# RAJARATA JOURNAL OF SOCIAL SCIENCES

Volume 6 Number 2 2022

## EDITORIAL NOTE

**Mr. Prabhash Siriwardhana**

## RESEARCH ARTICLE

**Measuring the Individual Carbon Footprint and Exploring Its Determinants: A Case Study in Galewela Divisional Secretariat Area in Matale District of Sri Lanka**
**Dissanayaka D.M.M.G.J.M**
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*Department of Environmental Management, Rajarata University of Sri Lanka, Mihintale, Sri Lanka*

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**Differences in Health and Wellbeing of Rural and Urban Lesbian communities: A review of literature**
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***Department of Social Sciences***
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# RAJARATA JOURNAL OF SOCIAL SCINCES

## AIM AND SCOPE

The Rajarata Journal of Social Sciences is a peer-reviewed journal published by the Department of Social Sciences, Faculty of Social Sciences and Humanities, Rajarata University of Sri Lanka. This journal publishes empirical research and review papers in the inclusive coverage of the area of Social Sciences. The scope of this journal covers the diversity of the contemporary research falling in the broader discipline of Social Sciences.

At present, it is obvious that the real academic explorations relevant to the field of Social Sciences and Humanities and other fields are inadequate. It is also apparent that this has resulted in the decline of the new academic innovations that will contribute to the modern Social Promotion. Hence, the main aim of this journal is to build the platform for the academics and researchers to publish innovative and original scholarly work in the field of Social Sciences.

The Journal is to be published in two issues a calendar year in June and December and only accepts the articles written in English. This journal facilitates immediate open access to the public allowing freely available access and global exchange in the wider world of knowledge in the field of Social Sciences.

# RAJARATA JOURNAL OF SOCIAL SCIENCES

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# Editorial Note

Prabhash Siriwardhana
Editor-in-Chief
Rajarata Journal of Social Sciences
Rajarata University of Sri Lanka

Welcome to the recent edition of the Rajarata Journal of Social Sciences, a dedicated platform committed to disseminating high-quality research within the field of social sciences. In my capacity as the Editor-in-Chief, I am delighted to present a diverse collection of scholarly articles that reflects the depth and breadth of social science research.

In this issue, we showcase contributions from esteemed researchers, encompassing a range of topics that span the spectrum of social sciences. Our goal is to foster an interdisciplinary dialogue that advances our understanding of the complex social dynamics shaping our world. The academic community at Rajarata University and beyond continues to impress with its commitment to rigorous inquiry and intellectual exploration. The Rajarata Journal of Social Sciences serves as a conduit for this wealth of knowledge, providing a platform for researchers to share their findings and engage in meaningful discussions.

We extend our sincere gratitude to the authors who have contributed their valuable research to this edition. Their dedication to advancing social science scholarship is evident in the depth and insight found within these pages. Additionally, we would like to express our appreciation to the diligent peer reviewers who have generously shared their expertise to ensure the academic rigor of the published articles.

As we navigate the ever-evolving landscape of social sciences, the Rajarata Journal of Social Sciences remains committed to promoting research that is not only academically sound but also relevant to the challenges and opportunities of our contemporary society. We encourage scholars, practitioners, and students to actively engage with the content presented here, fostering a collaborative spirit that enhances our collective understanding of social phenomena.

Thank you for your continued support of the Rajarata Journal of Social Sciences. We hope you find this edition insightful and inspiring, and we look forward to your ongoing contributions to the vibrant discourse within the social sciences.

Yours sincerely,

Prabhash Siriwardhana
Editor-in-Chief
Rajarata Journal of Social Sciences
Rajarata University of Sri Lanka

# Measuring the Individual Carbon Footprint and Exploring Its Determinants: A Case Study in Galewela Divisional Secretariat Area in Matale District of Sri Lanka

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## ABSTRACT

The carbon footprint (CFp) is the total amount of carbon dioxide emissions caused by person, product, or other organization's activities. This study aims to assess the individual CFp and explore its determinants in the selected sample of the Galewela Divisional Secretariat in the Matale District of Sri Lanka. To achieve these objectives, primary data were collected through a questionnaire survey and interviews while secondary data were gathered from journal articles, reports and websites. The convenience sampling method was used with 120 respondents from Pattiwela, Pathkolagolla, and Hombawa Grama Niladhari Division in Galewela Divisional Secretariat. The standard online carbon footprint calculator was used to calculate the individual CFp, which calculates the CFp of each individual. It measures the CFp of household consumption, transportation and secondary consumptions. IBM SPSS 21 and MS Excel software were used to analyze the data. Data analysis techniques included multiple regression, correlation analysis, and descriptive analysis. According to the findings of the online CFp calculator, the average per capita CFp in the study area is 0.11 tons/month and which is lower than the average CFp at the global level recorded about 4.79 tons/month. The study also found that respondents' family income, age and gender have a significant influence on their individual CFp in this area.

**Keywords**: Greenhouse gas, Carbon dioxide, Carbon footprint, Per capita CFp, Factors affecting CFp.

## Introduction

Global warming has become one of the most prominent environmental issues all over the world. The most harmful effect of global warming is the increase in temperature. The global average of combined land and ocean surface temperature has risen by 0.85 °C in the last 130 years (1880-2012) and is expected to rise even faster in the future (Awanthi & Navaratne, 2018). The emission of greenhouse gas (GHG) from human activities is the primary cause of global warming; mainly the emission of carbon dioxide ($CO_2$), methane ($CH_4$) and nitrox oxide ($N_2O$). Therefore, actions should be taken to reduce GHG emissions. Carbon Footprint (CFp) is one the most effective ways to reduce GHG emissions. It quantifies the total amount of $CO_2$ and other GHG emissions caused directly or indirectly by human activities, organizations, products, or events.

In recent decades, the concept of CFp has gained popularity as a measure of greenhouse gas emissions due to human activity. It is also known as primary and secondary carbon footprints (Purwanto et al., 2019). CFp can be measured in a person, product, or organization. A personal CFp is the amount of $CO_2$ emitted by a person's clothing, food, housing, and daily life. A product CFp calculates GHG emissions from the extraction of raw materials and manufacturing to use and final re-use, recycling, or disposal of a product (goods or services). The organizational CFp quantifies GHG emissions from all of the organization's activities, including energy used in buildings, industrial processes, and company vehicles (Gao et al., 2014). Therefore, CFp estimation is helpful for the efficient management of greenhouse gas emissions and the evaluation of measures to reduce them (Angelakoglou et al., 2015).

According to the World Bank Report (2014), the global per capita CFp is 4.98 metric tons. Odabasi & Buyukgungor (2014) identified that, the CFp varies from country to country, most notably, in rich developed countries, like the United Kingdom, newly industrialized, rich developed countries like China and poor developing countries like Uganda. Some developed countries state that city dwellers have lower CFp than their rural counterparts. Certain developed nations assert that urban residents exhibit a comparatively smaller carbon footprint than their rural counterparts. For instance, an annual per capita carbon footprint for a resident of New York amounts to 7.1 tonnes of CO2, while the average annual per capita carbon footprint for the United States as a whole is around 20 tonnes. Similarly, a Londoner's annual carbon footprint totals 6.2 tonnes of CO2 per capita, in contrast to an average of approximately 11 tonnes for the entirety of the United Kingdom (Bhoyar et al., 2014). Furthermore, India is the fourth largest GHG emitter in the world due to its large population. The per capita GHG emission in India is recorded as 1.3 tons and is below the world average (Bhoyar et al., 2014). According to Jaiswal & Shah (2013), the assessment of CFp of the households can help to measure their CFp and keep track of changes in their daily activities. It can depict how much a particular event or activity contributes to energy use and carbon dioxide output. It can also help to figure out the needed changes in the lifestyle required by family members in the households.

The CFp is calculated based on household consumption, transportation and secondary consumption of the respondents. For example, when a vehicle is driven, the engine consumes fuel, which thereby release a certain amount of $CO_2$ into the atmosphere based on the amount of fuel used and the distance traveled. In addition to the use of fuels (such as wood, kerosene, coal, and LPG) for various activities like cooking and water heating, electrical power also contributes to $CO_2$ emissions into the atmosphere through the production and consumption of food, clothing, and other goods and services.
There are only few studies have been done regarding the individual CFp in Sri Lanka. The average worldwide carbon footprint is about 4.79 ton/year and the average Sri Lankan individual CFp is 1.00 tons/year and as well as, the worldwide target is to maintain the CFp and climate change at the level of 0 tons (https://www.carbonfootprint.com/calculator.aspx). Therefore, it is essential to estimate how daily lifestyle of people affect to the CFp and how they contributed to the climate change. This study measures individual CFp based of key factors namely household consumption, transportation and secondary consumption in Galewela Divisional Secretariat in Matale District covering three Grama Niladari Divisions, Pathkolagolla, Pattiwela, and Hombawa. The specific objectives of the study were to (a) measure the individual CFp, (b) measure the per capita CFp, (c) identify factors influencing individual CFp and (d) to develop guidelines to reduce CFp.

## Literature Review

### a. Climate change

According to the IPCC (2014) climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and which persists for an extended period, typically decades or longer. Further climate change is the long-term change in global weather patterns, associated especially with increases in temperature, precipitation, and storm activity (Philander, 2008). Anthropogenic activities are the root causes of the GHG emission. The main GHGs are carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$).). It has been found that almost 5400 million tons (Mt) of $CO_2$ equivalents are emitted annually from various sources linked to human activities (Ranasinghe, 2010). Many issues, including global warming, ecological imbalance, technological as well as economic and societal problems, have been caused by climate change. The primary cause of these problems is thought to be an increase in the concentration of GHG emissions (Abeydeera et al., 2019). Climate change impacts are the strongest and most comprehensive for natural and human systems and many regions affected by changing precipitation or melting snow and altering hydrological systems, affecting water resources (IPCC, 2014). According to the World Health Organization (WHO), climate is expected to cause approximately 250000 additional deaths per year from malnutrition, malaria, diarrhoea, and heat stress.

### b. Greenhouse gas (GHG) emission

According to the IPCC (2014), Since the pre-industrial era, anthropogenic GHG emissions have risen, primarily due to economic and population growth, and they are now at an all-time high. Due to this, atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have reached levels that have not been seen in at least the previous 800,000 years. The greenhouse effect is a natural process millions of years old and plays a crucial role in the overall temperature of the earth. First detected by Joseph Fourier in 1827 it was experimentally verified by John Tyndall in 1861 and quantified in 1896 by Svante Arrhenius. It has been published as a "A Synopsis on the Effects of Anthropogenic Greenhouse Gases Emissions from Power Generation and Energy Consumption" (Kweku et al., 2018). According to Annexure A of the Kyoto Protocol there are six major greenhouse gases in the atmosphere namely carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_20$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6). Some GHG occurs naturally in the environment, such as water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Others are created and emitted by human activities for example hydrofluorocarbon (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). But 72% of the totally emitted greenhouse gases are carbon dioxide (CO2), 18% methane and 9% nitrous oxide ($N_2O$) (Sugathapala & Jayathilake, 2012).

