
A Study on the Plight of the Students in the Time of Covid-19 Pandemic

Thilakraj C*, Srimani, Prathibha K

Department of Social Work, Centre of PG Studies and Research

St Philomena College, Puttur

Email: *thilakrajc@gmail.com

Abstract: *Education is considered as one of the basic essentials of every individual. Student life is one the important stages where each individual gains the knowledge and mould himself to what he expects to be. The wave of the corona has showed no mercy even in the education sector, it adversely affected the students and their academics. The Investigators had the keen interest to know the current situations and challenges of the students and the expectations of the students that they hold in the present situation towards the education.*

Objectives of the study is to understand the present situation of the students, the problems faced by the students, to know whether students expect any alternative education methods and to know the alternative methods adopted to improve their education level in the current situation.

The research design used is descriptive in nature. The results show that 66.1% of the students believe that their education has been affected severely due to the pandemic and 51.65% of students think the quality of education they should receive is not being received, also 46.9% students believe that they have lost their concentration level towards their studies.

The overall result of the survey states that the students are facing a critical situation and the students, while dealing with current scenario, also undergoing depression. They have to be provided with proper guidance and training to deal with the current scenario and improve the quality of education.

Key Words: *Education, Covid-19, Pandemic, Students, Online Classes.*

Introduction

Education is a tool which provides people with knowledge, skills, techniques, information which enables them to know their rights and duties towards their family and the society as well (IchinoA, Winter-Ebmer R, 2004). It expands the vision and the outlet to see the world. It gives the knowledge of the

world around us; it develops in us the prospective of looking at the life. It is the most important element of evaluation of any nation.

Education is an important aspect that plays a huge role in the modern industrial world. People need good education to survive in this competitive world. Modern society is based on the people who have high living standards and knowledge which helps them to implement a better solution to the problem. Education helps the people to achieve their dreams by providing the knowledge which creates the path of achievement. But from past two years people are facing various kinds of the problems due to the Covid-19 pandemic. The lockdown was imposed, and everything was just literally shut down.

Each and every sector has faced a huge blow for the pandemic which just made them upside down (BiroliP, et al., 2020). Education sector is not just separate from other sectors. Due to Covid-19 schools and colleges were shut down for long period of time and the online classes were introduced as an alternative pattern of education which also has shown many drawbacks in it, the students were not able to attend the classes properly and the education of the students got interrupted. The students faced with the problems to adopt to the new methods of education such as online classes.

The pandemic made the students sit at home. This brought a huge change in the life style of the students and their daily routine. The student's daily time table was changed, and slowly the behaviour of the students started to change with the changing situations. The students were confused towards their education, and they were lacking motivation, and as the education system was totally upside down the students were facing a huge difficulty regarding their classes (Fuchs-Schundeln N, 2020).

Most of the students lost the touch towards their studies. The minds of the students diverted towards matters alien to academics. They lost the grip of education. The students were lacking concentration. Even though the online classes were introduced and implemented, it did not succeed to help the students to get back to the track, as the education lost its originality. The students lost the charm and the confidence. The online classes had lots of drawbacks such as network problems, lack of handling knowledge, no proper interaction, no reading environment, difficulty to communicate were some of the problems faced by the students.

Some of the students discontinued their education and started working for their livelihood because of the impediments imposed by the pandemic. Thus, the pandemic, covid-19 disturbed the education system and students. The students who were attending the online classes were lacking the study materials and faced the problems in understanding of the subjects. The students who were active in various fields in the schools and colleges also faced the problems as their opportunities of growth, with regard to talent had just stopped. The students who were waiting to finish the college studies and to begin their career got into difficulties.

There is an environment of fear, anxiety and inferiority complex with regard to get a job after education and the career of the students has become a puzzle. This inferiority complex and confusion led the students in to depression and various addictions.

The study has been conducted to explore the condition of the students during the pandemic and help them to overcome the problems they are facing and make them to adjust to the new system of education and to the present environment.

According to M. Kaffenberger (2021), the worldwide school closure in early 2020 led to losses in learning that may not be easily able to cover up even if the schools quickly resume to its prior performance level. Those losses will have lasting impact both on the affected students and on each nation.

Methodology

Objectives of the study are to understand the present situations of the students, the problems faced by the students, to know whether students expect any alternative education methods and to know the alternative methods adopted to improve their education level in the current situation.

The research design used is descriptive in nature. The aim of the study is to know the present condition of the students during the time of pandemic. The scope of the Research includes the students aged 18-24, who are studying at the college level. 70 samples were collected from various colleges of Dakshina Kannada district. The simple random method is adopted to collect the data by using questionnaire method. The Google form had been used to send the questionnaire and collect the required data for the survey.

Major Findings

Age of the Respondents

The respondents are between 18-25 years of age, who are studying in college, out of which 49.2% of respondents belong to 18-21 years of age, 40% belongs to 21-23 age group and 10.8% of students belong to 23-25 years of age.

Gender of the Respondents

Out of 70 respondents 66.7% are female and 33.3% of the respondents are male.

Education of the Students

Among 70 respondents 20 respondents are pursuing their post-graduation and remaining 50 respondents are pursuing their graduation.

Address of the Respondents

The most of the respondents belongs to either urban area or rural area.

Students Attending the Online Classes

The survey report states that out of 70 respondents 75.8% respondents are attending the online classes and the remaining 24.2% respondents are unable to attend the online classes.

The Methods Adopted by the Respondents to Engage themselves during the Pandemic

The survey states that among the 70 respondents 53% of respondents use mobile and 9.1% of the respondents use television, 7.6% of respondents watch series and 21.2% of respondents engage their day referring books and attending webinars.

Attending Online Courses rather than Academics

Out of the 70% of respondents 23.1% of respondents attend the various other courses through online and 76.9% do not attend.

Effects of Pandemic on Education

65.1% of respondents, out of 70 respondents believe that pandemic has a severe effect on the on the education and 17.5% of respondents believe that the effect is moderate, and 12.7% believe that education is not at all affected.

Quality of Education during the Covid-19 Pandemic

Out of the 70 respondents 51.6% of the respondents believe that there is a severe drop in the quality of the education and 35.9% of the respondents believe in the partial dropping in the quality of the education and 12.5% of the Respondents believe inno quality drop in the education.

Concentration Level of the Respondents towards Education

17.2% of the respondents believe in the severe lack of concentration towards the education, 46.9% of the respondents lack their concentration moderately and 26.6% believe in the partial lack of concentration.

Problems Faced by the Respondents during the Time of Covid-19 Pandemic towards Education

The respondents feel that lack of concentration, difficulty to understand, lack of study materials, insecurity of the future, loss of interest, difficult to cover up and adjust to the latest system of education, internet problems, lack of guidance, depression.

Activities Involved in Improving the Quality of Education

90.6% of the respondents believe that they are in need of additional activities that would help in improving the quality of education and 9.4% respondents believe that there is no need of additional activities to improve the quality of education.

Requirement of Training to Improve the Skills and Knowledge Required to Understand and Gain Concentration Towards Academics

78.5% respondents are in requirement of training and 21.5% of respondents do not require training to improve the skills and knowledge to understand and gain concentration towards academics.

Implications for the Social Work Practitioners

1. Organizing training programs for the students to cope with the new education system.
2. Providing guidance to the students to rebuild concentration level.
3. Providing counselling facility to the depressed students, who are feeling insecure towards their future.
4. Providing information of various opportunities that would help the students to improve and gain confidence towards education and life.

Conclusion

The study shows that the students are facing severe problems towards their education and daily routine; decrease in their concentration level, face depression and has no sufficient confidence. They believe that the quality of education has been dropped and are also confused with their future. They are in need of proper guidance and training regarding newly implemented education system. Various activities need to be conducted to help the students to engage themselves in their free time so as to improve the overall growth and the confidence level. Proper counselling and communication with the students who are in depression will help them to come out from the grieved situation.

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Online Shopping during COVID-19 Pandemic

Karunakaran N

Department of Economics, People Institute of Management Studies (PIMS), Munnad Post, Chengala (Via), Kasaragod, 671541, Kerala, India.
Email: narankarun@gmail.com

Abstract: *Online shopping is growing all over India and youth contributes a considerable proportion in the global internet users. The increase of online shopping has become a trend for consumers and recently there has been a massive change in the way of customer shopping. Pattern and preference towards online is mainly due to reasons like cash on delivery, discounts and different type of quality products offered. Increasing use of internet, satisfactory results in online shopping, rise in standard of living, influence of friendship and attractive offers had prompted people to prefer online shopping. Due to coronavirus (COVID-19) pandemic, there is a dramatic shift from in-person to online shopping. Consumers are relying on the digital world more than ever and businesses are forced to adapt their strategies and shift towards digital transformation with much more urgency than before.*

Key Words: *Covid-19, Online Shopping, Pandemic.*

1. Introduction

In India due to variety of reasons, online shopping has been growing drastically. Developed internet penetration, increasing adoption of devices like smart phone, laptops and tablets and shift in buying behaviour has contributed towards preference for shopping online in the country. Online shopping has been predominant during the COVID-19 pandemic. Retailers put much effort in building, improving, and promoting their online stores. Some small retailers that did not manage online stores before shutdown developed temporary solutions to sell their products online. Others have offered discounts for their online channels and started promotion campaigns on social media. Different forms of economic uncertainty during the COVID-19 period provide a unique opportunity to investigate how the online social networks influence consumers' purchase behaviour. In this context, this paper investigates shopping motivations that drive online purchase behaviour during the COVID-19 pandemic.

1.1. Objectives: COVID-19 has underlined the value of digital sales and customer relationships. The study therefore investigated the keep up position during the changing consumer behaviour, anticipate their requirements and study the stay ahead of competitors in the new digital landscapeto examine these aspects of online shopping in the COVID-19 pandemic.

1.2. Review of Literature: Blasio, G. D. (2008), Srivastava, S and Barmola, Kailash. (2010) and Awais Muhammad and Samin Tanzila (2012) analysed the advanced aspects of e commerce. Karunakaran N and Linda Jacob (2020) and Karunakaran N (2020), examined the online shopping in India. Petra Jilkova1 and Petra Kralova1 (2021), Julia Koch, Britta Frommeyer and Gerhard Schewe (2020), and Susan Meyer (2020) in their paper demonstrated the digital consumer behaviour and e commerce trends during the COVID-19 crisis.

