent faced the challenges of lack of vaccination services and 15 percent faced lack of knowledge about livestock management. Awareness regarding the functioning of panchayat is essential for the farmers to get its advantage. Table 6 revealed the source of information through which the farmers get information about the activities of animal husbandry programme. 40 percent of the farmers know the information through other farmers and the rest through other sources.

Table 6: Source of Information about Animal Husbandry Programme

Sl. No.	Source of information	Numbers of farmers		Total	Percent
		Balal	Kinanoor-Karinthalam		
1	News paper	3	6	9	15
2	TV/Radio	4	4	8	14
3	Other farmers	14	10	24	40
4	Panchayat members	4	5	9	15
5	Not aware	5	5	10	16

Source: Primary data

Every farmer receives various services to promote production, processing and marketing of livestock and poultry and their products through augmentation of production of milk, meat, egg and wool. Animal health care service and prevention of animal diseases is a priority for maintenance of a healthy stock for optimum production. Infrastructure for breeding, feeding and management of livestock and poultry, processing of milk, meat and egg and marketing of livestock products is also given due importance. Besides, required training and extension support to livestock producers is also provided.

Table 7: Support and Assistance to Livestock Farmers

Sl. No.	Various services	Numbers of farmers		Total	Percent
		Balal	Kinanoor-Karinthalam		
1	Subsidy	25	27	52	20
2	Treatment to livestock	20	21	41	16
3	Vaccination	19	20	39	15
4	Feed	22	21	43	17
5	Poultry-yard	23	24	47	18
6	Insurance	5	6	11	6
7	Training	9	10	19	7
8	Loan	1	1	2	1

Source: Primary data

The support and assistance to livestock farmers include various subsidies to farmers, treatment for livestock, vaccination of livestock, feeding, and insurance protection, training to the farmers, poultry-yard, and loans. Table 7 shows that 20 percent got support in the form of subsidies and 16 percent got treatment for livestock; 15 percent got vaccination facility, 17 percent got benefit for feed and 18 percent got poultry yard. 6 percent have received insurance and other 7 percent of the farmers were trained in this field.

Animal husbandry and poultry farming are expected to play an important role in supplementing the limited income and employment opportunities particularly for the small and marginal holding. Every panchayat provide various services to farming community to help the farmers through, subsidy, veterinary services, feeding, poultry-yard, insurance, loans, training and so on. The effectiveness of each service is discussed in table 8 and is revealed that many of the services do not reach to farmers. Subsidy is effectively provided in Karinthalam Grama panchayat compared to Balal. Veterinary services like treatment and vaccination for livestock is more effective in Kinanoor-Karinthalam than in Balal. For feeding service, 53 percent is effective in Balal and 50 percent in Kinanoor-Karinthalam. Insurance is less effective in both the panchayat where as training programmes is more effective and provision of loans are less effective.

Table 8: Effectiveness of the Services Provided to Livestock Farmers

Services	Balal			Kinanoor-Karinthalam		
	Effectiveness			Effectiveness		
	High	Moderate	Less	High	Moderate	Less
Subsidy	17 (57)	7 (23)	6 (20)	18 (60)	8 (27)	4 (13)
Treatment	14 (47)	9 (30)	7 (23)	15 (50)	9 (30)	6 (20)
Vaccination for livestock	13(43)	8(27)	9(30)	14(47)	5(17)	11(36)
Feed	16(53)	10(33)	4(14)	15(50)	13(43)	2(7)
Poultry- yard	18(60)	9(30)	3(10)	21(70)	7(23)	2(7)
Insurance	3(10)	2(7)	25(83)	2(7)	1(3)	27(90)
Training	12(40)	9(30)	9(30)	13(43)	13(43)	4(14)
Loan	2(7)	2(7)	26(86)	2(7)	1(3)	27(90)

Note: Figures in Bracket shows the percentage to total for each

Source: Primary data

Conclusion

Animal husbandry has a specific role in human civilization and livestock is an integral component of India's agricultural and rural economy. The livestock sector has been growing faster than crop sector in recent years. Animal husbandry is the main occupation of the rural people and a large number of farmers depend on it for their livelihood in supplying milk, meat, egg, wool and hides. It is the management and care of farm animals by humans for profit, in which genetic qualities and behavior, considered to be advantageous. After agriculture it is the most important source of livelihoods for rural households. It provides meaningful employment and supplements income from agriculture. Moreover, the importance of natural manure as a by-product of animal husbandry to maintain soil vitality is being realized across the world. Also, livestock is a useful asset for the rural household in times of financial distress, drought and crops failures. Therefore, efforts should be made to make animal husbandry a more rewarding source of livelihoods for the rural households.

References

- Anjani Kumar (2013). Structural Transformation in Dairy Sector of India, *Agricultural Economics Research Review*, 26 (2): 209-220.
- Avinash Kishore (2016). Patterns and Drivers of Dairy Development in India, *Agricultural Research Review*, 29 (1): 1-4.
- Bardhan, D. (2015). Delivery of Animal Health Care Services in Uttar Pradesh, *Agricultural Economics Research Review*, 28 (8): 127-136.
- Brajesh Jha (2004). Implications of Trade Liberalisations for the Livestock Sector, *Indian Journal of Agricultural Economics*, 59 (3): 35-42.
- Chauhan, A.K., Satya Pal Sarma, Ram Singh (2004). *Agriculture Marketing*, 68 (3): 80-88.
- Dikshit, A.K., Birthal, P.S. (2013). Positive Environmental Externalities of Livestock in Mixed Farming Systems of India, *Agricultural Research Review*, 26 (2): 21-30.
- Dinesh Kumar, M., Singh, O.P. (2017), Economics of Dairy Farming in India, *Economics and Political Weekly*, 41: 77-79.
- Harmeet Singh (2017). Spatial Planning for Dairy Development in Kashmir Valley, *Journal of Rural Development*, 26 (1): 65-98.
- Jain, Murali Lal Sharma, Dwaipayan Bardhan (2004). Technical Efficiency in Milk Production in Underdeveloped Production Environment of India, *Agricultural Research Review*, 2: 44-65.
- Jaya Jumrani, Birthal, P.S. (2015). Livestock, Women and Child Nutrition in Rural India, *Agricultural Economics Research Review*, 28 (2): 223-246.
- Karunakaran, N. (2017). Livestock-population for the Sustainable Development of Kerala, *PEARL Multidisciplinary Journal*, 3 (2): 163-171.
- Marcella Guarino (2019). Environmental Impact of Livestock Farming and Precision Livestock Farming as a Mitigation Strategy, *Science of the Total Environment*, 24: 2751-2760.
- Prajapati, P.M. (2016). Constraints Faced by the Dairy Farm Women in Animal Husbandry Practices and Solutions to Overcome Those Constraints, *Gujarat Agricultural Universities Research Journal*, 4 (1): 32-36.
- Prem Chand, Smita Sixohi (2015). Sectoral Priorities for Sustainable Livestock Development in Rajasthan, *Agricultural Economic Research Review*, 28 (2): 81-92.
- Ranjith Kumar, E.G. (2015), Dairying as a Sustainable Occupation, *Southern Economist*, 54: 17-23.
- Sarbjeet Singh (2007). Distribution Pattern of Land and Livestock among Different Socio-economic Groups in the Rural Areas of Himachal Pradesh, *Journal of Rural Development*, 27 (2): 273-291.