### c. Carbon footprint

The term CFp originates from the concept of ecological Footprint, which is a measure of human demand on the earth's ecosystems(Gao et al., 2014). The CFp has become a widely used concept in general public responsibility and mitigation action against global warming in recent years. Therefore, many companies, individuals and organizations are estimating the CFp to assess their own contribution to the global temperature risings (Bhautmage et al., 2015). This can be described as a measurement of the total GHG emissions that are caused directly and indirectly by a person, an organization, an event, or a product. Additionally, the organizational carbon footprint (CFp) measures the GHG emissions from all of the activities across the organization, including energy used in buildings, industrial processes, and company vehicles (Awanthi & Navaratne, 2018). The total amount of carbon dioxide emissions that are caused by a specific activity or that are accumulated over the period of a product's life stage is known as the product carbon footprint (Majid et al., 2014). This includes activities of government, companies, individuals, organizations, processes, industrial sectors etc. In all the sectors, the residential sector is significantly related to consumption.

Over the last several years, calculations of CFp have gained more importance due to the fact that the environmental norms and conditions specify a particular amount of $CO_2$ emissions for various activities

(Kumar & Goyal, 2018). Accordingly, CFp can be mainly classified as primary and secondary CFp. Primary CFp is a measure of $CO_2$ emissions resulting from the direct use of fuel such as oil or LPG for cooking and transportation whilst secondary CFp is the measure of $CO_2$ emission from the indirect activities. They are generated from household electronic equipment when operated by using electrical power sourced from power plants with fossil fuels. Such users have burned fossil fuels indirectly to obtain electricity (Purwanto et al., 2019).

### d. Classification of carbon footprint

The CFp can be calculated in an individual, product, service, event or organization. Two approaches are considered to calculate the product CFp. Such as total carbon emissions related to the manufacturing of that product or the emissions related to the marketing, distribution and consumption of that product (Nair & Chandrakar, 2016). They further explained corporate CFp is the calculation of the total greenhouse gas emission related to the different activities of an organization. Many institutions, ranging from universities and fire brigades to rescue services, food manufacturers, hotels, and hospitals, engage in the calculation of their Carbon Footprint (CFp). This metric encompasses the assessment of greenhouse gas (GHG) emissions produced by all aspects of an organization's operations. This includes quantifying the energy utilization of buildings, manufacturing plants, and corporate vehicles. Through CFp analysis, organizations receive a detailed inventory of their GHG emissions, facilitating the identification and establishment of reduction objectives for their primary sources of emissions (Awanthi & Navaratne, 2018).

There are numerous CFp models or calculators that are widely available on the Internet. The amount of electricity, oil, gas, or coal used annually is converted into carbon dioxide emissions in existing models in order to calculate the primary footprint of an individual or household. Furthermore, they convert the amount of kilometers traveled in a car, the distance traveled on various forms of public transportation, and the distance traveled by air to carbon dioxide emissions (Odabasi & Buyukgungor, 2014). According to the Climate Change Secretariat of Sri Lanka (2016) individuals and organizations are keen on estimating their CFp which is a measurement of total GHG emissions from their operations or/ and activities. Further, settlement of CFp is related to energy use both directly and indirectly. Direct energy use includes heat energy for cooking and energy use by private vehicles. Indirect energy use relates to the production of goods and services such as electricity and the use of clean water. In addition to the energy sector, transportation and settlement carbon footprint are also related to the household waste sector (Purwanto et al., 2019). Most household CFp models estimate direct emissions based on household-level energy use data, which individuals can obtain from utility bills or household electricity and natural gas utility meters. Such an approach is appropriate for individuals who wish to estimate their total carbon footprint and to better understand the relative contribution of household energy use to that footprint (Masanet et al., 2008).

## Methodology

This study employed both primary and secondary data. Primary data were collected through questionnaire surveys and interviews. Secondary data were collected from different sources such as journal articles, reports, and websites. A convenience sampling method was used, with 120 respondents from Pathkolagolla, Pattiwela, and Hombawa Grama Niladari Divisions in the Galewela Divisional Secretariat A self-administered questionnaire which consisted of two sections was developed to gather data from the respondents. The first section was used to collect basic information of the respondents including demographic data and data on their consumption patterns such as secondary consumption, public and private transportation, and household energy consumption. In the second section, respondents were asked about their level of awareness about CFp using five-point Likert scale questionnaires. Individual CFp were measured using a standard online carbon footprint calculator https://www.carbonfootprint.com/calculator.aspx. Data were analyzed using IBM SPSS 21 Software and Microsoft Excel. Descriptive statistics, regression and correlation analysis were used. The table 01 present the $CO_2$ emission factors in Sri Lanka.

**Table 01: Carbon dioxide emission factors in Sri Lanka**

| **Fuel** | **Unit** | **$CO_2$ emission** |
|---|---|---|
| Electricity | Kg/kwh | 0.71 |
| Diesel | Kg/l | 2.74 |
| Gasoline | Kg/l | 2.28 |
| LPG | Kg | 2.73 |
| Kerosene | Kg/l | 2.52 |
| Firewood | kg | 1.51 |

Source: Sri Lanka Sustainable Energy Authority 2020

## Results and Discussion

### e. Demographic data of the respondents

According to the Descriptive Statistics of the study area, the average age of respondents was 43 years and ranged from 26 to 60 years. As shown in table 02, while reviewing the educational level of the respondents, 17% have had primary education, 59% secondary,15% tertiary whilst only 8% had received vocational education. The findings revealed that 34% of the respondents were farmers, most being engaged in paddy cultivation. Of the respondents 26% worked in the private sector while 20% were government workers, mainly working in the armed forces, in schools as teachers, in government offices as administrative officers or as peons. Only 8% of the respondents were in self-employment. They have been involved as tailors, retailers, in fishing industry and in beauty culture. Of the respondents 10 % were engaged with the industrial sector.

**Table 02: Demographic data of the respondents in the study area**

| | | **Frequency** | **Percent** | **Valid percent** | **Cumulative percent** |
|---|---|---|---|---|---|
| **Gender** | Male | 60 | 50.0 | 50.0 | 50.0 |
| | female | 60 | 50.0 | 50.0 | 100.0 |
| | Total | 120 | 100.0 | 100.0 | |
| **Education** | Primary education | 21 | 17.5 | 17.5 | 17.5 |
| | Secondary education | 71 | 59.2 | 59.2 | 76.7 |
| | Tertiary education | 18 | 15.0 | 15.0 | 91.7 |
| | Vocational education | 10 | 8.3 | 8.3 | 100.0 |
| | Total | 120 | 100.0 | 100.0 | |
| **Occupation** | Government job | 24 | 20.0 | 20.0 | 20.0 |
| | Private sector job | 32 | 26.7 | 26.7 | 46.7 |
| | Agricultural sector | 41 | 34.2 | 34.2 | 80.8 |
| | Entrepreneur | 10 | 8.3 | 8.3 | 89.2 |
| | Industrial sector | 13 | 10.8 | 10.8 | 100.0 |
| | Total | 120 | 100.0 | 100.0 | |

## f. The total carbon footprint of the study area

The individual CFp was measured based on household consumption, transportation, and secondary consumption. According to table 03, the total individual CFp in this study sample was 13.43 tons /month and annually produces 164.67 tons of CFp. Housing activities generated 3.59 tons/month of CFp. Private transportation produced 1.98 tons/month CFp. Public transportation produced 2.53 tons/month of CFp. The secondary consumption of the respondents produced 5.33 tons/month of CFp. According to the study done by Tanveer & Purnima (2019) the total household CFp of the semi-urban areas of Jammu, J&K (India) is 5.46 tons/year. Similarly, Akhter & Malaviya (2022) identified the total household CFp in Chak Chua village in Jammu District, India 238.91 $kgCO_2e$/month and it was varying from 0.25 to 66.43 $kgCO_2e$ per house per month for wood and petrol.

**Table 03: Total carbon footprint of the study area**

| **Individual CFp (per month)** | **Amount (Tons)** |
|---|---|
| Household CFp | 3.59 |
| Private Transportation CFp | 1.98 |
| Public Transportation CFp | 2.53 |
| Secondary Consumption CFp | 5.33 |
| **Total $CF_P$ of study sample** | **13.43** |

## g. Per capita carbon footprint in the study area

Table 04 demonstrates the per capita CFp in the study sample area. The household per capita CFp is 0.02 tons/month. The per capita CFp of private transportation is 0.01 tons/month and, the per capita CFp of public transportation is 0.02 tons/month. The per capita CFp of the secondary consumption is 0.04 tons/month. According to that, the total per capita CFp of the study sample area is 0.11 tons/month. Based on the online carbon footprint calculator (https://www.carbonfootprint.com/calculator.aspx), the per capita CFp in the study sample area is lower than the Sri Lanka average individual per capita CFp level. The average individual CFp in Sri Lanka is 1.0 tons/month (https://www.carbonfootprint.com/calculator.aspx). According to the Bera et al., (2022) in West Bengal in India, the average total CFp of urban dwellers is 2.33 tons. In contrast, the average rural per capita total CFp is 0.56 tons. The average CFp for people in India is 1.73 tons, and the average worldwide CFp is about 4.8 tons. (Bera et al., 2022)

**Table 04: Per capita carbon footprint of the study area**

| **Individual CFp** | **Amount CFp (Tons)** | **Per capita carbon footprint (Tons)** |
|---|---:|---:|
| Household CFp | 3.59 | 0.02 |
| Private Transportation CFp | 1.98 | 0.01 |
| Public Transportation CFp | 2.53 | 0.02 |
| Secondary Consumption CFp | 5.33 | 0.04 |
| **Total CFP** | **13.43** | **0.11** |

### 4.4. Per capita carbon footprint of the male and female respondents in the study area

According to Table 05, the per capita CFp of the male is 0.07 tons/month. Female per capita CFp is 0.04 tons/month. Therefore, the per capita CFp of the male respondents is higher than the female respondents in the study sample. The highest consumption patterns of the male respondents and the use of private vehicles are the main reasons for the difference. Most of the male respondents used motorbikes or three-wheeler for their daily purposes than the female in this study sample area.

**Table 05: Per capita carbon footprint of the male and female**

| Gender | Total carbon footprint | Per capita Carbon footprint |
|---|---|---|
| Male | 8.62 | 0.07 |
| Female | 4.81 | 0.04 |

## 4.5 Household carbon footprint of the study area

Household CFp mainly depends on the electricity and fuel consumption (LP gas, kerosene, wood) in the study area. According to Figure, 01, total household CFp of the respondents is 3.59 tons/month. The electricity consumption CFp of the study sample area is 1.46 tons/month. The CFp of the wood consumption is 1.97 tons/month. Lp gas consumption produces 0.15 tons/month of CFp, and kerosene consumption produces 0.01 tons/month of CFp in this study sample area. Accordingly, household wood consumption produces the highest amount of CFp compared to other household energy consumption. Tanveer & Purnima (2019), also identified wood consumption produces the highest amount of CFp in semi-urban areas of Jammu, J&K (India). They also found that the wood consumption as the third major contributor to $CO_2$ emission and that consumption of wood is much higher than LPG consumption. In Jaffna town one household unit emit 10.81 Kg of carbon per day and there are a total of 25,238 dwelling units in the town area that emit 273,077 Kg of carbon per day (Raveendran & Srikaran, 2019).