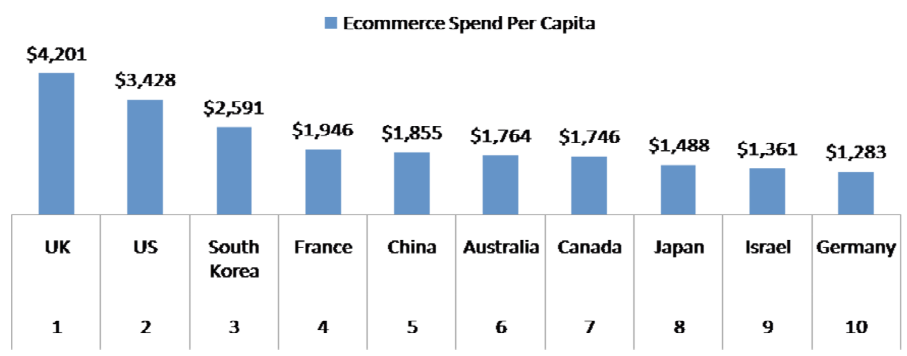
2. Materials and Methods

To realize the objectives specified, survey was conducted to examine the different aspects during COVID-19 from hundred adults aged 18 and older consumers of Kasaragod in Kerala.

3. Results, Analysis and Discussion

Increasing expansion in e commerce, created different purchase and selling pattern and preferences have emerged. Government had introduced various initiatives and the achievement in this regard was evaluated.

Figure1: Purchase Online by Top Ten Countries in the World



Source: Website Builder Expert.com

3.1. Online Shopping in India: Global internet shopping scenario is presented in figure 1. India's system of online shopping has a history and is popular since 1990 (table 1).

Table 1: Online Shopping in India

Year	Description
1969	CompuServe, the first major American e-commerce company, is founded.
1979	Electronic shopping is invented by Michael Aldrich.
1982	The Boston Computer Exchange, a prominent bulletin board system-based (BBS) marketplace for selling used computers, launches. This is one of the first, if not the first, ever platforms for e-commerce.
1982	Minitel, a pre-Internet Video tex online service, launches. This service could only be used in France.
1984	Electronic Mall by CompuServe, a popular online marketplace, launches. It offered pictures of products in full color.
1986	The United States (US) National Science Foundation (NSF) limits use of the National Science Foundation Network (NSFNET) for academic purposes only.
1990	The first ever web browser called World Wide Web is released by Tim Berners-Lee. Millions who have access to the internet can now browse e-commerce platforms with greater ease.
1992	Book Stacks Unlimited, an online marketplace for selling books, launches. Initially, it launched on BBS, then moved to the internet in 1994, in the form of <i>www.books.com</i> .
1994	Netscape launches Netscape Navigator, a very prominent web browser.
1994	IpswitchIMail Server became the first software to be sold online and then be available for immediate download.
1995	The NSF lifts its ban of internet commerce on NSFNET.

- 1995 eBay.com, also an extremely prominent online marketplace, launches. Initially, eBay.com was called AuctionWeb.
- 1995 Double Click, a prominent and influential advertising launches. This one of the first services to serve ads on the internet.
- 1995 Amazon.com, an extremely prominent online marketplace, is launched by Jeff Bezos.
- 1996 India MART, a prominent Indian online marketplace, launches.
- 1996 ECPlaza, a prominent Korean online marketplace, launches.
- 1997 Netflix, an extremely popular subscription video on demand service, launches. Netflix also offers a DVD delivery service. Netflix only began offering online video streaming in 2007.
- 1998 PayPal, a very prominent online payment system, launches.
- 1998 CompuServe is acquired by AOL.
- 1999 Zappos, a popular online marketplace for shoes and other apparel, launches.
- 1999 Tradera, an online marketplace similar to eBay.com in function, launches.
- 1999 Amazon patents its 1-Click service, which allows users to make faster purchases.
- 1999 Alibaba.com, a very prominent Chinese online marketplace, launches.
- 2000 Walmart launches its website, allowing customers to shop online.
- 2000 StubHub, a very popular online marketplace for event tickets, launches.
- 2000 Google launches Ad Words, an advertising service that allows users to show an advertisement in Google search results that is related to the viewer's search.
- 2001 Skrill (formerly known as Moneybookers.com), a prominent online payment platform, launches.

- 2001 Newegg, a very prominent online marketplace for technology, launches.
- 2001 Costco launches its own business-to-business online shopping system.
- 2002 Safeway Inc. launches an online delivery service, allowing customers to shop online.
- 2002 eBay.com acquires PayPal for \$1.5 billion in stocks.
- 2002 Bossgoo, a prominent business-to-business online marketplace, launches.
- 2003 Valve launches Steam, the most popular Digital rights management and gaming platform in the world.
- 2003 Google launches Ad Sense, allowing users to promote their goods on the web based on the product's relevance to the viewer of the advertisement.
- 2005 Amazon launches its Amazon Prime service, which allows users to expedite shipping on any purchases for a flat annual fee.
- 2006 Tradera is acquired by eBay.com for approximately \$50 million.
- 2006 Shopify, a prominent storefront service, launches.
- 2007 StubHub is acquired by eBay.com.
- 2007 Hulu, a popular subscription video on demand service, launches. Hulu is composed of various media organizations.
- 2007 Flipkart, a popular Indian online marketplace, launches.
- 2007 Facebook launches its Facebook Beacon service to display more relevant information to users by collecting data on their web browsing outside of Facebook. With this, Facebook can also promote products based on whatever is relevant.
- 2007 Amazon Fresh, a very prominent online food ordering service, launches in Seattle. It has since spread to dozens of cities across the US.
- 2008 PayPal Credit (formerly known as Bill Me Later), is acquired by eBay.com.

- 2008 Magento. a popular online storefront service, launches.
- 2008 Google acquires Double Click for \$3.1 billion in cash.
- 2008 GOG.com, a prominent online gaming marketplace that offers DRM-free games, launches.
- 2009 BitCoin, a very prominent crypto currency launches, and changes how consumers can pay for online purchases or even in restaurants.
- 2009 Big Commerce, another popular online storefront service, launches.
- 2009 Amazon acquires Zappos.com for \$1.2 billion.
- 2010 HBO Go, a popular subscription video on demand service that offers streaming of exclusively HBO content, launches.
- 2010 Groupon, a prominent online marketplace, launches.
- 2011 Magento is acquired by eBay.com.
- 2011 Google Wallet, a prominent online payment system similar to PayPal, launches.
- 2011 Facebook Beacon is shut down due to privacy concerns.
- 2012 Instacart a popular and growing online food ordering and delivery, launches.
- 2013 Google Express (formerly known as Google Shopping Express), a service similar to Amazon Fresh and Instacart launches in several cities across the US, starting with San Francisco.
- 2013 Facebook begins letting users sponsor posts, which helps give their posts or products more publicity among their friends, followers, and those to whom the post is relevant.
- 2013 China becomes the largest e-commerce market in the world.
- 2014 Singles' Day sales on Alibaba sites reach US\$9.3 billion.
- 2014 Jet.com, an online marketplace, launches.
- 2014 Apple Pay, a prominent payment system in the form of a mobile app that mimics a credit or debit card, launches.

2015	Singles' Day sales on Alibaba sites reach US\$14.3 billion.
2015	Pinterest enters the e-commerce scene by adding Buyable Pins, a feature that allows users to sell their pins to other users.
2015	Google launches Android Pay, a prominent payment system similar to Apple Pay.
2015	Cyber Monday sales set a new record of \$3 billion.
2016	Walmart announces it will be acquiring Jet.com for \$3 billion.
2016	Singles' Day sales on Alibaba sites reach US\$17.7 billion.
2016	Alibaba announces it will be acquiring a controlling stake in Lazada Group for around US\$1 billion.
2018	Flipkart is acquired by Walmart.

Source: Karunakaran N and Linda Jacob (2020), "Online shopping among college students in Kasaragod: pattern and preference", *Journal of Management Research and Analysis*, 7 (2): 70.

3.2. Pandemic's Impact on Online Shopping: Before 2019, majority of retailers ended with a greater number of bricks and mortar stores. In the wake of coronavirus, bricks and mortar retail has slowed to a standstill. As a consequence, many Omni channel retail organizations around the world have been scrambling to improve their customers flock online [10]. Corona virus (COVID-19) pandemic saw a dramatic shift from in-person to online shopping. Consumers are relying on the digital world more than ever and businesses are forced to adapt their strategies and shift toward digital transformation with much more urgency than before [12].

3.2.1. Shopping Behaviour during COVID-19 Times: 45 percent of respondents indicated to do more online shopping, followed by 25 percent as less. 40 percent indicated that they will do more online shopping than they are doing at present during COVID-19. For online shoppers, the most important factors that influence their loyalty to a given brand are previous positive experience (34 percent) and user-friendliness (23 percent). When asking the respondents about their likeliness to fill out feedback surveys about their shopping experience, 82 percent is either very likely or somewhat likely to complete one of those surveys. When asking the respondents how

important it would be that the company informs them on how they resolved the problem after reporting a negative online experience and deciding to buy from them in the future, the vast majority indicated this to be either extremely important or very important (69 percent) (table 2).

Table 2: Online Shopping Behaviour during COVID-19 Times

Question 1: Compared to the amount of online shopping you did prior to the Corona virus (COVID-19) pandemic, would you say you have been doing more, less or about the same amount of shopping online?

Number of respondents	Shopping online (more) in %	Shopping online (less) in %	Shopping online (about the same) in %	No answer in %
100	45	25	30	0

Question 2: Thinking ahead to the future, do you plan to do more shopping online than you are doing today?

Number of respondents	Shopping online (more) in %	Shopping online (less) in %	Shopping online (about the same) in %	No answer in %
100	40	22	38	0

Question 3: If you reported a negative online experience to a company how important would it be that the company tell you how they resolved the problem when it comes to deciding if you will make purchase from them in the future?

Number of respondents	Extremely important in %	Very important in %	Somewhat important in %	Not too important in %	Not at all important in %	No answer in %
100	30	39	22	4	3	2

Question 4: Which of these matters most in your decision?

Number of respondents	Previous positive experience in %	User friendless of websites in %	Ease of checkout or payment experience	Customer service and support in %	Ability to provide feedback in real time in %	No answer in %
100	34	23	16	12	12	3

Question 5: Sometimes companies will send surveys after you purchase a product to gather feedback about your experience how likely you complete response of such surveys?

Number of respondents	Very likely in %	Somewhat likely in %	Somewhat unlikely in %	Very unlikely in %	No answer in %
100	38	44	14	3	1

Question 6: Are you more likely to take this survey when you have a positive or negative experience ?

Number of respondents	Positive experience in %	Negative experience in %	Makeno difference/ equally likely in %	No answer in %
100	42	14	43	1

Question 7: If you reported a negative online experience to a company how important would it be that the company tell you how they resolved the problem when it comes to deciding if you will make a purchase from them in future?

Number of respondents	Extremely important in %	Very important in %	Somewhat important in %	Not too important in %	Not at all important in %	No answer in %
100	30	39	22	4	3	2

4. Conclusion

Compared to shopping pre-pandemic, online shoppers have all boosted their online buying behaviours since the coronavirus outbreak began. One-third plan to increase their buying behaviour in the future online. While total cost is initially the top factor in deciding whether to buy from one company over another, previous positive experiences is the number one cited factor in deciding to return to make a purchase on a website. It is important to note that the company follow up with the resolution in deciding if they will make a purchase from that company in the future. With the exception of shoppers, majorities are likely to respond to feedback surveys even though there is negative experience.

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Production and Export of Organic Products: Opportunities and Challenges

Babu C¹, Karunakaran N^{2*}

¹ Department of Economics, EKNM Government College, Elerithattu, Nileshwar, 671314, Kerala, India.

² Department of Economics, People Institute of Management Studies (PIMS), Munnad Post, Chengala (Via), Kasaragod, 671541, Kerala, India.
E-mail: *narankarun@gmail.com

Abstract: *Organic farming is one of the most important and celebrated systems of agriculture from the point of view of agricultural sustainability. It combines modern scientific techniques of cultivation with tradition to benefit the environment and ecosystem in general and promote a good quality of life for all in particular. It has a concealed production and trade opportunities for both developing and developed countries. The production and market for organic products have been growing continuously for the past two decades. Organic products are often traded with a price premium in domestic as well as international markets. However, the production and marketing possibilities are underutilized all over the world, especially in developing countries. The organic farming movement in India is showing modest growth both in terms of production and marketing. There exists an unexplored market potential for organic products both domestically and internationally.*

Key Words: *Organic Farming, Export, Opportunities, Challenges.*

1. Introduction

Indian agriculture system essentially flourished on the so-called 'organic farming' since time immemorial. The entire industry of agriculture was practiced using organic techniques where almost all of the inputs were obtained from plant and animal products. However, the ever-increasing population along with several natural calamities led to severe food scarcity in the country, especially after independence. India is compelled to import huge amounts of food grains from the rest of the world especially from the USA to feed the people. To address this critical issue, and to ensure food security, the Government of India introduced the New Agriculture Strategy, later termed as Green Revolution during the 1960s. The new agriculture

strategy was fully based on a high yielding variety of seeds, chemical fertilizers and pesticides and so on; as a result of the adaptation of the new system, productivity increased manifold times. But the negative externality associated with this system of farming like degradation of soil, health and environmental issues necessitated to devise an alternative technique of farming. Organic Farming is suggested as an alternative to conventional farming since its principles and philosophy are entirely different and since it has an edge over conventional farming on various grounds. The very definition of organic farming is therefore nature-centric and human-centric.

1.1. Objectives: "Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on the ecological process, biodiversity and cycles adapted to local conditions rather than the use of inputs with adverse effects. Organic farming combines tradition, innovation and science to benefit the shared environment and promote fair relationship and a good quality of life for all involved" (IFOAM, 2020). Organic Farming is therefore based on some internationally accepted principles: principle of health, principle of ecology, principle of fairness and principles of care (IFOAM). In this context, this paper attempts to examine (i) the present status of organic farming, (ii) its opportunities and prospects in both production and export, and (iii) challenges faced by the stakeholders of organic farming in India.

1.2. Review of Literature: Amit Khurana and Vineet Kumar (2020) analyzed the state of organic and natural farming, its challenges and possibilities. Karunakaran N and Babu. C (2019) examined the organic farming practices in Kerala and its current status and future prospects. Karunakaran N and Sadiq MS (2019) studied the socio-economic aspect of organic farming practices for improving farmer's income in some locations of Kerala. Karunakaran N and Silna Thomas (2017) also studied the marketing of organic commodities. Ummyiah, H. M (2017) and Willer, et. al. (2020) evaluated the export of organic products.

2. Materials and Methods

A systematic search was conducted to understand and analyze the present status of organic farming, its opportunities and prospects in both production and export, and also challenges faced by them in India. Many important reports and articles were used for reference.

Table 1: Organic Agriculture, Key Indicators and Top Countries

Indicator	World	Top Countries
Countries with organic activities	2019:187 Countries	
Organic Agricultural land	2019:72.3 million hectares (1999: 11 million hectares)	Australia (35.7 million hectares) Argentina (3.7 million hectares) Spain (2.4 million hectares)
Organic share of total agricultural land	2019: 1.5 %	Liechtenstein (41.0 %) Austria (26.1 %) Sao Tome and Principe (24.9 %)
Wild collection and further non-agricultural areas	2019: 35.1 million hectares (1999: 4.1 million hectares)	Finland (4.6 million hectares) Zambia (3.2 million hectares) Namibia (2.6 million hectares)
Producers	2019: 3.1 million producers (1999: 200'000 producers)	India (1'366'226) Uganda (210'353) Ethiopia (203'602)
Organic market	2019: 106.4 billion euros (2000: 15.1 billion euros)	US (44.7 billion euros) Germany (12.0 billion euros) France (11.3 billion euros)
Per capita consumption	2019: 14.0 euros	Denmark (344 euros) Switzerland (338 euros) Luxembourg (265 euros)
Number of countries with organic regulations	2019: 108 countries	
Number of affiliates of IFOAM – Organics International	2020: 719 affiliates	Germany: 79 affiliates India: 52 affiliates USA: 48 affiliates Italy: 46 affiliates

Source: Annual Report (IFOAM-2020)

3. Results, Analysis and Discussion

3.1. Global Status of Organic Agriculture: Organic food and farming have continued to grow across the world. Since 1985, the total area of farmland under organic production has been increased steadily over the last three decades (Willer and Lernoud, 2020). In 2019, there was a total of 72.3 million hectares of organically managed land, including in conversion areas, recorded globally. Australia has the largest organic lands with an area of 35.7 million hectares followed by Argentina (3.7 million hectares). The regions with the largest organic agricultural land areas are Oceania (35.9 million hectares, which is half of the world's organic agricultural land) and Europe (16.5 million hectares). Latin America has 8.3 million hectares followed

by Asia (5.9 million hectares); North America (3.6 million hectares) and Africa (2 million hectares) (table 1).

3.2. Global Market for Organic Products: Organic food was first introduced on a large scale in the early 1990s; it took over 18 years for global organic product sales to reach 50 billion US dollars. Ten years later (2018), it crossed the 100 billion US dollar mark. International sales of organic food and drinks reached 112 billion US dollars in 2019, with expansion of 55 percent since 2013. North America and Europe generate most sales (90 percent).

3.3. Present Status of Organic Agriculture in India: In March 2021 total area under Organic Certification Process (registered under National Programme for Organic Production) is 5782276.07 hectare; including 4100980.46 hectare cultivable area and 1681295.61 hectare for wild harvest collection. Among the states, Madhya Pradesh has covered largest area under organic certification followed by Rajasthan, Maharashtra, Chhattisgarh, Uttar Pradesh and Himachal Pradesh. India occupies fifth position with a total organic agriculture area of 2.3 million hectares. In terms of the number of organic producers, the country stands first with a total of 1366226 followed by Uganda (210353), and Ethiopia (203602) (table 2).

Table 2: Organic Farming in India

Total Area covered under organic Farming (2020)	2.3 million hectare
The organic share of total agricultural land	1.3 Percent
Total number of organic Producers (2020)	13,66266
Production of organic certified products (2019-20)	2.75 MT
Export earnings from organic products (2020-21)	7078 Crore
Major export destinations	USA, European Union, Canada, Switzerland, Australia, Japan, Israel, UAE, New Zealand, and Vietnam
Major States under organic farming (Coverage of certified organic land area)	Madhya Pradesh, Rajasthan, Maharashtra, Gujarat, Karnataka, Odisha, Sikkim and Uttar Pradesh.
Major products under organic farming	Oil seeds, sugar cane, cereals and millets, cotton, pulses, aromatic and medicinal plants, tea, coffee, fruits, spices, dry fruits, vegetables, and processed foods.

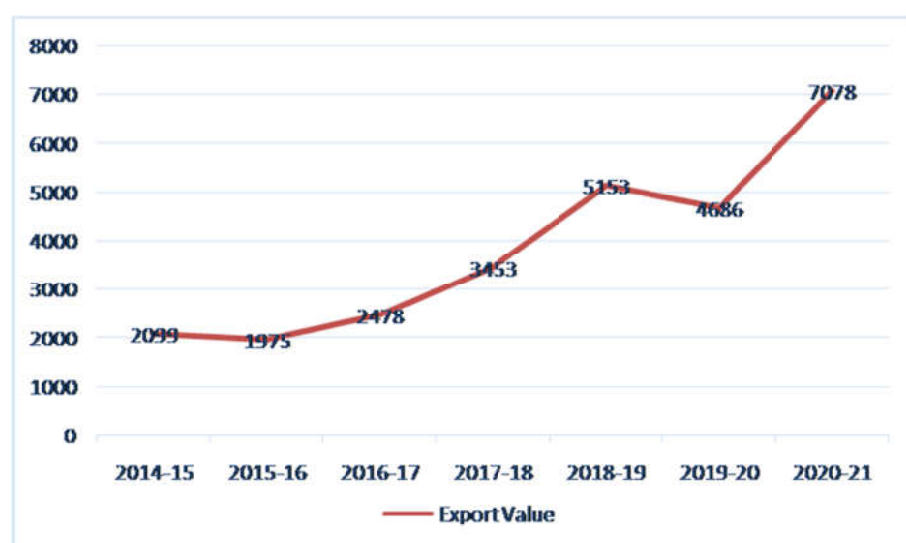
3.4. Domestic Market for Organic Products: In the last few years, contribution to the growth in the Indian organic foods landscape has included various national level schemes to encourage organic farming, initiating new exports from the remote North East region, and improved market linkages of producer clusters with agribusiness, phytochemical, organized retail and e-commerce firms. Table 3 presents the domestic consumption of major two category of organic products in India during the last five years.

Table 3: Organic Products Consumption in India (USD million)

Category	2015	2016	2017	2018	2019	2020*
Health and wellness products	10678	12279	14200	15526	16848	18158
Organic packaged food and beverages	38.6	46.3	54.6	61.6	69.0	77.0

*Estimates for 2020; Source: Global Organic Trade

Figure 1: Export of Organic Agricultural Products in the Last Seven Years



Source: *APEDA*

3.5. Trend, Composition and Direction of Organic Products Export:

Export of organic products is continuously increasing both in terms of quantity and value. During the year 2014-15, India could export 285663 MT organic products worth of Rs 2099 crores. The country's exports of organic food products rose by 51 percent year-on-year in 2020-21 (figure 1). The total volume of export during 2020-21 was 888179.68 MT. The organic food export realization was around Rs 7078.49 crores. During the last seven years, the export earnings has increased more than 3 times (table 4).