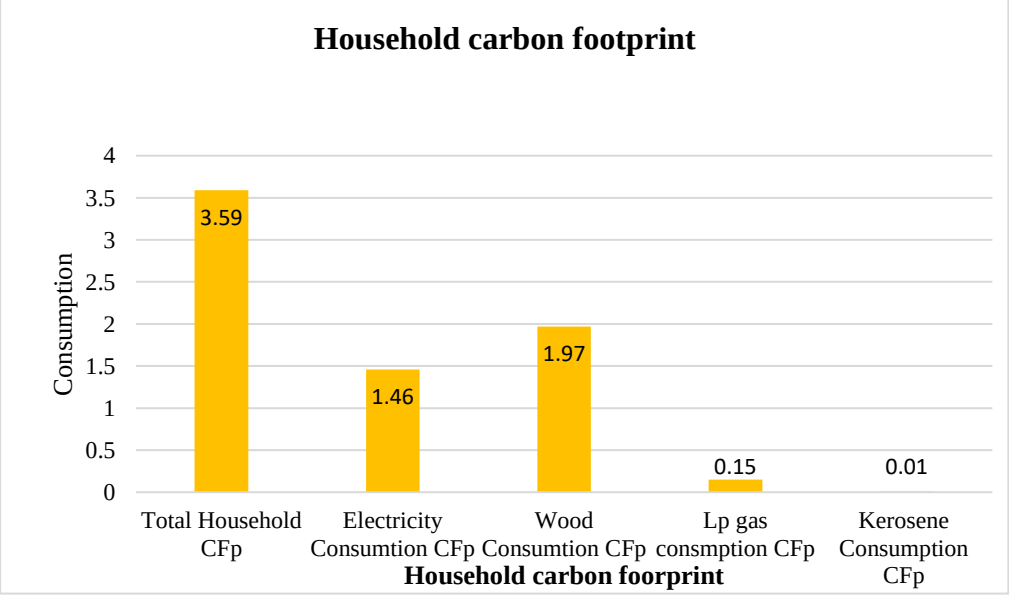


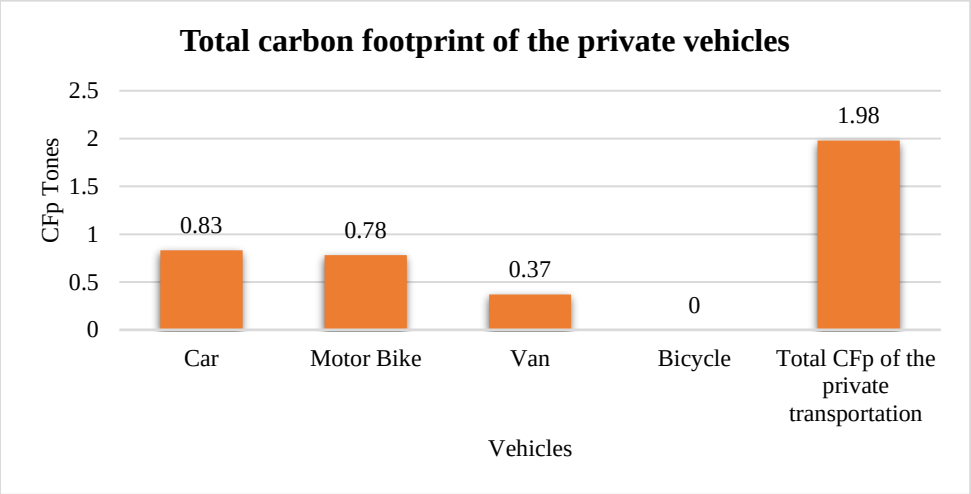

Figure 01: Household carbon footprint

## 4.6. The carbon footprint of transportation in the study area

### 4.6.1. Private transportation

According to Figure 02, the total CFp of private transportation is 1.98 tons/month. CFp of the car is 0.83 tons/month. There are 0.78 tons/month of CFp produced by the motor motorcycle uses. CFp of the van is 0.37 tons/month. CFp is not produced by cyclists. According to that, the highest amount of CFp is produced by the car users.

**Figure**




02: the carbon footprint of the private vehicles

### 4.6.2. Public transportation

The total individual CFp of public transportation is 2.53 tons/month in the study area. The individual CFp of the bus is 2 tons/month as well as individual CFp of the taxi is 0.53 tons/month. According to that, the individual CFp of the bus users is higher than the taxi users in this study sample area. According to the study done by Sugathapala & Jayathilaka, (2012), the highest amount of carbon dioxide is emitted from the vehicles in Pettah GN division in Colombo and it contributes about 95%. Comparing with the other sources the $CO_2$ emitted from households (Firewood, Kerosene, and LPG) is negligible.

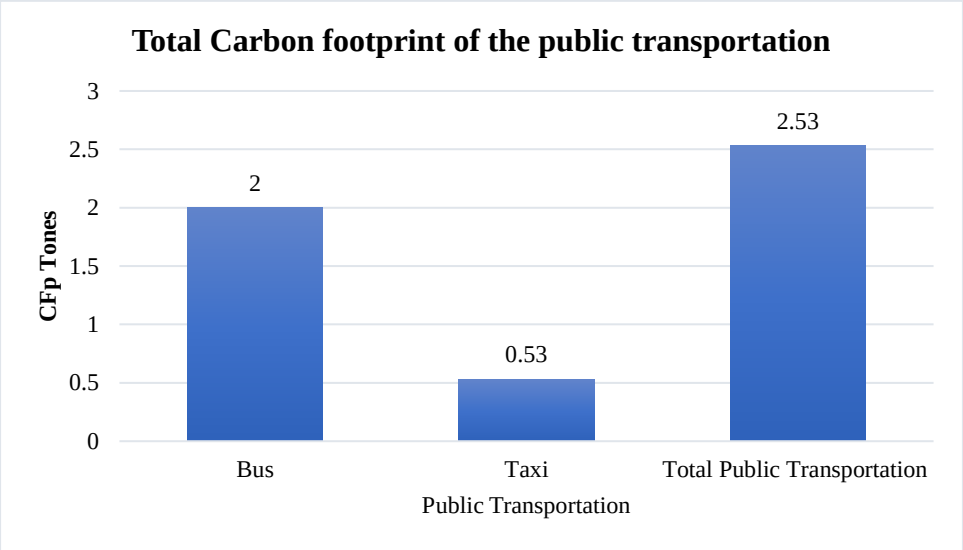



Figure 03: The carbon footprint of the public transportation

## 4.7. The carbon footprint of the secondary consumption in the study area

The secondary consumption CFp is determined by the respondent's monthly consumption and expenditure on food and beverages, pharmaceuticals, clothing, textiles, shoes, paper-based products, computer and IT equipment, television, radio, phone, motor vehicles, furniture and other manufactured goods, hotels and restaurants, telephone call costs, banking and finance, insurance, education, and recreation cultural and sporting activities.

According to the below figure 04, the total secondary consumption CFp of the respondents in the study area is 5.33 tons/month. The individual CFp of the food and drink products is 2.53 tons/month. The individual CFp of the pharmaceutical is 1.36 tons/month. There are 0.25 tons/month of CFp is produces from the use of clothes, textiles, and shoes by the respondents. Computer and IT equipment have very low CFp in this area. CFp of the computer and IT equipment is 0.01 tons/month. CFp of the use of television, radio and mobile phone is 0.03 tons/month and also, the CFp of the telephone call costs is 0.03 tons/month. The CFp of the use of banking and finance is 0.87 tons/month.
According to that, CFp is highly produced by the consumption of foods and drinks products, pharmaceuticals, use of clothes, textiles and shoes, computer, and IT equipment, use of television, radio and phone, banking and finance, furniture and other manufacturing goods, telephone call costs. And also, CFp is not produced using paper-based products, motor vehicles (not including fuel costs), hotels and restaurants, insurance, education and recreation activities in the study of this area.

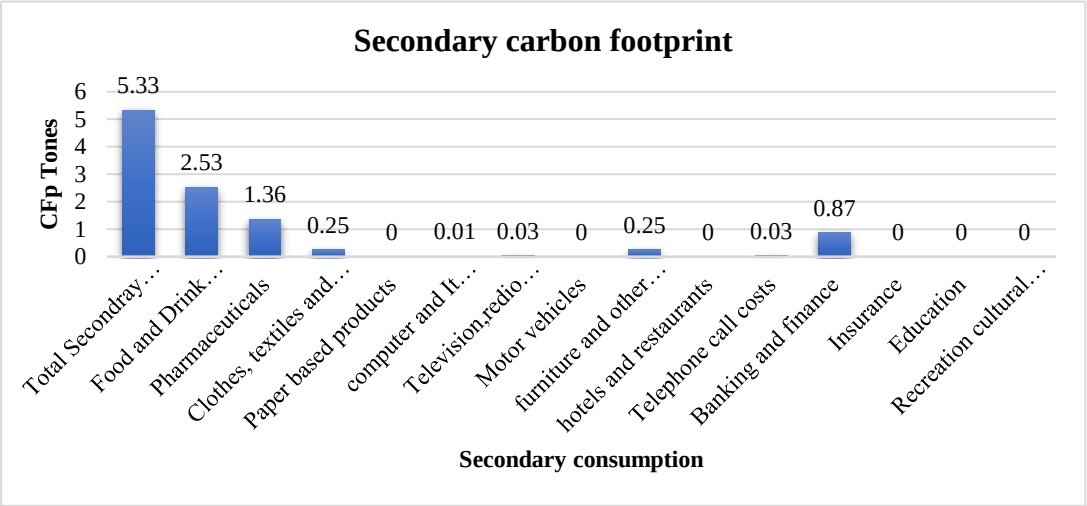



**Figure 04: Secondary carbon footprint**

## 4.8 Multiple regression analysis

The present study utilized Multiple Regression Analysis using Statistical Packages for Social Sciences (SPSS) to identify the major factors affecting the individual CFp in the study sample area. The multiple regression analysis results are shown in Table 06.

**Table 06: Estimates of the multiple regression analysis**

| **Independent Variables** | **B** | **Std. Error** | **Beta** | **t** | **Sig.** |
|---|---|---|---|---|---|
| Gender | -.020 | .008 | -.178 | -2.616 | .010 |
| Age | .001 | .000 | .169 | 2.437 | .016 |
| Education | -.006 | .005 | -.085 | -1.229 | .222 |
| Occupation | -.004 | .003 | -.077 | -1.259 | .211 |
| Family members | -.002 | .004 | -.026 | -.423 | .673 |
| Income | 1.651 | .000 | .573 | 8.128 | .000 |
| Awareness of CFp | .007 | .011 | .060 | .658 | .512 |
| Awareness of Climate change | -.008 | .005 | -.103 | -1.660 | .100 |
| Awareness of adverse effect of CFp | -.021 | .013 | -.143 | -1.628 | .106 |
| Preference of reduce CFp | -.001 | .005 | -.017 | -.259 | .796 |
| a. Dependent Variable: Total Individual CFp | | | | | |

The dependent variable is an individual carbon footprint, and the independent variables are gender, age, education, occupation, family members, income, awareness of the CFp, awareness of climate change, awareness of the adverse effect of CFp and the respondent's preference to reduce the CFp in the study sample area. According to the results of the multiple regression analysis, the family income of the respondents significantly affects the individual CFp in this study sample area ($p < 0.000$). This is further confirmed by the study done by Madushani & Gunawardena (2018), revealing that CFp is significantly influenced by income in Gangodawila South GN Division in Colombo District and Galbada GN Division in Galle District. The outcome of the study also found that the age of the respondents is a significant and positive factor that affects the individual CFp in the study sample area ($p < 0.016$). And also, the gender of the respondents significantly affects the individual CFp in the study sample area ($p < 0.010$). Similar research done by Jaiswal & Shah (2013) identified that CFp of rural households of Vadodara District, Gujarat, India is significantly dependent on personal income, family size, employment status, and type of family.