Table 4: Export Data of Organic Agricultural Products (2014-15 to 2020-21)

Year	Quantity of Export (MT)	Export Value In crores	Export Value in Million USD
2014-15	285663	2099	327
2015-16	263687	1975	298
2016-17	309767	2478	370
2017-18	458339	3453	515
2018-19	614087	5153	757
2019-20	638,998	4686	989
2020-21	888,179	7078	1040

Source: APEDA

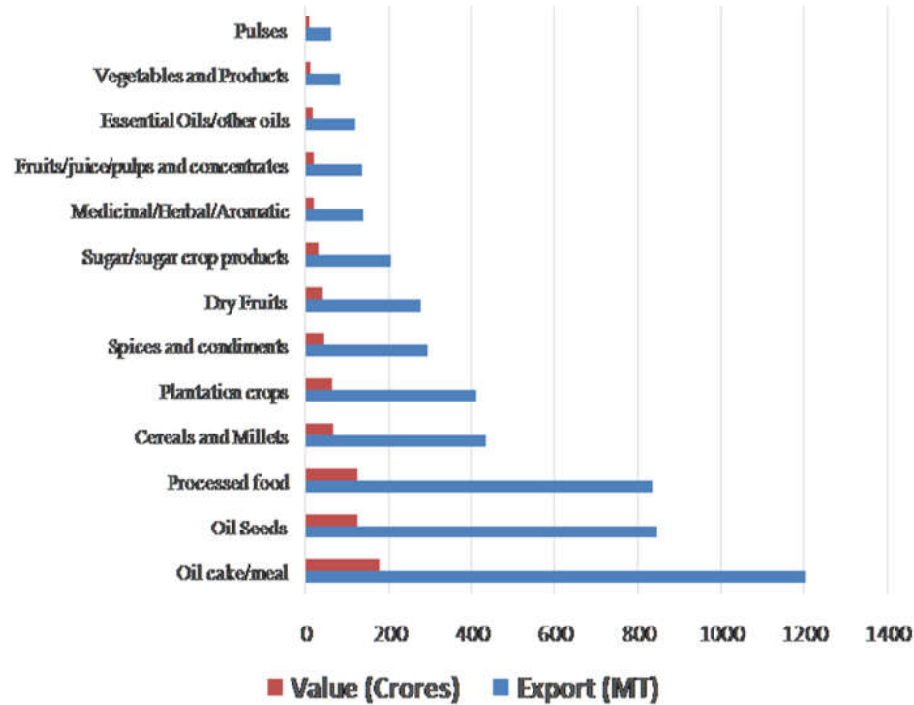
During 2018-19, India exported producing 614087 MT of certified organic products which include oilcake/meal, oilseeds, processed food, cereals and millets, sugar cane, pulses, fruits, spices, vegetables, dry fruits, tea, and coffee. Moreover, India produced organic cotton fiber (figure 2). In terms of export value realization Processed Foods including soya meal (39 percent) lead among the products followed by Oilseeds (16 percent), Cereals and millets (8 percent), Plantation crop products such as Tea and Coffee (8 percent), Spices and condiments (5.6 percent), Medicinal plants (5 percent), Dry fruits (3 percent), and Sugar (3 percent) (table 5).

Table 5: Category Wise Export of Organic Products in 2018-19

Sl. No	Category	Item/Commodity (MT)	Qty Exported (MT)	Value of exports INR crores	Percent in Quantity Terms
1	Oil cake/meal	273786	1203	177	23
2	Oil Seeds	170745	845	124	16
3	Processed food	2430	835	123	16
4	Cereals and Millets	67847	432	64	8
5	Plantation crops	8969	409	60	8
6	Spices and condiments	6784	294	43	6
7	Dry Fruits	3805	275	40	5
8	Sugar/sugar crop products	41126	203	30	4
9	Medicinal/Herbal/Aromatic	2759	138	20	3
10	Fruits/juice/pulps and concentrates	12196	133	20	3
11	Essential Oils/other oils	5619	116	17	3
12	Vegetables and Products	2251	82	12	2
13	Pulses	5158	59	9	2
14	Flowers	551	37	5	1
15	Fodder crops	1570	9	1	0
16	Tuber crops	205	4	1	0
17	Seeds	24	2	0	0
18	Ornamental Plants/products	7	1	0	0
19	Others	8255	76	11	1
Total		614087	5153	757	100

Source: APEDA

Figure 2: Commodity Wise Export Major Organic Products 2018-19



Source: APEDA

India's organic products have been exported to 58 countries including USA, European Union, Canada, Switzerland, Korea Republic, Israel, Vietnam, and Australia. USA, EU and Canada are the most important destination of organic products export. Country wise export of organic products (top 15 countries) during 2018-19 is presented in table 6.

Table 6: Country Wise Export of Organic Products (Top 15 Countries) during 2018-19

Sl. No	Country Name	Exported Qty(MT)	Total Value in INR (In Crores)	Total Value (USD)	Total Value (Million USD)
1	USA	334113	2922	429705431	430
2	European Union	155255	1517	223117746	223
3	Canada	101934	467	68602269	69
4	Switzerland	6199	67	9888236	10
5	Australia	2131	51	7468131	7
6	Japan	751	16	2397739	2
7	New Zealand	1978	14	2125926	2
8	Israel	3070	13	1865451	2
9	Vietnam	3186	11	1679401	2
10	Lebanon	681	11	1633756	2
11	UAE	492	11	1551083	2
12	Korean Republic	1110	11	1546113	2
13	China	685	7	997397	1
14	Sri Lanka	225	5	731531	1
15	Turkey	355	4	625094	1

Source: The Agricultural and Processed Food Products Export Development Authority (*APEDA*)

3.6. Opportunities and Challenges: India has one of the highest arable land areas in the world. The net sown area is 140.1 million hectares. Agriculture, along with its allied sectors such as livestock, forestry and fisheries, is still the largest source of livelihood. Food security depends upon personal relationships of integrity and trust among farmers, farm workers, suppliers, consumers and others up and down the agricultural supply chain and integrity and trust have been fundamental to organic agriculture's success (Ummiyah, H. M., 2017). The important opportunities of organic agriculture include:

- | Bestowed with a growing middle class with higher disposable incomes, rapid urbanization, elevated concerns for the safety and quality of food, preference for embracing wholesome or naturalistic lifestyles are all factors leading to the ever-increasing domestic demand for organic products especially the food consumption.
- | India's organic food sector is expected to grow at a compound annual growth rate (CAGR) of 10 percent in the MY 2016-2021 period from US \$386.32 million in 2015 and reach US \$10.75 billion mark by 2025 (USDA, 2020).
- | The area under rainfed agriculture is accountable for almost 40 percent of the food production in India. The rainfed area is using comparatively fewer chemical fertilizers and pesticides and can be easily converted to the system of organic farming. Moreover, the tribal, Northeast and hilly regions of India where traditional farming on eco-friendly lines is more or less practiced could also be considered for organic farming system.
- | Total Area covered under organic Farming (2020) is 2.3 million hectares which accounts only 1.3 percent of total agricultural land. Production of organic certified products (2019-20) is 2.75 MT and the export earnings from organic products (2020-21) is 7078 crores. Even though the share of organic farming in terms of arable land, number of farmers, and the export contribution is relatively less, a significant increasing trend in all these vital variables is visible during the last 2 decades.
- | Due to the presence of various agro-climatic conditions along with rich and varied inherited tradition of organic/natural farming, India has lot of potential to produce all varieties of organic products at lower costs. The organic farmers of India can there by successfully tap the ever increasing domestic as well as international market for their products.

The important challenges faced by organic agriculture include:

- | Poor infrastructural facilities and lack of proper supply chains networks.
- | Lack of awareness among farmers about (i) the process of organic farming certification, (ii) the existing opportunities both in domestic and international markets, and (iii) the government initiatives and financial assistance with respect to the production and export of organic products.

- | Consistent maintenance of quality and professionalism is inevitable for the success of organic farming which is also a big obstacle in front of Indian farmers.
- | Lack of awareness along with non-availability of quality inputs are another challenge for those who are willing to adapt organic farming system.

4. Suggestions

- | Necessary steps may be taken for increasing awareness among exporters about the financial assistance being provided by APEEDA for creating capital assets and other necessary infrastructure.
- | To meet and explore the increased export demand especially for processed food
- | In order to increase export competitiveness of organic products, special incentives to the organic exporters may be provided and the existing Merchandise Exports from India Scheme (MEIS) may be modified accordingly.
- | The number of certification agencies in India is too inadequate compared with the volume of production and export of organic products. To be a successful player in the global market and ensure international standard and quality, number of certification bodies should be increased.
- | Around 85 percent of Indian farmers are holding a farm area of less than 2 hectares. They find difficulty in accessing available marketing channels. To address this issue organic cluster farming system should be encouraged.
- | The present-day third-party certification process is highly complex and expensive in nature. The entire process of certification should be simplified and the expenses related with it should be reasonable.
- | Since organic farming practices are demanding specific skills and expertise, proper capacity building and training programmes should be implemented.
- | Necessary infrastructural facilities should be created especially with respect to the storage and export of products

5. Conclusion

Agriculture and allied sectors provide employment to 54.6 percent of the total workforce in India. About 70 percent of rural households still depend primarily on agriculture for their livelihood. In this context, any positive change in the agriculture sector will certainly improve the livelihood of masses of families. Organic farming provides enough opportunities for the farmers in this respect. With proper coordination, planning and implementation of the programmes and projects both at the central and state level, aimed at the promotion of organic farming and by providing farm-level support, the production and marketing of organic products can be increased. This will ensure higher income and more prosperous living for the farmers on the one hand and sustainability of the agriculture system to a larger extent.

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Role and Experiences of Asha's in Containing Super-Spread: A Study of Poonthura Village During Covid-19

Dency Mary Reji^{1*}, Jesintha Joseph¹, Francina P X²,
Angelo P Mathew³

¹ Loyola College of Social Sciences, Thiruvananthapuram.

² Department of Social Work, Loyola College of Social Sciences,
Thiruvananthapuram.

³ Department of Personnel Management, Loyola College of Social Sciences,
Thiruvananthapuram

E-mail: *dencyreji24@gmail.com

Abstract: *During the COVID-19 pandemic, active frontline workers' contribution and efforts amidst high risk helped Kerala, the state detected first covid-19 patient in India, take adequate measures and gain acclaim as a model against the pandemic all over the world (Andrews, 2020). The duties of the health workers multiplied in the regions of high-test positivity rate as well as population density. ASHA workers, has come to the rescue of state government to carry out community level activities such as tracking positive cases, identifying symptomatic cases, monitoring people with travel history and a host of pandemic management protocol based standard operating procedures to be administered. Poonthura in Thiruvananthapuram district is one of the tightly-clustered localities home to low-income families. Located in the coastal region of Kerala's capital city witnessed a 'super-spread' of 200 cases in the month of July 2020 due to the reported resilience in complying with social distancing norms. This paper explores the major activities done by the ASHA workers during the pandemic, the challenges faced and the coping strategies against the covid-19 crisis. The cases were identified based on findings of the pilot study conducted in different coastal villages of Thiruvananthapuram district. It was found that community engagement through field work; telephone calls to the affected; house visits and prompt reporting to the authorities were the crucial duties performed by ASHA workers. Amidst several physical, psychosocial and social challenges, with the help of the authority, they could handle the situation in a proper manner. Such preventive and action-based strategies are encapsulated in the current research.*

Key Words: *COVID-19, ASHA Workers, Experience, Challenges, Coping Strategies.*

1. Introduction

A transformative change in India's health system came with the introduction of Accredited Social Health Activists (ASHA) in 2005 under the National Rural Health Mission (NRHM). ASHA workers are women aged 25-45 years, selected from among the residents of a village, who act as the first point of contact between the community and the health system. They receive training and are responsible for referral and escort services for reproductive and child health, promoting universal immunization, nutrition and health education of the communities, and mobilizing communities for health planning, among other roles. The Economic Survey of India 2020-22 recognizes the contributions of ASHA workers as they play a key role in the country's response for prevention and management of the COVID-19. During the pandemic, in addition to performing tasks related to COVID-19, they also continued to support community members for accessing essential health services such as anti-natal care, immunization, safe delivery and treatment adherence for chronic illnesses. (Johns Hopkins School of Public Health, 2021)

The COVID-19 pandemic disrupted health services throughout the world. With its early and stringent lockdown, India was no exception. Reproductive, maternal, neonatal, child and adolescent health (RMNCHA) services were among that were affected by the lockdown and subsequent restrictions on access and delivery of healthcare services. During this time, India's almost million-strong force of ASHA workers kept the health system running even as other modes of health services became physically and financially inaccessible. ASHA workers not only performed their usual mandate but also undertook additional responsibilities including surveillance, contact tracing, awareness generation, and referrals for COVID-19 diagnostics and treatment. However, at the same time, we also saw large scale protests by the ASHA workers, demanding access to adequate personal protective equipment (PPE) and protection from resistance, often violent, from communities living under the apprehension of COVID-19. This was compounded by delays in receiving their pay, which was often inadequate and unreliable due to its incentive-based nature. (Johns Hopkins School of Public Health, 2021).

Kerala, a small state in South India, has been celebrated as a development model by scholars across the world for its exemplary achievements in human development and poverty reduction despite relatively low GDP growth. But

as it turned out, this celebration was premature as Kerala soon faced a third wave of covid-19 infections. (Chathukulam, 2021). On July 17, the Kerala government admitted that community transmission of Covid-19 had occurred in the coastal hamlets of Poonthura and Pulluvila in Thiruvananthapuram. It was the first time a state government in India officially admitted that community transmission of Covid-19 has taken place. The total number of covid-19 cases surged from 6166 on July 8, 2020 to 16,995 on July 24, 2020. (Tharamangalam, 2021). The coastal circle of Poonthura comprising three wards has become the biggest Covid cluster in the district with over 70 people testing positive for coronavirus within seven days. ASHA workers faced several challenges during the protest of people at Poonthura during the lockdown. Also many health workers and ASHA workers were tested positive during covid-19 fieldwork. (Kumar, 2020)

2. Review of Literature

2.1 Accredited Social Health Activists

Community health workers (CHWs) are a powerful force for promoting healthy behaviors and extending the reach of health systems around the world (Perry, 2014). Under the National Rural Health Mission (NRHM), the concept of trained female community health activist or Accredited Social Health Activist (ASHA) has been introduced to all villages of the country who acts as an interface between the community and the public health system. They are selected from the village itself (one for 1000 population), preferably in the age group of 25–45 years with minimum formal education of 8 years. ASHAs responsibilities range from health education to detection of diseased cases and referral to higher health facilities (Guha, 2018).

The success of NRHM largely depends on ASHAs' performance as they are considered as the grass root level workers. Hence, for effective service delivery ASHAs need to have a sound awareness and perception about their roles and responsibilities (Guha, 2018). About 69 per cent of the country's population lives in rural areas which comprise almost three-quarters of the population. However, in these areas, utilization of basic health services has remained poor though there has been an increase in the public expenditure on the provision of primary health care. To meet this challenge, a new band of community-based functionaries, named as accredited social health activist (ASHA) was proposed under national rural health mission (NRHM), an ambitious initiative of the central government of India, to fulfill its promise

on inclusive growth. ASHA has the pivotal role to play in the whole design and strategy of this mission. She acts as a link between the community and the rural health system. (Bhanderi, 2018)

2.3 Coronavirus Disease 2019 (COVID-19)

Corona Virus Disease 2019 (COVID-19) is an RNA virus, with a typical crown-like appearance under an electron microscope due to the presence of glycoprotein spikes on its envelope. In November 2019, an outbreak of coronaviruses (CoVs) with severe acute respiratory syndrome (SARS)-CoV started in the Chinese province of Guangdong and again, in September 2012 the Middle East respiratory syndrome (MERS)-Co V appeared. (Gennaro, 2020). Italy was the first Western country to experience the COVID-19 emergency with a spiral of infections and deaths placing the country at the top of the international rankings, overtaking China on 19th March 2020 (Berardi, 2020).

India went under four phases of lockdown extensions and entered its fifth phase on 8 June, where regions deemed safe, called “green zones,” will have more liberty in movements and business operations, whereas danger “red” zones will continue strict travel and trade restrictions. (Siddiqui, 2020).

2.4 Role of ASHA workers during COVID-19 pandemic.

According to a survey conducted among ASHA workers, just 23 per cent workers have received hazmat or bodysuits. ASHAs are working at the grassroots level and meeting several people every day, many of whom could be Covid infected. This puts them at a heightened risk of contracting the disease (Raina, 2020). Kerala was the first state in India to have a Covid-19 positive case. The state had formed a response team even before this occurred and was prepared. This preparedness has helped Kerala in flattening the curve. Even though the number of cases has spiked recently with the influx of expatriates, Kerala has effectively managed to trace, quarantine, test, isolate, and treat as was necessary (Jayakumar, 2020).

An ASHA worker along with a neighbor was put in charge of every home where a person is supposed to be in quarantine. As referred to in the conceptual framework, ASHA workers also make up a part of the community participation. These persons successfully informed the police if anyone defied the quarantine rules. ASHAs and health inspectors carried out household surveys. Additional incentives were provided for the ASHA workers for

their help in Covid-19 management activities (Jayakumar, 2020). ASHAs are involved in conducting house-to-house visits, reporting symptomatic cases, carrying out contact tracing, maintaining documentation, monitoring the situation and creating awareness about COVID-19 in the community Bajpai gives a list of roles of ASHA workers that include - community awareness through inter-personal communication, support ANM/Supervisor in house to house surveillance including (a) Identification of High Risk Group (HRG) and probable cases (b) Ensure uptake of medical services in urban and rural areas and (c) Psychosocial care, stigma and discrimination; Reporting and feedback across different phases of COVID-19 pandemic (no cases, imported/ sporadic cases, clusters and community wide transmission); Personal Safety and Precautions (Bajpai, 2020).

3. Significance of the Study

The researchers earmark to communicate the need to understand the experience of ASHA workers during Covid-19 pandemic in Poonthura village. ASHA workers played a pivotal role in prevention and protection of ordinary people of the village from the widespread. Apart from the work responsibilities, they looked forward to the emotions of each individual of the village. Though they were well appreciated for their efforts as a whole, there were many whose efforts weren't appreciated enough. Each health activist of three wards of Poonthura village had different reasons to record.

Also, Poonthura village holds a population density of 4930 people per km², where the houses are built congested and social distancing and quarantine facilities were not even possible. Besides, the fishing village depends upon their daily wages for the survival, thus people were restless with lockdown initiated by the government. In such a condition, ASHAs faced lot of challenges and problems with their fieldwork. Nevertheless, they managed to solve and cop up with difficult situations with the help of real action at the right time. The findings from a study conducted in a particular area can be different compared to another due to the distinct population, culture and practice. The research communicates the evaluation of the activities by ASHAs, so that they can be referred for future purpose. In addition, it realizes the importance of taking individual decisions rather than a common rule depending upon the characteristics of the community.

4. Statement of The Problem

During the pandemic, ASHAs were one of the crucial intermediaries between people and authority. If the problems and challenges of the group are not addressed, the result of the tasks accomplished may not be reflected properly.

In a country of diversity, each area has unique cultures and customs, where a whole centered study approach may not be possible to collect accurate data. Even though different studies are available about ASHA workers of various regions, the findings are dissimilar to those places with distinct population, culture and practice. Since Poonthura is a coastal village and most of the people depend upon fishing for their survival, government-initiated lockdown affects their life. Also, social distancing in thickly populated surroundings is beyond their imagination. The study addressed how ASHA workers managed a dense population to follow the covid-19 rules and utilized resources for Covid testing and quarantine facilities.

On July 9, Kerala confirmed its first “Covid 19 super spreader” incident in the coastal village of Poonthura and Pulluvila in Thiruvananthapuram, the capital of Kerala. In Poonthura and Pulluvila, people blocked vehicles of police and attacked health workers. The residents in Poonthura and Pulluvila alleged that due to stringent lockdown measures they were not even allowed to venture out of their house to buy essential items from shops nearby. The residents complained that no shops in their vicinity were allowed to open and the men in uniform allegedly went around threatening and using bad words against the fishermen coming out of their homes. In addition to that a team of 25 commandoes were deployed in Poonthura coastal village as the Covid 19 infections continued to surge. Such stringent measure didn’t go down well with the coastal villagers. The presence of commandoes in uniform provoked the resistance among fisher folk (Chathukulam, 2021). During such a difficult condition, Poonthura village was under control within a span of period. This was only possible with the help of the managing authority including ASHA workers. There was no detailed study of ASHAs especially of a coastal village dealing with a pandemic. Addressing several situations can help in future references to forecast adequate services.

5. Methodology

This research is qualitative in nature and follows a descriptive case study design. Data collection was done through in-depth semi structured interviews. A purposive selection of cases was used, where the researchers made a critical study by gathering data from all the ASHA workers of all the three wards of the Poonthura village. Ethical concerns were taken into account and formal consents gathered from the ASHA workers of the village under study. The research aimed to gain an in-depth understanding of the experiences

of ASHA workers during the Covid-19 pandemic in Poonthura village which was a case of super-spread. The specific research questions included the roles of ASHA workers during the time of Covid-19 pandemic in Poonthura village, the physical, psychological and social challenges faced and the coping strategies adopted by them.