Based on the multiple regression estimates, it was found that education level, family members, occupations, respondent's awareness of CFp, awareness of climate change, awareness of the adverse effect of the CFp and respondent's preferences to reducing CFp are not significant factors influencing the CFp in the study sample area.

## 4.9. Correlation analysis

Table 07 shows the Pearson correlation output result. Correlation is statistically significant its sig value (2-tailed) < 0.01. Respondent's gender and CFp have a strong negative relationship (r = -0.507). Gender is significantly influenced to the individual CFp in this study sample area (sig < 0.000). Respondent's age and CFp have a weak positive relationship (r = 0.375). Age is also significantly influenced to the CFp in this study sample area (sig < 0.000). There is a strong negative correlation between education level and individual CFp in this study sample area (r =. - 0.261). Education level is significantly influenced to the individual CFp (sig < 0.004).

There is a weak positive relationship between the respondent's occupation and individual CFp (r = 0.015). Occupation is not significantly influencing to the individual CFp in this study sample area (sig < 0.872). There is a strong negative correlation between family members and individual CFp (r = -0.064). Family members are not significantly influenced to the individual CFp in this study sample area (sig < 0. 485). There is a strong positive correlation between family income and individual CFp (r = 0.728). Family income significantly influences to the individual CFp in this study sample area (sig < 0.000). Similarly, there is a significant correlation between household income and CFp in Iskandar Malaysia region. It means when the household's income increases, their total CFp also increases (Majid, et al., 2014). There is a strong negative relationship between respondents' awareness of the CFp and individual CFp in this study sample area (r = -0.088). Respondent's awareness of CFp is not a significant factor influencing the individual CFp (sig < 0.339). As well as there is a strong negative correlation between individual CFp and awareness of climate change, awareness of the adverse effect of the CFp and the respondent's preferences to reducing the CFp in this study sample area. They are also not significantly influenced to the individual CFp in this study sample area.

**Table 07: Correlation analysis estimates**

| **Variables** | | **Total Individual CFp** |
|---|---|---|
| Total Individual CFp | Pearson Correlation | 1 |
| | Sig. (2-tailed) | |
| | N | 120 |
| Gender | Pearson Correlation | -.507** |
| | Sig. (2-tailed) | .000 |
| | N | 120 |
| Age | Pearson Correlation | .375** |
| | Sig. (2-tailed) | .000 |
| | N | 120 |
| Education | Pearson Correlation | -.261** |
| | Sig. (2-tailed) | .004 |
| | N | 120 |
| Occupation | Pearson Correlation | .015 |
| | Sig. (2-tailed) | .872 |
| | N | 120 |
| Family members | Pearson Correlation | -.064 |
| | Sig. (2-tailed) | .485 |
| | N | 120 |
| Income | Pearson Correlation | .728** |
| | Sig. (2-tailed) | .000 |

| | | |
|---|---|---|
| | N | 120 |
| Awareness of CFp | Pearson Correlation | -.088 |
| | Sig. (2-tailed) | .339 |
| | N | 120 |
| Awareness of Climate Change | Pearson Correlation | -.121 |
| | Sig. (2-tailed) | .188 |
| | N | 120 |
| Awareness of adverse effect of CFp | Pearson Correlation | -.146 |
| | Sig. (2-tailed) | .111 |
| | N | 120 |
| Preference to reduce CFp | Pearson Correlation | -.150 |
| | Sig. (2-tailed) | .101 |
| | N | 120 |
| Correlation is significant at the 0.01 level (2- tailed)<br>Correlation is significant at the 0.05 level (2 – tailed) | | |

## Conclusion

This study revealed that the total individual CFp of the selected sample in the Galewela Divisional Secretariat is 13.43 tons/month, with the per capita CFp been 0.11 tons/month. According to https://www.carbonfootprint.com/calculator.aspx online CFp calculator the per capita CFp for Sri Lankan people is 1.00 tons. Therefore, the per capita CFp of the study sample area is less than the average level of the country. The total individual CFp of the male respondents is 8.62 tons/month and female respondents produced 4.81 tons/month in this study sample area. Therefore, individual CFp of male respondents are higher than the female respondents. Respondents produce 3.59 tons/month of CFp from household energy consumption. Household wood consumption produces the highest amount of CFp in this study sample area. It has recorded as 1.97 tons/month. The CFp of public transportation is higher than the private transportation in this study sample area. There is 2.53tons/month of CFp is produced from the use of public transportation while private transportation produces 1.98 tons/month of CFp. The secondary consumption of the respondents produces 5.33 tons/month of CFp. Respondents' age, gender, and monthly family income significantly influenced the individual CFp in this study sample area. Accordingly, the present study recommended that promoting public transportation, introducing fuel-efficient vehicles, and raising public awareness about the health benefits of walking and cycling are the best ways to reduce the individual CFp in the study area. As well as the community should be aware of CFp and the adverse impacts of increased individual CFp. People should be made aware of the energy-saving measures by adopting more energy-efficient household appliances, using natural light instead of lights in the daytime, recycling and donating old electrical equipment, and reducing heat in the kitchen. And, people can adopt eco-friendly lifestyles, and they can promote responsible consumption patterns by eating more foods that are grown or made locally and less red meat, reducing waste, purchase low carbon goods. People should be focused on the use of renewable energy, particularly solar and biogas energy for household electricity. Promote home gardening and tree planting. Finally, this study recommends people should be educated to calculate their CFp by using online carbon footprint calculators.

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# The Effects of Alcohol Addiction of father on Subjective Well-being of his family members: Views of his Wife in Rural Families in Sri Lanka

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## ABSTRACT

The increasing alcohol consumption among individuals is undoubtedly a pressing public health concern with far-reaching consequences that extend beyond the individual alcohol user. One critical dimension of this issue is its impact on the overall wellbeing of family members, particularly children who are often exposed to significant stressors and are at an elevated risk of developing psychological issues. This study seeks to shed light on the profound repercussions of a father's alcoholism on the subjective wellbeing of family members. To gain a comprehensive understanding of this complex issue, a qualitative research approach was employed. Qualitative data collection methods are well-suited for exploring and describing phenomena in-depth, which is essential when examining the multifaceted impact of alcoholism on family dynamics, as it goes beyond the quantifiable aspects that quantitative research typically focuses on. Therefore, the research design of this study is explorative and descriptive in nature, aiming to uncover the intricate web of effects resulting from a father's alcohol addiction on the subjective wellbeing of his family. A purposive sampling technique was employed, selecting 15 wives (respondents) of alcohol-addicted husbands to participate in in-depth interviews. The choice of a purposive sample ensures that the study captures the experiences and perspectives of those most directly affected by the issue, providing valuable insights into their lived experiences. Prior to the main data collection, a pilot test of the interview guide was conducted with two respondents to refine the questions and ensure their appropriateness. The findings of this study are illuminating and underscore the gravity of the situation. It is evident that a father's alcohol addiction exerts a significant and adverse impact on the subjective wellbeing of his family. The family structure is profoundly affected, leading to a range of difficulties, including frequent disagreements, dissatisfaction among family members, instances of domestic violence, and even the breakdown of intimate relationships. These findings emphasize the pervasive nature of alcoholism's influence on the family unit. Moreover, this study identifies negative relationships between the husband and wife, as well as between the children and their father. This negative atmosphere is compounded by feelings of neglect experienced by wives and children due to the father's preoccupation with alcohol and its associated consequences. In light of these findings, it becomes evident that addressing the prevalence of alcohol addiction is of utmost importance, especially in rural areas like the one studied in southern Sri Lanka. To mitigate the adverse effects of alcoholism on family wellbeing, there is a critical need for long-term prevention intervention programs. Such initiatives should encompass a multifaceted approach, including comprehensive awareness programs to educate individuals and families about the risks of alcohol addiction, the intervention of trained social workers to provide support and guidance to affected families, and the involvement of healthcare professionals to address both the physical and psychological aspects of addiction. This study highlights the profound and far-reaching impact of a father's alcoholism on the subjective wellbeing of his family. It underscores the urgency of implementing targeted interventions to address alcohol addiction, improve family dynamics, and ultimately enhance the overall wellbeing of individuals and families in rural areas and beyond.

**Keywords**: Alcohol Addiction, Well-being, Mental Health, Rural Families, Sri Lanka

## Introduction

Use of alcohol is legal and easily available. Ethanol is known as alcoholic beverage. It is a toxic compound to the body. At high doses of ethanol can cause death in a person, whereas at low doses of ethanol can damages the functioning of the mind of person. Repeated alcohol consumption leads to addiction, which is also known as alcoholism. Historical research has shown that controlled alcohol use is a permissible concept and its abuse has been rejected. The rapid spread of alcohol use around the world has created problems for both the individual and his family, as well as a number of health problems for individuals (Paduwawala, 2012). Consequences of alcohol use can have a profound effect on a person's life, in different ways physically, socially, and economically. The overall and long-term effects of alcohol use are felt by all sectors of the society and are specific to the health sector. The impact on non-healthcare, legal, judicial, defence, welfare and transportation sectors are also significant. The World Health Organization (WHO) reported in 2016, stated that the number of deaths worldwide due to alcohol abuse was around 2.5 million a year. They also mentioned that this is more than the number of deaths worldwide from infections such as tuberculosis, epilepsy (WHO 2016). The British imperialists who completely colonized Ceylon have been promoting alcohol production and trade throughout the country for the purpose of making money. Their aim was to break the mentality of the natives who challenged them. Alcohol consumption in the country has been steadily increasing since then. With the introduction of the open economy in 1977, there was a rapid growth in alcohol consumption. Although the government receives a large amount of revenue from the liquor business under the Excise Act, the government spends a large amount of money to treat patients who use it.

## Alcoholic Consumption and Subjective Well-being

The relationship between alcohol consumption and subjective well-being is a complex and nuanced topic, as research findings vary depending on factors such as the amount and frequency of alcohol use, individual differences, and cultural context. Moderate alcohol consumption has been associated with higher subjective well-being. A study by Lang et al. (2007) found that moderate drinkers reported better life satisfaction compared to heavy drinkers and abstainers. The effects of alcohol on well-being can vary based on individual differences. For example, people with certain personality traits, such as extraversion, may experience greater well-being benefits from social drinking (Terracciano et al., 2008). Binge drinking or heavy alcohol consumption is associated with decreased subjective well-being. A longitudinal study by Knott et al. (2015) found that heavy drinkers experienced a decline in life satisfaction over time. While alcohol may temporarily boost mood and well-being in the short term, chronic heavy drinking is linked to lower well-being and increased risk of mental health problems. Research by Boden and Fergusson (2011) found that heavy drinkers had higher rates of depression and anxiety. The social context plays a significant role in how alcohol affects well-being. Drinking in a supportive and social environment can enhance feelings of happiness and social connection (Neighbors et al., 2011). Alcohol misuse is strongly associated with mental health issues, which can negatively impact subjective well-being. A study by Keyes et al. (2011) found that individuals with alcohol use disorders had significantly lower well-being scores. Excessive alcohol consumption can lead to a decline in overall quality of life, affecting relationships, employment, and life satisfaction (McKnight-Eily et al., 2019).