6. Case Studies

Case 1

Mrs. X, 48 years old ASHA worker of Poonthura village, belongs to a middle class family and was an active member during the COVID-19 pandemic. Her ward is one of the most affected and their conditions were much worsened during a period of time. X was an ASHA worker in Poonthura for 10 years and she holds a better rapport with the people in the ward. X comes under a BPL family and her job was one of her family's main income. Her husband is a fisherman and she has two children. Due to complete lockdown, her family went financially weak and everyone depended on her source of income. At the same time her family was so tensed about the risk behind her work. X used to be anxious about her family condition during her absence due to continuous fieldwork.

Even during the hurdles, she managed to do regular house visits and follow ups. When there was a massive spread, the things were going out of control for X, where people stepped out due to lack of money in their hand, covid-positive patients' broken rules because of lack of space in the house and awareness was the least. Most of the times, she used to walk kilometers to stick notice at the houses of covid patients and quarantined houses by wearing the personal protective equipment (PPE) kit. Gradually a small part of the society started realizing the hard work of the ASHA workers and started supporting them. But the other part of the society was reluctant to the work of ASHA workers, where they were not even following their instructions.

Case 2

Mrs. Y is a 28 years old married woman, working as an ASHA worker in Poonthura ward, consisting of 1200 houses and 75000 population. She was the youngest ASHA worker among the group and was quite afraid to get engaged in activities due to the risk behind it. She got the job when her mother, who was an ASHA worker, got passed away. She had a one year old baby and her whole family was unwilling to leave her for the work. She belongs to BPL category and had lot of financial responsibilities. Her husband

works in Dubai and his job was in trouble due to covid-19 lockdown. She was emotionally exhausted and the work pressure constantly affected her activities.

Even though, Y was new to the job, the covid fieldwork helped her to improve her skills in community engagement. It was not an easy task for Y to shift residents to quarantine centers, where they used to hide symptoms and showed resistance. Apart from the quarantine facilities, community kitchens were set up to prepare food kits for the people in isolation and most of the time Y used to be a part of it. Covid positive pregnant women were given special care at Poojapura Ayurvedha Hospital. There were many challenges and issues, faced by Y during the pandemic. As a young woman, many ignored her words. The relatives and bystanders of patients were restless due to the stress they were facing. Due to the continuous fieldwork and direct interaction with the patients, Y tested positive, which gradually spread to her family members including her child. She went to complete isolation with her affected family members and tried to contact those who had primary contact with her. Later, a slight decrease in the number of covid-19 patients was visible, which was a relief for Y and her family.

Case 3

Mrs. Z was a 46 year old ASHA worker from another ward in Poonthura village comprising of 2500 houses and a population of more than 21000. She lives with her husband's family along with her two kids. She had an experience of 10 years and her family used to support her job. The covid duty was initially handled by Z, since the first covid patient in Poonthura village was detected in her ward and the whole family faced a lot of stigma from the public. Z used to hear lot of yelling and criticism from the people, and her husband was so angry seeing people shouting at his wife. Also, she was constantly affected by the thoughts of her children's education and online classes.

Z also had physical problems since she used to wear the PPE kit from morning to night without taking food and water. She doesn't change the PPE kit in the middle of the day because there is a possibility of spreading the pandemic. It was the first time for Z, where she used to do such major duties during her career. Z used to provide emotional assistance for family members of covid victims to respect their sentiments. The body will be buried with the safety rules and only close relatives can attend the rituals. Handling the emotional problems of the family members was a task for her.

Z gave special attention to those who had other serious health issues including heart and kidney problems. With the help of proper reports, fieldwork assessment, evaluation of test reports and quarantine centers most of the issues were being handled in the community.

7. Discussion and Analysis

7.1 Major Activities

ASHA workers were one of the crucial intermediaries between health administration system of government and general public during the pandemic. Their major duties comprised of house visits and community engagement that resulted in an enfold control of the widespread of coronavirus diseases. From identifying persons with symptoms to grief support services for the relatives of covid victims, ASHA workers carried out several major duties, which are summarized below.

Table 1: Major Activities of ASHA Workers

Major Activities	
House Visits	Community Engagement
<p style="text-align: center;">Direct house visits include</p> <ul style="list-style-type: none"> • Follow up with different patients, bed ridden, old aged, pregnant women, pensioners etc. • Direct awareness/education about the risk behind pandemic and collection of information about the people under risk. • Followed usual duties of ASHAs including welfare of pregnant women. • Ensuring welfare of children and pregnant women • Assistance for students learning in online classes. 	<p style="text-align: center;">Allotting quarantine facilities and testing Centers</p> <ul style="list-style-type: none"> • Allotting isolation facilities for risk groups • Finding the right place for testing centers. • Identifying persons with symptoms and bringing them for testing. <p style="text-align: center;">Community Kitchen and Distribution of essentials</p> <ul style="list-style-type: none"> • Setting up community kitchen and distributing food to the needy people with the help of volunteers • Delivering medicines and essentials to patients • Distributing masks and sanitizers. <p style="text-align: center;">Emotional assistance and awareness</p> <ul style="list-style-type: none"> • Emotional support to people in quarantine • Providing aid for bystanders of covid positive patients • Grief support services to the relatives of covid victims.

Source: Primary Data

Major activities of ASHA workers ranged from direct house visits to community engagement. As shown in the table, they had several duties to perform during covid-19 pandemic.

Z recalls “We went to each house and noted the names of people at risk, including bed ridden patients, pensioners, pregnant women and persons with serious health problems and so on. We did an overall assessment of the scenario to have a further plan. We made reports based on our visits as evidence.”

X states: *Since we have an idea about the geographical area of the community, were given the task of identifying buildings suitable for the testing centers. This multiplied our burden of duties, where we have to convince people in the nearby area of the testing centers about the safety measures.*”

ASHAs were found to be the only community health workers who had direct contact with the public.

7.2 Social Experiences

Social experiences depend upon the outside factors that affect the individual, which includes the environment living in, family, government and so on. Here ASHA workers had both positive and negative experiences from these societal factors which are listed in table 2.

Table 2: Social Experiences of ASHA Workers

Social Experiences	
Responses and Attitude of Public and Government	
Positives	Negatives
Inclination	Ignoring covid protocols by people
Continuous supervision from the side of Government	Management of superstitious beliefs of public
Improved experience in Community Engagement	Lack of education of people about the risk behind the pandemic
Positive role play initiated during the pandemic	Lack of family support and motivation

Source: Primary Data

All the three cases had several experiences with regard to their fieldwork duties and responsibilities. Nonetheless their experiences as ASHA workers of a coastal village are quite similar. ASHA workers had both positive and negative experiences during their work in the village.

Y says *“One of the major problems of the ward / locality is the lack of education and awareness. Even though we gave them an overview about the issue, they are not capable of understanding the seriousness of the scenario.”*

Z and other fellow mates were not given a proper consideration by the public, where they used to shout at the ASHA workers whenever they visit them. They never complained about the attitude of the people towards them other than helping them.

Even though, there were negatives, many of the people supported and motivated ASHAs for their work done. ASHA workers were regularly available by ensuring needs of people including women and children. With the Covid duties, they handled their usual responsibilities with pregnant women and children. Also, they provided adequate services for those who tested Covid positive especially among pregnant women. Therefore, many were thankful to the health activists. The government also announced an enhancement of honorarium for the health workers especially who worked during Covid pandemic. They also reported to have improved their level of experience on Community management.

7.3 Psychological Experiences

As a human being, each and every person has his or her own mental and emotional strength to handle particular situations. All these psychosocial factors are directly or indirectly connected to each other as social beings. Here, certain personal and general factors that affected the feelings and emotions of ASHA workers during the pandemic are summarized.

Table 3: The Psychological Experiences of ASHA Workers

Psychological Experiences		
Personal Factors		General factors
Positives	Negatives	
Happiness in doing something for the society	Fear and anxiety about the health of self, family and public	Ignorance and disregard from the public
Proud feeling	Feeling of helplessness	Lack of consideration appreciation from both Government and People

Source: Primary Data

Fear and anxiety was common among the three ASHA workers about their personal life. Fear of getting sick and spreading to family including children was the initial fear among them.

Y says “I was not even aware of my health problems, but I constantly got disturbed due to the condition of my family members and people at my ward.”

Due to the rising numbers of covid patients, the ASHAs were quite nervous about their self and family. In one of the cases, family tested covid positive from ASHAs due to fieldwork.

Z says: “At the beginning itself, I was the only one who went through such an emotional breakdown, but I felt that I can overcome this pressure slowly... I have managed to make my family understand and took special care of my family as one of the family members tested positive. There were minor ways of accusing in the beginning, but later the family supported and stood with me”.

There were many reasons for the emotional breakdown of the group. In between, they felt helpless without any particular reasons. All they wanted was a feeling of being supported and motivated by the people and authority which was absent.

Apart from the social and psychological factors, there are certain physical and mobility reasons that contribute to the overall experiences of ASHA workers. The physical factors including headache, body pain due to continuous fieldwork and lack of transportation facilities and miles of walking for house visits.

7.4 Challenges Faced by ASHA Workers

Every job has its own hardships and commitments. Due to the continuous fieldwork, ASHA workers faced several problems including physical, mental and social challenges. All these factors are directly connected to each other. Table (e) listed several major problems that faced by ASHA workers.

Table 4: Challenges faced by ASHA workers

Physical Challenges	Mental Challenges	Social Challenges
Body aches	Nervousness	Anxiety among families
Body rashes	Feeling of	Lack of family support
Feeling of tiredness	worthlessness	Negligence and Ignorance of society
Constant headache	and unhappiness.	Lack of people's willingness to follow guidelines
Muscle pain	Emotional breakdown	Personal and work crisis

Source: Primary Data

Every job has its own hardships and commitments. Due to the continuous fieldwork, ASHA workers faced several problems including physical, mental and social challenges.

Z says: "At the end of the day, we had severe body aches and tiredness, since we skip food and water for the whole day due to PPE kit"

Y says: "I remember a day when I cried in front of a group of people when I felt incapable. At that day I promised myself to be logical than getting emotional."

X recalled: "Initially we were quite nervous about the condition, but we ourselves got motivated because we are the one to support our people in the community. It was not that easy to manage every one, since the place is densely populated. "

7.5 Coping Strategies

An individual is capable on developing coping methods against any kind of crisis. Here, even during the pandemic condition, Social Health Activists never failed in solving their issues both logically and emotionally. This was not a sudden process; they took time and patience to develop these strategies.

Table 7.5: Coping strategies adopted by ASHA workers

Action Focused Coping	Emotion Focused Coping
Daily Reporting	<ul style="list-style-type: none">• Self motivation and positive thinking• Carrying hope and avoiding negativity• Coping with stress• Group sessions with other ASHAs• Reporting and availing help from authorities• Convincing family and relatives about the safety measures.
Daily status of the village	
Number of covid patients	
House visits and Casework	
Community engagement	
Quarantine facilities	
Special care and attention to risk group	
Awareness and distribution of masks and Sanitizers	
Other Coping strategies to be deployed	
Locating testing centers and isolation wards.	
Support from Police officials and government.	

Source: Primary Data

ASHAs never skipped reporting authorities about the daily status of Poonthura village, which led to an easier evaluation process.

X, Y and Z were very strict with their fieldwork, where they managed to visit each house with maximum precautions and tried to give awareness by distributing sanitizers and masks to the people.

The ASHA workers concentrated on both actions based and emotion-based strategies during the time. They have to manage a large population; therefore, they also sought help from government officials and local volunteers.

8.1 The Major Experiences

As an outcome of the study, following are the experiences of ASHA workers. The experiences of all respondents depended on their social, psychological

and certain other factors including physical amenities and mobility factors. All these factors are connected to each other both directly and indirectly. Social factors mainly depended upon the responses and attitude of public and government towards the activities of ASHA workers. The positive experiences comprise of upliftment of ASHAs and continuous supervision and favorable responses from the side of government. The ASHAs could improve their level of experience in community engagement and initiated a role play in the community during the pandemic. The negligence of public towards covid protocols, superstitious beliefs of old aged and lack of family support multiplied their challenges and marked a negative experience during the pandemic. There was a proud feeling and happiness for ASHAs when the numbers of covid patients went declined. They also felt worthless and angry when people ignored and showed disrespect to them. ASHAs played major roles through house visits and community engagement during covid-19 pandemic. They had irreplaceable role in the community during covid-19 pandemic. Through direct house visits, health activists done a continuous follow up with covid patients and persons in risk with all the safety precautions. They gave special attention to different patients, bed ridden, pregnant women, pensioners etc. During the house visits, they monitored the activities of people especially children and ensured they are active and can follow online classes without any difficulties. They prepared route maps and primary contacts of covid positive patients to prepare list of persons in quarantine. Along with this, they carried out the usual duties of ASHA workers. Through community engagement, they were able to allot quarantining and testing centers in the community. They took persons who showed symptoms to testing centers. As part of lockdown, they were in charge of community kitchens and distribution of food to the people in need. This includes delivery of medicines, masks and sanitizers. Apart from the above, grief support services were given to the relatives of covid victims. The day to day reports are sent to supervisors and respective authorities for further evaluation and planning. Physical challenges consisted of body pains, body rashes due to wearing of PPE kit and walking for miles in the village, as well as constant feeling of tiredness and muscles pain. There are times when the health activists faced emotional breakdown, where they used to feel nervous and angry when they see no results of their work. Sometimes they were in a state of feeling of worthlessness. When comes to social challenges, lack of family support, risk for family members falling ill, negligence of covid protocols by public, disrespect

and ignorance from the side of villagers were common problems faced by ASHA workers. Action focused methods comprises of daily reporting of activities to authorities, so that up to date actions are taken place. They were regular in-house visits and fieldwork so that they could manage quarantining facilities, testing centers, follow up activities with special group including pensioners, bed ridden, pregnant women, children and so on. Besides, they requested support from the side of police officials in following covid protocols in the village. As part of emotion focused coping, they motivated and encouraged themselves to do well for the community. Most of the time, they served community as part of their attitude towards helping others. The ASHAs formed group sessions to discuss their concerns in group which was a greater relief for them. The supervisors also joined with them.

8.2 Suggestions

The government may provide a special training to ASHA workers on disaster management or pandemic control protocols based on the locality they live in. Even though there was a slight increase in honorarium, they deserve a better remuneration and consideration for the service they offer. Most of the time, they have to bear expenses during the fieldwork. There should be specific job description so that duties and tasks, based on the population of the village they work can be made available therefore duties and tasks should differ according to the localities. More ASHA workers may be appointed based on the density of population they serve when needed. The government should consider appreciating the works of these health activists and general public may be encouraged to recognize the work they are doing. An awareness session or seminar can be organized through online platforms for public to make them understand about the relevance of ASHA workers. The unheard and unseen on site health emergency management stories of these brave hearts need to be traced by holding serious research so as to disseminate it for the benefit of the world.

9. Conclusion

The study attempted to explore ASHA workers of Poonthura village during covid-19 pandemic in understanding the overall experiences of health activists during a pandemic. Each ASHA worker has their own experiences based on the locality they are working. This varies according to several factors including population, culture, education and awareness among the people of the locality. Currently, ASHA workers, the unsung heroes sacrificed their

time and energy to the community more than they were expected to do. The activities of ASHA workers are still considered as a low valued job and they are neither given any respect by their own community nor paid handsome remuneration. Kerala model of health care is a well appreciated model beyond nations, where this hidden work of ASHA women proved to be a major pillar worth reporting. The study remains proof of the efforts and contribution that ASHA workers have rendered to the society, as well as the sacrifice of their family members during such a pandemic condition. Concepts like tracking the epidemiological link, an index case, a contact case, a suspect case and a quarantine were public health measures and these measures have been successfully implemented with the help of frontline workers including ASHA workers. The victory lies in the collective efforts of the particular team comprises of government, doctors, nurses paramedics and ASHAs, the unsung warriors. Media and the system forgot to pay gratitude towards ASHAs, the ones who were by the sides fighting against the pandemic is a painful reality.

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Synthesis of Au-Ag Bimetallic Nanoparticles Using *Melastoma Malabathricum* Flower Extract

Krishnaprabha M^{1,2}

¹ Department of Electronics, St Aloysius College (Autonomous)
Mangalore - 575003 India

² Department of Physics, Dr P Dayananda Pai - P Satish Pai Govt First
Grade College, Managalore Carstreet, Mangalore - 575001, India
E-mail: krishnaprabham@rediffmail.com

Abstract: *Au-Ag bimetallic nanoparticles exhibit unique optical, electronic and catalytic properties different from their monometallic counterparts. This paper reports a simple cost-effective and eco-friendly solution based phytosynthesis of Au-Ag bimetallic nanoparticles. Synthesis of bimetallic Au-Ag nanoparticles was carried out using the co-reduction of mixture of different proportions of 0.25 mM AgNO₃ and 0.25 mM HAuCl₄.3H₂O solutions at 50 °C using Melastoma malabathricum flower extract. Synthesized nanoparticles were characterized using UV-Vis spectrophotometer, Field Emission Scanning Electron Microscope (FESEM) equipped with Energy Dispersive X-ray analysis (EDX) instrument and Transmission Electron Microscope (TEM). The presence of single surface plasmon resonance peak in the absorption spectra suggested the formation of alloy type Au-Ag nanoparticles. The morphology studies were carried out using micrographs taken using FESEM and TEM. TEM micrographs revealed the presence of both alloy type and core-shell type bimetallic Au-Ag nanoparticles. The elemental analysis carried out using EDX spectrum showed the presence of both Au and Ag in the synthesized bimetallic nanoparticles.*

Key Words: *Bimetallic Au-Ag Nanoparticles, Co-reduction, FESEM, TEM.*

1. Introduction

Desirable features of two or more noble metals like Au, Ag, Pt, Pd can be combined to form new functional materials exhibiting interesting physicochemical properties. The structure as well as size of bimetallic nanoparticles depends on the preparation conditions, kinetics of reduction of metal ions, miscibility of different metals and so on. As Au possesses relatively low reactivity, it easily alloys with other noble metals like Ag, Pd or Pt.

Among bimetallic nanoparticles, bimetallic Ag-Au nanoparticles have received considerable attention from several researchers as they possess size dependent optical, electrical, electronic and catalytic properties that are not exhibited by their monometallic nanoparticles [1-7]. Various synthesis techniques like chemical [1, 2], radiolytic [3], photolytic [4], laser assisted [5], laser ablation [6] etc. employing either co-reduction or simultaneous reduction have been reported to prepare Au-Ag nanoparticles of alloy type or of core-shell type decided by the homogeneous or heterogeneous mixing of atoms using respective metal precursor solutions. As per literature, co-reduction of two metal precursor solutions using reducing agents like sodium citrate, sodium borohydride etc. is best suited for the synthesis of alloy type bimetallic nanoparticles where as successive reduction is best suited for core-shell type wherein metal ions of one metal are reduced and deposited on the surface of preformed nanoparticles of other metal acting as core [2, 3, 6-8]. Synthesis of Au (core)-Ag (shell) bimetallic nanoparticles using extract prepared from neem leaf [9], mushroom [10], gripe water [11], persimmon leaf [12] etc. as reducing agent have been reported to name a few. The use of Au-Ag bimetallic nanoparticles as Surface Enhanced Raman Scattering (SERS) substrate [8, 11, 13, 14], cytochemical marker [15], catalysis [7] have been reported.

Owing to the difference in the reduction potentials of Ag and Au, Au^{3+} ions undergo quick reduction when compared to Ag^+ ions. Due to this reason, if both the Au and Ag precursor solutions are subjected to simultaneous reduction, Au should act as core as Au^{3+} ions undergo quick reduction and the reduced Ag atoms deposit on the AuNPs thus leading to Au (core)-Ag (shell) nanoparticles. However, the successive reduction method in which Ag is reduced on the preformed AuNPs also yields Au (core)-Ag (shell) nanoparticles. *Melastoma malabathricum* is a flowering plant commonly called as Malabar Melastome belongs to the family Melastomataceae. It is also known as Indian rhodendron or senduduk (called as nekkarika in vernacular) and is being used in traditional medicine [18]. Experiments performed with *Melastoma malabathricum* flower extract as reducing agent at room temperature with precursor solution of Au and Ag have shown the rapid reduction of Au precursor solution when compared to the slow reduction of Ag precursor solution [18, 19]. The reduction of Ag precursor solution was found to increase with the increase in temperature. The results of

experiments carried out by performing simultaneous reduction of both Au^{3+} ions and Ag^+ ions at 50 °C using *Melastoma malabathricum* flower extract is presented in this study.