Alcohol is widely consumed to celebrate special occasions in life or to develop social relationships thinking that alcohol helps to develop positive relationships with others. In some cases, people consumed alcohol as a risk reduction technique thinking that it helps for relaxation and reduce stress (Cappell & Greeley, 1987; Chandrasekara, 2019). When it comes to our connection with alcohol, age, family history, how often we drink, and how much we drink are all essential factors to consider. Alcoholism affects people of all genders, races, and ethnicities. Drinking excessively to cope with or avoid other issues and pressures, on the other hand, might result in health and emotional problems. Memory loss, and aftermaths are all short-term effects of alcohol usage. Stomach troubles, heart problems, brain damage, and memory loss are all long-term consequences of alcohol addiction. Heavy drinkers also have a higher risk of dying in car accidents, homicides, and suicide. The use and misuse

of alcohol has also been related to a number of health problems such as joblessness, violence, and legal issues (Nutt, King, & Phillips, 2010).

Both genetic and environmental factors increase the likelihood of developing alcoholism. Alcoholism manages to runs in families, the rate of the increasing alcohol addiction is three to four times greater when there are close relatives of alcoholics, and the risk rises with the genetic relationship's closeness (Wolff, Rospenda, Richman, & Liu, 2013). High alcohol usage and abuse are also linked to impulsivity as a personality trait. Individuals who drink to avoid thinking about things, to frozen themselves to their difficulties, to cope with worry, anxieties, or mood troubles, or to enhance their creativity are more likely to abuse alcohol (Chandrasekara, 2019). The relationship between alcohol consumption and subjective well-being is complex and influenced by various factors. While moderate and social drinking may have some positive effects on well-being for some individuals, excessive or problematic alcohol use is more likely to have detrimental consequences on both short-term and long-term subjective well-being. It's essential to consider individual differences and context when assessing the impact of alcohol on well-being, and for those with concerns about their alcohol consumption, seeking professional guidance and support is advisable.

## Alcohol Consumption in Sri Lanka

Traditionally in Sri Lankan society, men and women, regardless of gender, have been habituated to the use of betel, arecanut, tea, coffee and tobacco, while the men has been accustomed to the use of alcohol and to a lesser extent the use of cannabis and opium . It is not possible to say exactly when man began to use alcohol. It seems to have begun with the period when man began to seek pleasure and comfort (Paduwawala, 2012; Cappell & Greeley, 1987). Two world-renowned psychiatrists, say that man's search for drugs for the purpose of gaining happiness is as old as the awakening of consciousness and the subsequent understanding of his mood (Martin & Douglas, 2000). The water, sugar, and yeast needed to make alcohol have been around for about 200 million years (Charles , Patrick, & Durham, 1952). Thus, 5,000 years ago, Mesopotamian cuneiform tablets mentioned alcohol and taverns (Charles , Patrick, & Durham, 1952). It has been revealed that all ancient civilizations and cultures, including Egypt, knew about alcohol in particular. Alcohol consumption was reported to be widespread in Africa as well as among North and South American Indians (Charles , Patrick, & Durham, 1952). The Aryans (who came to Sri Lanka first from India) cannot be excluded from that catalog either. The control of the Nalagiri (a tusker) and the Buddha's teachings on the use of alcohol confirm the existence of alcohol. Alcohol has been an important part of festive occasions since ancient times (Rasnak, 1992).

Body stimulants such as coffee, tea, cocoa, hashish and opium have been used around the world. They are still highly valued stimulants in some social strata. Alcohol has always been a traditional form of joy throughout the western-world and in our society (Rasnak, 2011). Most of those joy generators are relatively harmless. Excessive coffee consumption is harmful to the heart. But tea and cocoa are not harmful. It can be said that consuming a small amount of alcohol does not cause serious personal or social problems. However, Rasnak (2011), added that some people have failed to know and use alcohol in moderation and instead become addicted to it, which can lead to serious physical and mental illness. Although alcohol is a stimulant that brings joy to some people, the researcher is trying to find out how it has adversely affected the lives of some people. According to Kessel & Walton (1965), the causes and social consequences of alcohol abuse and the treatment of those affected should be addressed through the field of medical psychiatry (Rasnak, 2011).

There are several symptoms that are closely related to alcoholism, unable to control his alcohol use, drinking for days at a time when he starts drinking and alcohol has become a major need of his life, he or she constantly thinks about it, plans to drink, and his or her addictions often lead to domestic and social problems. Knowing that he did not have the strength to avoid it, the need to drink more to get stimulated by alcohol and the various stop symptoms when the use was reduced or stopped is evidence that it went as far as addiction (Rajapaksa, 2016). Alcoholism can cause various physical weaknesses

and mental illnesses (WHO, 2016). Therefore, the World Health Organization emphasizes the need to save humankind from the devastating effects of alcoholism.
The World Health Organization defines alcoholism as dependent on alcohol, and his life depends on it, a) it is difficult for him to live apart from alcohol, b) his health has deteriorated due to alcohol, c) he is also mentally ill, d) he has ruined his economy, e) he has his family life and social relationships broken down.

## Psychological and Sociological Aspects of Alcohol Addiction

Alcohol addiction is a complex issue influenced by various psychological and sociological factors. Genetics plays a significant role in alcohol addiction. Individuals with a family history of alcoholism are at a higher risk of developing addiction themselves (Prescott & Kendler, 1999). Individuals with certain psychological traits, such as impulsivity and sensation-seeking, may be more susceptible to alcohol addiction (Magid et al., 2007). Stress is a common trigger for alcohol use. Individuals may turn to alcohol as a coping mechanism to alleviate stress and anxiety (Sinha, 2008). Many individuals with alcohol addiction also have co-occurring mental health disorders, such as depression or anxiety. These disorders can contribute to the development and maintenance of alcohol addiction (Grant et al., 2015).

Social and peer pressure can significantly impact alcohol consumption and addiction. Individuals may start drinking or continue drinking due to peer influence or societal norms (Borsari & Carey, 2001). Cultural factors play a crucial role in shaping alcohol consumption patterns. Cultural norms and expectations regarding alcohol use can either promote or discourage addiction (Room, 2005).
Socioeconomic status can impact access to alcohol and the consequences of addiction. Individuals in lower socioeconomic groups may face more significant challenges in seeking treatment and recovery (Mulia et al., 2008). On the positive side, peer support and involvement in social networks that promote abstinence or moderation can be protective against alcohol addiction (Bond et al., 2003). The availability of alcohol in a community, such as the density of liquor stores, can influence alcohol consumption rates and the risk of addiction (Scribner et al., 2000).

Alcohol addiction, like other human activities, has been shown to depend on biological predisposition and environmental factors (ADIC,2005). Alcoholism was first clearly defined as a disease by Dr. Thomas Trotter in Scotland in the early nineteenth century (Rasnak, 1997). The American Medical Association describes alcoholism as a disease (Rasnak, 1997). The school argues that it is scientifically unacceptable that alcoholism is a disease. They claim that a disease has a clear set of symptoms and that they are easily identifiable. They also point out that the alcohol use is more difficult to describe as a disease because it is related to entertainment (Rasnak, 1997). Despite these arguments, pathologists claim that the alcohol use is transmissible, and that diseases such as syphilis and AIDS are transmissible, and that it is unnecessary to ask how or why a person became infected.

Lack of employment opportunities can lead people to use alcohol or become addicted to alcohol. Researchers note that youth poverty and alcohol abuse are widespread among the unemployed ( Rajapakse, 2011). There is a tendency among youth to use alcohol as it is considered to be something that should be socialized. It is needed to understand that alcohol does not have the necessary conditions for socialization, that it affects the active parts of the brain, reduces a person's shyness and fear, and that drinking can do great harm to them to socialize. Also, alcohol consumption has been inculcated in the minds of young people as a social evil through advertisements and publicity (Ratnapala, 1986). Alcohol addiction is influenced by a complex interplay of psychological and sociological factors. Understanding these factors is crucial for the prevention and treatment of alcohol addiction and underscores the need for a holistic approach that addresses both individual vulnerabilities and the broader social and cultural context.

## Impact of alcoholism on the family wellbeing

According to the family systems theory, each family member has frequented and anticipated effects on the other family members. The theory explains why family members act a certain way in a circumstance. It is certain that the father's alcoholism will have an impact on the other family members and overall wellbeing of the family (Cappell & Greeley, 1987). Fisher, Jenkins, Harrison, & Jesch (1992) note that family members often must cope with the confusing unpredictability and frequent unpleasantness of life with the father who abuses alcohol. The more serious an alcohol problem, the less able the inebriated father is to perform competently, or to fulfil all the various roles and responsibilities expected of him as a partner and parent. It is clear that the excessive drinking of a father has serious consequences for the different subsystems in the family. Living with a father who drinks alcohol frequently means dealing with the puzzling volatility and frequent unhappiness. The more severe alcoholism of father, the less capable he is of carrying out all the different duties and obligations expected of him as a partner and parent. It is obvious that alcoholism of father has negative effects on the diverse family subsystems, such as on the couple, parent-child, and sibling.

The impact of alcoholism on family well-being can be profound, affecting various aspects of family life. Alcoholism often leads to increased family conflict, arguments, and tension within the household (Leonard & Roberts, 1998). Family members living with an alcoholic often experience emotional distress, including anxiety, depression, and fear due to the unpredictable behaviour of the addicted individual (Kaufman & Pattison, 1981). Alcoholism can lead to financial difficulties for families, as money may be spent on alcohol rather than essential needs (Barnett & Weybright, 2001). Children in families with an alcoholic parent often experience disrupted parent-child relationships, leading to issues like neglect and emotional trauma (Sher, Walitzer, Wood, & Brent, 1991). Family members may also experience physical health problems due to the stress and strain of living with an alcoholic (Brady, Sonne, & Randall, 1999). Alcoholism can lead to social isolation as family members may withdraw from social activities to avoid embarrassment or conflict (Hurcom, Copello, & Orford, 2000). Alcoholism can interfere with effective parenting, potentially leading to neglect of children's needs and development (Barnett & Powers, 1982). Children of alcoholics are at higher risk of developing their own substance abuse problems in adulthood (Merikangas et al., 1998). Alcoholism can contribute to intimate partner violence within the family, negatively impacting the well-being of both partners. Access to appropriate treatment and support services for the alcoholic family member and affected family members is crucial for improving family well-being (O'Farrell, Fals-Stewart, & Murphy, 2003).

In addition to getting them with adequate nutrition, basic clothing, sports and recreational facilities, they also lose their schooling needs. When discussing alcohol consumption, people around the world balance the joys and sorrows associated with it. “We drink alcohol because it makes us feel good. We study it because we think it is bad for us” (Martin & Douglas, 2000). When a small amount of alcohol is consumed, it is beneficial because it leads to interactions between human beings. But when overused, it can lead to physical, mental, and social problems (Rajapaksa, 2011).

## Objectives

The main objective of this research is to explore the effects of alcohol addiction of father on the Subjective Well-being of his family members in rural villages.
The specify objectives are to explore;

a) the Effects of Alcohol addiction of father on Life Satisfaction of family;
b) the Effects of Alcohol misuse of father on happiness of family members;

## Significance of the Study

In middle-income nations, alcoholism is the third-highest global risk factor for disease and disability (World Health Organisation, 2011). Alcoholism is characterized by behavioral, cognitive, and physiological symptoms, such as "a strong desire to take alcohol, difficulties in controlling use it, persistence in use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and occasionally a physical withdrawal state" (World Health Organization, 2006). Before any negative health impacts on the drinker's health may be noticed, the repercussions of hazardous drinking frequently have an impact on friends, family, and coworkers. The consequences can be just as harmful to the family as it is to the drinker, with children being the most negatively impacted (Klingemann & Gmel, 2001).

## Methods and Measurements

Socio-demographic data we collected from respondents to explore the impact of socio-demographic variables on alcoholism and subjective wellbeing such as age, gender, level of education. The objective of this research is to explore and describe the effects of alcohol addiction of father on subjective wellbeing of his family members; views of his wife in rural areas in Sri Lanka. Alcohol addiction was measured asking how often does her husband consume alcohol. Subjective well-being **(**SWB) was measured using two concepts, happiness and life-satisfaction. Happiness is measured based on the level of happiness. A qualitative data collection method was used to collect data as it explore and describe well compared to quantitative data collection (Maunder, et al., 2003). Hence, the research design was explorative and descriptive in nature on the impact of a father's alcoholism on the subjective wellbeing of family members (Albert, 2015). A purposive sample of 15 wives of alcohol addicted husbands were selected to conduct in-depth interviews in a village in southern province in Sri Lanka. A semi-structured interview guide was used to collect data. The interview guide was tested through a pilot testing with two respondents to determine whether the interview guidelines were applicable (Yu, Creswell, & Plano Clark, 2007). Interviews were recoded with the permission of respondents and later it was transcribed. Later, data were categorised into themes and sub-themes.

## Findings of the Study

This section will analyse the findings of the study. Several themes were identified from the data gathered from respondents as discuss below;

## Effects of alcohol addiction on subjective wellbeing of family

Usually, alcohol addiction leads to significant changes in the family system. When the the father addicted alcohol, often he is unable to fulfil family commitments. Hence, other members will have to struggle to fulfil their day today needs in the family. The wife will have to be the main breadwinner and fulfil all the need of the family.

## Changes of Children's duties and Effect of children education

Children in these families often struggle to cope with family duties such as taking care of younger siblings. Elder siblings will have to look after their younger siblings. This may affect both elder and younger siblings' education.

*"I had to stop schooling and earn money for our family"*

*I stop schooling and asked my younger brother to go to school".*

Therefore, the overall subjective wellbeing of the family whose father is addicted to alcohol is at high risk (Fisher, Jenkins, Harrison, & Jesch, 1992).

## Changes in family functioning

A family executes several important functions for the society. Socialization of children, providing emotional and practical support for members, regulating sexual activity and sexual reproduction, providing social identity are main functions of a family. When a family can not fulfil their need and solve their problems and basic security for its members, the family system suffers its wellbeing. Further, it will lead for domestic violence (Wolff, Rospenda, Richman, & Liu, 2013)
Respondents indicated that when the father is no longer forming his duties as a father, the family system get dysfunctional.

*Iif he cannot be the breadwinner of our family why we treat his as the head of our family". "We do not wait till he bring food, because we know that he is not doing it"*

*"What ever he earn, he spend on his drinking"*

Above mentioned stories clearly indicate that the when harmful drinking is existing, the family members have stressful changes in their work. It demonstrate how alcohol abuse significantly affects the wellbeing of family members. This supports research (Brandell, 2011; Fisher & Harrison, 2013; Kafuko & Bukuluki, 2008)

## Reduction of income

Alcohol addiction frequently lead for poverty where the drinking habit reduces revenue potential via absenteeism, lack of desire, and job loss. On the other hand, they spend all the money on alcohol without considering other responsibilities of family. Hence, a common result of alcohol addiction is lower income or even unemployment, which has an impact on the other family members (Brandell, 2011).
The narratives given below exhibit how almost all respondents state that the financial problems are unescapable in their homes when the father is alcohol addicted.

*"His main duty is to earn money for his drink. He does not bring food to the family".*

*"He doesn't know that he is having children or a wife".*

*"He thinks that he is single, so earns only for him".*

*"Before he addicted to drink like this, he did everything to the family. Now very really, he brings something to eat, sometimes he brings only one kilo of rice".*

These findings confirm the research findings of Adalbjarnardottir & Rafnsson, (2002).

## Neglection of Children and wife

According to literature (Xie, Palmer, Li, Lin, & Johnson, 2013), children and wife who have a alcohol addicted father are more likely to have negative childhood experiences and negative marital experience which leads for long-term mental health difficulties.

*"My father does not love me. He does not love children too".*

*"He does not speak or play with children. He never come to go out with us. We have never gone for wedding together".*

## Domestic violence, divorce/separation and alcohol addiction

Finding of this research indicate the domestic violence in families of father is addicted to alcohol. According to literature, alcohol addiction normally leads to domestic violence in families. These research findings prove that there is a direct relationship between domestic violence and alcohol addiction in rural arias (Fisher & Harrison, 2013). The violence directly related to the wellbeing of the family.

*"He come after drinking and beat me most of the time. I heat him now".*

*"I do not like to talk to him after he comes drinking".*

From these narratives, it may be confirmed that alcohol addiction often results in domestic or marital conflicts.

Alcohol addiction may lead for divorce or separation of families. First, it breaks up the trust, respect and intimate relationship between husband and wife. Later it develops up to divorce or separation (Guez & Allen, 2000).

> *"I am thinking to go to my parent's home with my daughter. I cannot live with him. He thinks only about his drink. He beat me and my daughter"*
>
> *"Why I want to cope with this situation. After one month of marriage, I experience his violence. He is like an animal. He thinks only about him. I want to end up this life".*

It is obvious that when there is no intimate relationship in a marriage life, it automatically leads for separation or divorce. According to above stories, first break up the intimate relationship due to domestic violence caused by alcohol addiction and then go for separation or divorce.

## Discussion

The findings of this study reveal that the alcohol addiction of father has a significant impact on the subjective wellbeing of his family. Family structure has faced a significant difficulties that often result in disagreements, unsatisfaction, domestic violence, or intimate relationship breakdowns. It was discovered that there is negative relationships between husband and wife as well as children and father. Wife and children are experiencing neglection by husband or father.

It is important to recognize how alcohol addiction affects the wife, children and entire. In order to reduce the prevalence of alcohol addiction, there is a critical need for long-term prevention intervention programs in rural arias. It is necessary to implement different activities, including awareness programs, intervention of social worker and healthcare professionals.

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# CONDUCTING DAYSCHOOLS VIA ZOOM DURING COVID-19 PANDEMIC LOCKDOWN: STUDENTS' & FACILITATOR'S REFLECTIONS

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## ABSTRACT

Covid-19 affected the whole world including Sri Lanka. Virtual space became an alternative platform for transactions in many sectors including education. Education institutes from schools to universities adopted online teaching mainly via zoom technology (ZT). During lockdown period, the Open University of Sri Lanka initiated conducting Day Schools (DS) via ZT and it was a novel experience for both students and facilitators. In this paper, students' and facilitator's experience of teaching and learning in DS, conducted via ZT are presented. The objectives were to identify the positive and negative encounters of students when learning via ZT, the gaps between onsite DS and DS via ZT and issues in the delivery of DS via ZT and the areas which need further improvement. We conducted a questionnaire survey online among level four students of the BA Degree in Social Sciences Programme who undertook a compulsory academic module(N=364) and a Focus Group Discussion (FGD) (N=10) via ZT. Questionnaire based data were analyzed quantitatively via SPSS, and FGD based qualitative data through thematic analysis technique. Of the total number of students registered for this module (N=364), only 35.7% (N=130) students responded. Unlike in conventional DS (CDS), both employed and unemployed students attended zoom DS (ZDS). All employed students (64.6%, N=84) perceived ZDS as convenient, more interactive, and therefore effective and useful. Majority of the students from North-East who otherwise depend on visiting academics in CDS and therefore mostly quit CDS due to travelling difficulties had attended ZDS. Majority of students 70.8% (N=98) recommended ZT for future learning. Network failures, non-availability of devices, non-familiarity with ZT and lack of familiarity with the culture of "working from home" were common challenges reported. The facilitator endorses ZDS as an effective communication platform and the ability to interact with students from all regions as a positive experience. By sufficiently providing necessary technical assistance to students, ZT can be further used as a viable option to conduct DS effectively.

**Keywords:** Online learning, Day Schools, Zoom Technology, The Open University

## Introduction

The contagious COVID-19 pandemic which immerged in 2019 has affected the whole world including Sri Lanka. The government of Sri Lanka announced a lockdown in the country in mid-March 2020and ordered a temporary closure of education institutions. However, the tertiary education system in Sri Lanka was resilient against the unforeseen situation and made a rapid transition to online education via various digital platforms such as Zoom Technology (ZT). The interrupted teaching and learning activities at tertiary level were facilitated mainly via ZT. Although online and distance learning are not new to the Open University of Sri Lanka (OUSL), the premier open and distance learning (ODL) service provider in the country, during the lockdown period due to COVID-19, the OUSL too encountered challenges in continuing academic activities and providing learner support (LS) for students. Of them, conducting Day Schools (DS) was one of the key challenges. DS are face-to-face interactive sessions, arranged to facilitate students to meet their respective module leader and the module teachers who serve as visiting academics in other regional and study centers. DS also help clarify any content related and learning difficulties that the students come across in their study materials. Attending DS is not compulsory, but DS are helpful to perform academically well in the course. Usually, five DS sessions are arranged for a five-credit course and three DS sessions are arranged for a three-credit course. Hence, alternatively, the OUSL initiated conducting DS sessions via ZT and it became a novel experience for both students and facilitators. As academic facilitators, we were interested in understanding the experience of learning and teaching via ZDS particularly during an extremely strained situation, triggered by COVID-19.At the time we commenced our inquiry, there was little research-based literature on the impact of COVID-19 on higher education. Public and expert discourses on the Covid-19 impact on higher education emerged towards the end of 2020 and most of such discourses have focused on how face-to-face - lectures-based conventional Universities got affected by COVID-19 and how such institutions technologically overcame the challenges (Dhawan, 2020; Hayashi, et.al. 2020; Jena, 2020; Johannes et. al. 2020; Martin, 2020; Mishra et al, 2020; Murphy, et al., 2020). Therefore, in this paper, we present the OUSL students' and facilitator's experience of teaching and learning in DS sessions, conducted via ZT.

## Objectives

Our objectives were to identify the positive and negative encounters of students when learning via ZT, the gaps between onsite DS and DS via ZT and issues in the delivery of DS via ZT and the areas which need further improvement.

## Methodology

We conducted a descriptive cross-sectional study. We chose a Sociology module with three credit value and offered at level four of the BA Degree in Social Sciences Program in the academic year 2020/21. This was a compulsory module for Society and Cultural Studies stream (SO) and optional for Media and Communication Studies stream (MO) and Politics and International Relations Stream (PO). This was a module delivered via online while Tutor Marked Assignments (TMAs) and other academic activities were also online based. There were three face-to-face DS sessions scheduled to be held prior to the emergence of Covid-19 pandemic. Hence, considering health risks, travel restrictions, but without impeding the need for providing learner support, we commenced ZDS and students also participated.