2. Synthesis and Characterization of Au-Ag Bimetallic Nanoparticles

$\text{HAuCl}_4 \cdot 3\text{H}_2\text{O}$ purchased from CDH and AgNO_3 obtained from Sigma-Aldrich were used as received as the source of Au^{3+} ions and Ag^+ ions respectively. Double distilled water was used to prepare all aqueous solutions. Fresh flowers of *Melastoma malabathricum* were collected from Rayee (Karnataka), India. 0.3 g of thoroughly washed fresh petals of *Melastoma malabathricum* were added to a beaker containing 25 mL of double distilled water and heated slightly (40 °C) followed by filtration after the violet coloured petals became colourless. The filtered extract was used to prepare bimetallic Au-Ag nanoparticles.

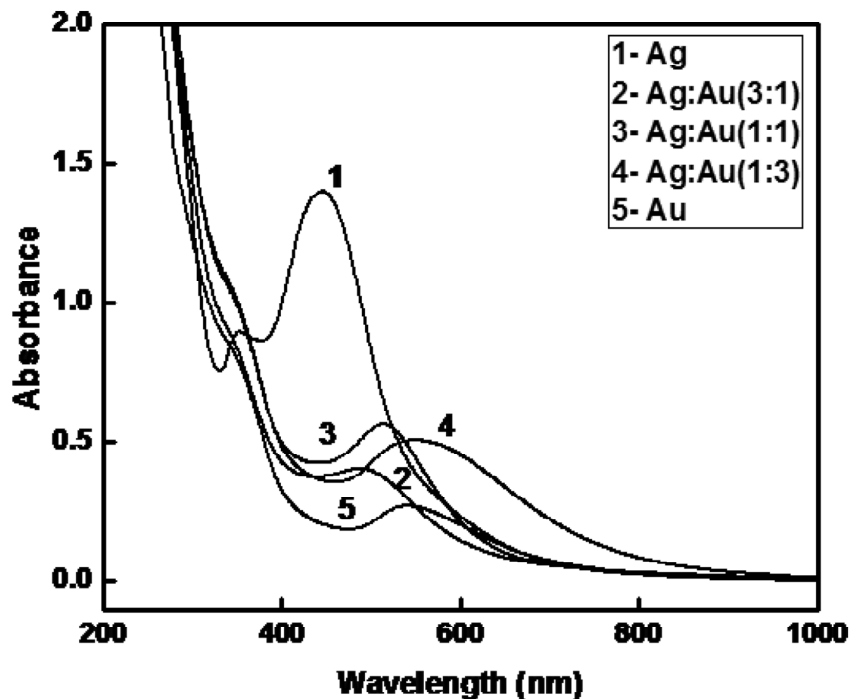
The co-reduction of the solution mixture containing both Au^{3+} ions and Ag^+ ions was carried out at 50 °C using *Melastoma malabathricum* flower extract. Bimetallic Au-Ag sample named Ag:Au (3:1) was prepared by adding 4 mL of flower extract to the solution mixture containing 12 mL of 0.25 mM AgNO_3 and 4 mL of 0.25 mL of HAuCl_4 . Sample Ag:Au (1:1) was prepared by adding 4 mL of flower extract to the solution mixture containing 8 mL of 0.25 mM AgNO_3 and 8 mL of 0.25 mL of HAuCl_4 and the sample Ag:Au (1:3) was prepared by adding 4 mL of flower extract to the solution mixture containing 4 mL of 0.25 mM AgNO_3 and 12 mL of 0.25 mL of HAuCl_4 . All the 3 samples were prepared under continuous stirring conditions. For comparison purposes, separate Ag and Au nanoparticle samples (AgNPs and AuNPs) were also prepared by adding 4 mL of flower extract to 16 mL of 0.25 mM AgNO_3 and HAuCl_4 precursor solutions under same synthesis conditions. Shimadzu UV-1800 UV-Vis spectrophotometer was used to acquire the UV-Vis absorbance spectra for all the solutions. Micrographs were taken using Carl Zeiss Field Emission Scanning Electron Microscope (FESEM) model Sigma operated at an accelerating voltage of 5 kV fitted with an Energy Dispersive X-ray analysis (EDX) instrument (DST PURSE Laboratory, Mangalore University, Mangalagangothri) and Transmission Electron Microscope (TEM) model JEOL 3010 operated at 200 kV (TEM instrument at Sprint Testing Solutions, Nagpur). Samples were dried on a piece of thin aluminium sheet and dried on carbon coated copper grid for FESEM and TEM analysis respectively.

3. Results and Discussion

3.1 UV-Vis Studies

Metallic nanoparticles especially of Ag and Au exhibit an optical property known as Surface Plasmon Resonance (SPR). When an incident light is incident on metal surface, SPR occurs due to the collective oscillation of conduction band electrons which undergo resonance with the oscillating electric field of incident light. SPR depends not only on the size and shape of the nanoparticles but also on the dielectric medium in which the nanoparticle is present [6-10]. Normally, spherical AgNPs exhibit absorbance peak at about 400- 450 nm and spherical AuNPs exhibit absorbance peak at about 520- 550 nm. Two plasmon bands will appear in the wavelength range 400 – 550 nm for the physical mixture containing both AuNPs and AgNPs or for core shell Au-Ag nanoparticles [7, 16]. Typical Au-Ag alloy nanoparticles exhibit single absorption band with the position of SPR peak dependent on the composition of Ag and Au in the system [1]. The SPR peak of Au-Ag alloy nanoparticles will lie in between SPR peak of AgNPs and AuNPs and is shifted from Ag to Au with decreasing Ag: Au molar ratio [17]. Figure 1 represents the UV-Vis absorbance spectra of the 5 samples Ag, Ag: Au (3:1), Ag: Au (1:1), Ag: Au (1:3) and Au. SPR peaks of Au-Ag nanoparticles were found to be 489 nm for Ag: Au (3:1) sample (curve 2), 513 nm for Ag: Au (1:1) sample (curve 3), and 550 nm for Ag: Au (1:3) sample (curve 4), where as the SPR peak observed under the same experimental conditions was at 445 nm for AgNPs (curve 1) and 540 nm for AuNPs (curve 5). The appearance of absorption spectra having single surface plasmon band is indicative of the possible formation of Au-Ag nanoparticles rather than the reaction mixture containing the monometallic nanoparticles of Au and Ag or reaction mixture containing more number of Au (core)-Ag (shell) nanoparticles.

Figure 1: UV-Vis Absorbance Spectra of the 5 Samples Ag, Ag:Au (3:1), Ag:Au (1:1), Ag:Au (1:3) and Au



3.2 FESEM and TEM Studies

The micrographs obtained for sample Ag:Au (1:1) using FESEM and TEM are shown in figure 2a and figure 2b & 2c respectively. No much information can be obtained from the FESEM images. From the TEM images, the formation of Au (core)-Ag (shell) nanoparticles as well as Ag-Au alloy nanoparticles can be seen. There is a clear contrast between the Au and Ag with the darker regions corresponding to Au and less darker regions corresponding to Ag. Similar results were reported in the literature [16]. The presence of both Au and Ag component is visible from EDX spectrum of Ag:Au (1:1) sample as seen in figure 3.

Figure 2: (a) FESEM Micrograph of Sample Ag:Ag(1:1) (b) and (c) TEM Micrographs of Sample Ag:Ag(1:1)

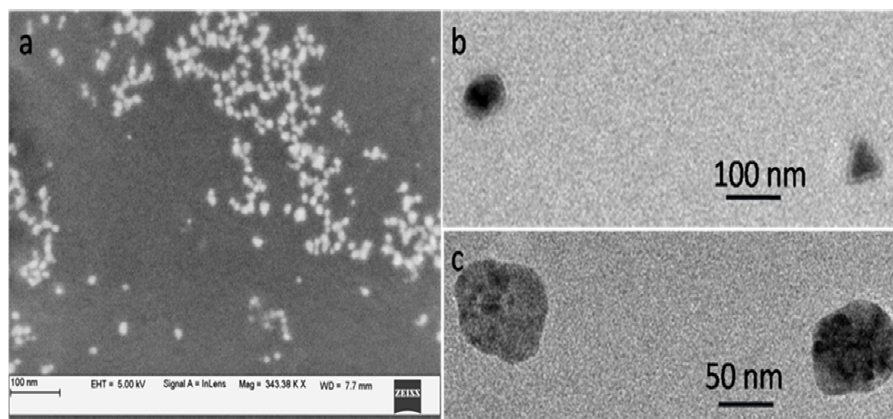
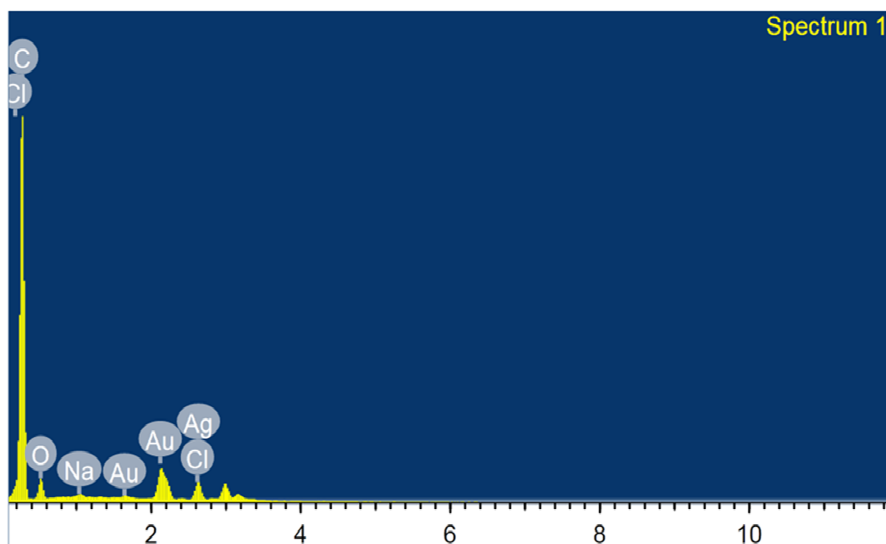


Figure 3: EDX Spectrum of Ag:Ag(1:1) Sample



4. Conclusion

Synthesis of Au-Ag nanoparticles using *Melastoma malabathricum* flower extract was investigated. During the formation of AuNPs alone, quick reduction of Au³⁺ was observed at room temperature where as the formation of AgNPs under the similar experimental conditions was found be very slow thereby implying the slower reduction of Ag⁺ ions. Owing to these observations, expected the formation of Au (core)-Ag (shell) nanoparticle rather than the Au-Ag alloy nanoparticles. But the presence of single SPR peak in UV-Vis absorbance spectra was indicative of the formation of Au-Ag alloy nanoparticles and not the Au(core)- Ag (shell) nanoparticles. TEM micrographs also revealed the formation of Au-Ag alloy nanoparticles in addition to few Au (core)- Ag (shell) nanoparticles. The synthesized nanoparticles can be utilized for various applications such as catalysis, SERS studies, nonlinear optics etc.

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