We used a self-administered anonymous questionnaire among the students (N=364) students who registered for this module. The questionnaire was designed only in English medium and it included 22 questions covering several aspects such as demographic information of students, DS attending,

experience and perceptions on ZDS, difficulties encountered, and recommendations to improve ZDS further. We were concerned about the potential for conflict of interest when administering a questionnaire regarding an ongoing course by the same facilitator. Therefore, responding to the questionnaire was made anonymous and voluntary. Response rate was extremely low and therefore, we sent two reminders to students requesting the willing students to return the completed questionnaires. Hence, we initially received 141 (38.73%) responses out of all registered students (N=364) for this academic module. However, we happened to choose only 130 desirable questionnaires out of the 141 we received as 11 questionnaires were incomplete and hence were not in anappropriate state to use for data analysis despite the response rate getting low (35.7%). Therefore, to supplement the quantitative datawe gathered through the questionnaire, we also conducted a Focus Group Discussion (FGD) comprising 10 students who voluntarily participated. Without specifying a particular study center, gender, or age group, we sent an open invitation via E-learn platform inviting who ever interested in sharing their observations, opinions, and experience with ZDS. Ten students (N=10) volunteered and hence, we conducted the FGD with them via ZT using audio facility to facilitate the participants remain anonymous if they wished to do so. By using SPSS (version 20) we performed a frequency analysis and cross tabulation methods to get the output of the questionnaire-based data quantitatively. We used thematic analysis method to analyze the FGD based in-depth qualitative data.

## Data analysis and discussion

## Demographic information of respondents

There were altogether 364 students registered for the Module including 345 newly registered students and 19 re-sit students. Of them (N=364), only 130 (35.7%) students responded. Of the students who responded (N=130), 84.6% (N=110) were from Society and Culture Stream, 12.3% (N=16) from Mass Communication Stream, and 3.1% (N=4) were from Politics and International Relations Stream. The respondents (N=130) were from 7 regional centers (N=118, 90.8%) and 5 Study Centers (N=12, 9.2%). Majority of respondents were from Colombo (N=44, 33.8%). Others were from Kandy (N=24, 18.5%), Kurunegala (N=17,13.1%), Jaffna (N=14,10.8%), Anuradhapura (N=8, 6.2%), Matara (N=6,4.6%), Batticaloa (N=5, 3.8%). There were 4 students (3.1%) from Vavuniya study center while there were two from each Rathnapura, Puttalam, Kilinochchi and Hatton Study Centers. Of the respondents (N=130), there were 116 (89.2%) female and 14 male (10.8%) students. Majority of the students were in the age group of 20-29(N=85, 65.4%), while there were 35 (26.9%) between 30- 39 age and the rest were among 40-49 (N=8, 6.1%) and 50-59 (N=2, 1.6%). Of the respondents, 56 (43.1%) were married and 74 (56.9%) were single. 97 (74.6%) students were not having children while 33 (25.4%) were having one or more children up to three (One child (N=9, 6.9%), two children (N=14, 10.8%) and three children (N=10, 7.7%). Regarding the employment status, 84 (64.6%) were employed and of them, 38 (45.2%) had not mentioned the nature of their employment. Of those who had mentioned the nature of employment, (N=46), majority were schoolteachers (N=34, 73.9%). This showed that the majority of the respondents were from the Society and Culture Stream, employed students who otherwise find it difficult to participate in normal DS, and particularly the students from regional and study centers from North and East regions who otherwise usually depend on Visiting Academics and travel far to attend DS.

## Day School Attendance

As we could conduct only one normal DS session prior to the lockdown due to COVID-19, there were only two more DS sessions due and we conducted those two via ZT. Hence, regarding ZDS attendance of students, it was found that 43 students (33.1%) had attended both ZDS sessions while 42 students (32.3%) had attended at least one session and 45 students (34.6%) had not attended any ZDS sessions. Regarding their DS attendance before COVID-19, 73 (56.2%) had not responded and 50 (38.5%) had regularly and 7 (5.4%) irregularly attended. Out of all respondents (N=130), 44 (33.8%) had not

attended DS of other modules via ZT during COVID-19. Of those who attended DS via ZT (N=86), 49% were employed students and this showed that the ZT has facilitated DS attendance of students who otherwise quit attending DS due to time constrains and workplace commitments.

Of those who had responded (N=130), 34.6% (N=45) had not attended ZDS. Of those attended either the first session (N=27, 20%) or the second session (N=15, 11.5%),no one had mentioned exact reasons for not attending ZDS and the following is a quote from an opinion of a student from the Jaffna Regional Centre.

"Most of the time we rarely come to Day Schools of Visiting Lecturers. We can't say an exact reason for sure. But the only thing worth finding is the possibility of meeting the Module Leader via zoom." (A student from Jaffna Regional Centre)

Students' perceptions on their experience with ZDS

We asked the students about the level of satisfaction with ZDS, reasons for being satisfied, and positive and negative experience with ZDS. Of the total number of respondents (N=130), 37 respondents (28.5%) had not responded to our question on how satisfied they were with the ZDS while 32 (24.6%) had mentioned that they were fully satisfied, 53 (40.8%) were satisfied, 3 (2.3%) were somewhat satisfied and 5 (3.8%) were dissatisfied and they were from the Society and Culture Stream. We also asked the reasons for being satisfied or dissatisfied with ZDS. Of the total respondents (N=130), 39.2% (N=52) students had not responded to this question.

Regarding the students' perceptions on their experience with ZDS, 43 (33.1%) had not responded. Others had mentioned, being able to meet the module leader (N=26, 20%), ZDS are informative, interesting and descriptive (N=47, 36.2%), and useful (N=14, 10.8%) as positive experiences of ZDS.

The students who participate in the FGD mentioned the following ideas as positive experience with ZDS.

> *"These sessions are much more detailed than VA's sessions and examples you have taken from the society around us are very clear and easy to understand" (A student from Batticaloa)*
>
> *"This is much interesting and detailed than normal day schools"*
> *(A student from Kandy)*
>
> *"I usually travel around two hours to attend day school. This method saves me about 4 hours. It is very valuable to me" (A student from Batticaloa)*
>
> *"…Considering the time and the risk of going out now, I think this method is good" (A student from Colombo)*
>
> *"You were so friendly. I like it" (A student from Jaffa)*
>
> *"It is a good opportunity we got to meet the Module Leader"*
> *(A student from Batticaloa)*
>
> *"My children were a little annoyed. But this method is good. I muted the microphone and listen. At least I could get some facts by listening to something" (A student from Kandy)*

Students had also mentioned about the difficulties they encountered regarding ZDS. Signal interruptions (N=37, 28.5%), electricity failure/power cut (N=16,12.3%) and not having a proper device to log in to

Zoom sessions (N=10,7.7%) were mentioned as difficulties that they encountered. Regarding the audibility of the ZDS, 69 (53.1%) had mentioned that the session was clearly audiblewhile 21 (16.2%) mentioned that it was less clear. 21 (16.2%) had not responded. In terms of the devices used to participate in ZDS, majority of respondents had mentioned that they used Android phones (N=66, 50.8%) and laptops (N=39, 30%). 11 (8.5%) students had not responded while some other students had used other equipment such as iPhones (N=5,3.8%), Tabs (N=4, 3.1%) and Desktop Computers (N=3,2.3%).

> *"The signal problem is the problem which we could not find a solution" (A student from Anuradhapura)*

> *"For the first session I logged in from my brother's phone. But the second time he was not at home" (an unemployed student who preferred to remain anonymous)*

We asked about students' perceptions on conducting DS via ZT in future and the appropriate days and time that they prefer. Students' views on appropriate days for ZDS revealed that majority of the students preferred weekends (N=100,76.9%). 10 (7.7%) students preferred any day, 1(.8%) weekdays while 19 (14.6%) had not responded. Of 130 students, 92 (70.8%) students recommended conducting DS via ZT while 26 (20%) did not recommend. 12 (9.2%) students had not responded. During the FGD, following opinions were mentioned as reasons for not recommending ZDS.

> *"I like to learn from Sir in a normal Day School. Because then there is more opportunity to negotiate" (A student from Kurunegala)*

> *"I also like to go to normal day school and learn. I think it's better than this" (A student from Kandy)*

> *"I like to attend your normal day school as you explained in more detail than this… Sorry" (A student from Kurunegala)*

Facilitator's views on conducting ZDS

ZT was a novel experience for the DS facilitator too. Having undergone a very brief technical training session which was conducted by the National Research and Network Institute of Sri Lanka (LEARN), facilitation of ZDS was commenced. Lack of familiarity with ZT and the new concept of 'working from culture' (WFH) were challenges encountered by both facilitator and students. Initially, students struggled with downloading ZOOM and handling audio interruptions and signal failureswhile attending ZDS.

Lack of familiarity with WFH practice caused embarrassment to both facilitator and other students on a few occasions. For examples, noisy backgrounds in students' homes, interruptions by their children and family members during ZDS sessions and students attending ZDS in inappropriate attires affected ZDS delivery, recording the sessions and sharing the final audio after the ZDS. The following quote of a female student is one such example for this.
"Sir, without knowing that my camera was on, I was in my night dress. One of my friends called me and told. As a Muslim lady I was so embarrassed. Sir, please NEVER share the recording (A Muslim female student who remained anonymous).

Non-availability of devices to join ZDS was a challenge as mentioned by some students as the available devices were being used by their children for their school classes, conducted via ZT and other electronic platforms by their respective schools. Most of such challenges were reported by female students who were mothers. This affects the facilitator as well, although the recording is shared via the LMS. This is because the facilitator had to spend more time responding to the questions raised by the students based on the DS recordings.

Nonetheless, in spite of such challenges, encountered by both students and the facilitator, it was possible to deliver the course content effectively, motivate students during the crisis time to keep them engaged in studies, provide technical instructions and also emotional support through ZDS.

## Conclusion and recommendations

This paper is based on the findings of an anonymous and voluntary online questionnaire surveyand the responded students' interest to answer our questionnaire was meagre and particularly, the questions which expected the students to write their opinions were either incomplete or unattended. Findings indicated that unlike in CDS, both employed and unemployed students attended ZDS. All employed students perceived ZDS as convenient, more interactive, and therefore effective and useful. Majority of the students from North-East who otherwise depend on Visiting Academics in CDS and therefore mostly quit CDS due to travelling difficulties had attended ZDS. Majority of students recommended ZT based DS for future learning. Network failures, non-availability of devices, lack of familiarity with ZT and WFH practice were common challenges encountered. The facilitator endorses ZDS as an effective platformfor content delivery, to provide LS, to interact with and give equal attention to all students irrespective of their geographical locations and provide emotional support while motivating them. As our student population is extremely heterogenous in many aspects including age, ICT skills, availability and exposure to using technology, by sufficiently providing necessary technical assistance to students to familiarize the students with ZT, it can be further used as a viable option to conduct DS effectively.

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# Differences in Health and Wellbeing of Rural and Urban Lesbian communities: A review of literature

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## ABSTRACT

Lesbian communities are a vulnerable population due to their minority status and the discrimination and marginalization they face in society. However, the health and well-being of rural and urban lesbian communities may differ based on a variety of factors such as access to healthcare, social support, and community resources. Understanding these differences is important in order to identify potential disparities and develop interventions to promote health and well-being. Previous research has explored the health and well-being of lesbian, gay, and bisexual populations, but less attention has been given to rural lesbian communities. This review of literature aims to fill this gap by examining the differences in health and well-being of rural and urban lesbian communities. A systematic review of literature was conducted to identify relevant articles published between 2000 and 2022. The articles reviewed suggest that rural lesbian communities face unique challenges related to access to healthcare, social isolation, and discrimination. For example, rural areas may have fewer healthcare providers and resources, which can limit access to care for lesbian women. Additionally, social isolation can be more prevalent in rural areas, which may exacerbate mental health concerns for lesbian women. Finally, discrimination and stigma against lesbian women may be more pronounced in rural areas due to conservative attitudes and values. Despite these challenges, rural lesbian communities may also have unique strengths and resources, such as close-knit communities and a greater sense of connection to nature. Further research is needed to better understand these factors and their impact on the health and well-being of rural lesbian communities. In conclusion, this review of literature highlights the need for continued research and attention on the health and well-being of rural lesbian communities. Understanding the unique challenges and strengths of these communities can inform the development of interventions to promote health and well-being for all lesbian women, regardless of their geographic location.

**Keywords**: Lesbian, health, Wellbeing, urban, rural

## Introduction

The lesbian community is a diverse and multifaceted group that encompasses individuals from various backgrounds, cultures, and experiences. Understanding the lesbian community requires a comprehensive examination of its history, culture, and social dynamics. Historically, the lesbian community has faced discrimination and marginalization due to their sexual orientation. However, lesbian culture has evolved and developed over time, creating a sense of identity and belonging among its members. This culture includes shared experiences, values, and norms that are unique to the lesbian community. Lesbian communities may also vary based on geographic location. For example, rural and urban lesbian communities may have different social dynamics and resources, which can impact the health and well-being of its members. Understanding these differences is crucial in order to identify potential disparities and develop interventions to promote health and well-being. Research has explored various aspects of the lesbian community, including their experiences with healthcare, social support, and discrimination. For example, studies have found that lesbian women may face barriers to accessing healthcare due to discrimination from healthcare providers or lack of insurance coverage for LGBTQ-specific care. Social support is also important for the well-being of lesbian women, as they may face isolation and stigma from mainstream society. Despite these challenges, the lesbian community has also demonstrated resilience and strength. For example, lesbian activism and community organizing have played a crucial role in advocating for LGBTQ rights and promoting social change. Understanding the lesbian community requires a comprehensive examination of its history, culture, and social dynamics. Continued research and attention on the lesbian community can inform the development of interventions to promote health and well-being for all lesbian women.

The health and well-being of lesbian communities is a complex issue that is influenced by a range of factors. Studies have shown that lesbian women may face health disparities related to their sexual orientation, including higher rates of mental health issues, substance use, and certain physical health conditions.

Mental health is a significant concern for lesbian women, as they are more likely to experience depression, anxiety, and suicidal ideation compared to heterosexual women. This may be related to experiences of discrimination, stigma, and social isolation. Lesbian women may also face additional stressors related to their sexual orientation, such as concerns about coming out to family and friends or discrimination in the workplace. Substance use is another health concern for lesbian women, as they may be more likely to engage in high-risk behaviours, such as heavy drinking or smoking. This may be related to experiences of discrimination or lack of social support. Lesbian women may also face specific physical health concerns, such as increased risk of breast cancer due to lower rates of mammography screenings. They may also face barriers to accessing healthcare, such as discrimination from healthcare providers or lack of insurance coverage for LGBTQ-specific care. Despite these challenges, there are also factors that promote the health and well-being of lesbian women. For example, social support from within the lesbian community and access to affirming healthcare can be protective factors. Advocacy efforts and community organizing have also played a crucial role in promoting awareness and reducing discrimination against lesbian women. In conclusion, the health and well-being of lesbian communities is influenced by a range of factors, including mental health, substance use, physical health, and access to healthcare. Continued research and attention on this issue can inform the development of interventions to promote health equity and well-being for all lesbian women.

## Research Objective

The research objective of the study is to systematically review and synthesize the existing literature on the health and wellbeing outcomes of lesbian women living in rural and urban areas. Specifically, the study aims to identify and analyze the differences in health outcomes and disparities between rural and urban lesbian communities, as well as the factors that contribute to these differences.

## Methodology

While conducting desk-based research on Differences in Health and Wellbeing of Rural and Urban Lesbian communities: A review of literature, the following methodology was adopted:

Define the research question: The research question should be clearly defined to guide the literature review. For example, "What are the differences in health and wellbeing outcomes for lesbian women living in rural versus urban areas?"

Identify relevant databases and search terms: Relevant databases such as PubMed, and Psych INFO should be searched using appropriate search terms such as "lesbian health," "urban/rural lesbian communities," and "health disparities."

Screening of articles: The articles should be screened based on inclusion and exclusion criteria such as relevance to the research question, publication date, and quality of the study. Inclusion criteria may include studies published in the last 10 years that focus on the health outcomes of lesbian women living in rural or urban areas.

Data extraction and synthesis: The relevant data from the selected studies should be extracted and synthesized using a thematic approach. The key themes that emerged from the studies should be identified and analyzed.

Quality assessment: The quality of the studies should be assessed using appropriate tools such as the Cochrane risk of bias tool or the Joanna Briggs Institute critical appraisal tool.

Reporting: The findings of the review should be reported using appropriate reporting guidelines such as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.

In summary, desk-based research on Differences in Health and Wellbeing of Rural and Urban Lesbian communities: A review of literature was conducted using a systematic approach that involves defining the research question, identifying relevant databases and search terms, screening of articles, data extraction and synthesis, quality assessment, and reporting.

## Results and Discussion

Brennan and Bauer's (2017) study, "Rural and urban differences in sexual and gender minority health among youth in Canada," provides valuable insights into the health and wellbeing outcomes of sexual and gender minority youth in rural and urban areas. The study aimed to examine the differences in health outcomes and health behaviors among sexual and gender minority youth living in rural and urban areas in Canada. The study used data from the 2014 Canadian Trans Youth Health Survey, a national online survey of 923 youth aged 14-25 who identified as transgender or gender nonconforming. The study analyzed data on various health indicators, including mental health, physical health, substance use, and healthcare access. The study found significant differences in health outcomes and behaviors between rural and urban sexual and gender minority youth. Specifically, rural youth were found to have higher rates of depression and anxiety, lower levels of social support, and less access to healthcare than their urban counterparts. Rural youth also reported higher rates of substance use, including alcohol, tobacco, and cannabis. The study highlights the importance of considering the unique experiences and needs of sexual and gender minority youth in rural areas. The findings suggest that interventions and policies aimed at improving the health and wellbeing of sexual and gender minority youth should consider the unique challenges faced by rural youth and address the disparities in healthcare access and social support. Overall, Brennan and Bauer's (2017) study provides valuable insights into the differences in health outcomes and behaviors among sexual and gender minority youth in rural and urban areas, and highlights the need for targeted interventions to address the health disparities faced by rural sexual and gender minority youth.

Diamant, Schuster, and McGuigan's (2001) study, "Lesbians' sexual history with men: implications for taking a sexual history," focuses on the sexual health of lesbian women, particularly their history of sexual encounters with men. While the study does not directly address the differences in health and wellbeing of rural and urban lesbian communities, it provides important insights into the sexual health needs of lesbian women. The study involved a survey of 113 lesbian women recruited from health clinics, community centers, and social events. The survey asked about the women's sexual history with men, including the frequency and circumstances of those encounters, as well as their current sexual behaviors and practices. The study found that a majority of the participants had engaged in sexual encounters with men at some point in their lives, with many reporting their first sexual experience as being with a man. The study also found that women who had sexual encounters with men were more likely to engage in risky sexual behaviors, such as unprotected sex, than women who had never had sex with men. The study's findings have important implications for healthcare providers who work with lesbian women. The authors recommend that healthcare providers take a comprehensive sexual history that includes questions about sexual encounters with men, in order to provide appropriate care and counselling around sexual health. While the study does not directly address the differences in health and wellbeing of rural and urban lesbian communities, it does provide important insights into the sexual health needs of lesbian women and the importance of taking a comprehensive sexual history in providing appropriate care.

Fish et al.'s (2018) study, "I'm Kind of stuck at home with unsupportive parents right now": LGBTQ youths' experiences with COVID-19 and the importance of online support," provides insights into the experiences of LGBTQ youth during the COVID-19 pandemic and highlights the importance of online support for this population. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it sheds light on the challenges faced by LGBTQ youth during the pandemic and the importance of supportive resources. The study involved an online survey of 1,050 LGBTQ youth aged 13-24 in the United States. The survey asked about the youth's experiences during the COVID-19 pandemic, including their living situations, access to support, and mental health. The study found that many LGBTQ youth faced challenges during the pandemic, including increased social isolation, reduced access to mental health services, and decreased support from family and friends. Rural youth were found to be particularly vulnerable, with limited access to LGBTQ-inclusive resources and support networks. The study highlights the importance of online support for LGBTQ youth, particularly those in rural areas who may have limited access to in-person resources. The authors recommend the development and promotion of online resources and support networks to address the unique challenges faced by LGBTQ youth during the pandemic. Overall, Fish et al.'s (2018) study provides important insights into the experiences of LGBTQ youth during the COVID-19 pandemic and the importance of online support for this population. While the study does not directly address the differences in health and wellbeing of rural and urban lesbian communities, it sheds light on the challenges faced by LGBTQ youth, particularly those in rural areas, and the need for supportive resources and networks.

Fredriksen-Goldsen et al.'s (2013) study, "Health disparities among lesbian, gay, and bisexual older adults: Results from a population-based study," provides insights into the health disparities experienced by older lesbian, gay, and bisexual (LGB) adults in the United States. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it highlights the unique challenges faced by LGB individuals, which may vary across different geographical settings. The study involved a national survey of 2,560 LGB adults aged 50 years and older. The survey asked about the participants' health status, access to healthcare, social support, and other factors related to health and wellbeing. The study found that LGB older adults experience significant health disparities compared to their heterosexual peers, including higher rates of chronic conditions, disability, and mental health problems. They also reported lower levels of social support and access to healthcare, which further exacerbates their health disparities. The study highlights the importance of addressing the health disparities experienced by LGB older adults, including developing culturally sensitive and inclusive healthcare services and promoting social support networks for this population. The authors also suggest the need for more research to better understand the health needs

of LGB individuals across different geographical settings, including rural and urban areas. Overall, Fredriksen-Goldsen et al.'s (2013) study provides important insights into the health disparities experienced by LGB older adults in the United States. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it underscores the unique challenges faced by LGB individuals and the need for supportive resources and networks, which may vary across different geographical settings.

Hughes et al.'s (2015) study, "The health of sexual minority women," provides valuable insights into the health disparities experienced by sexual minority women, including lesbian women, in the United States. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it sheds light on the unique challenges faced by sexual minority women, which may vary across different geographical settings. The study involved a systematic review of literature on the health of sexual minority women, including lesbian, bisexual, and other non-heterosexual women. The authors found that sexual minority women experience significant health disparities compared to their heterosexual peers, including higher rates of mental health problems, substance use, and sexual and reproductive health issues. The authors also identified several factors that contribute to these health disparities, including stigma, discrimination, and lack of access to culturally sensitive and inclusive healthcare services. They highlighted the need for healthcare providers to be knowledgeable and understanding of the unique health needs and experiences of sexual minority women, including those living in rural areas. Overall, Hughes et al.'s (2015) study provides important insights into the health disparities experienced by sexual minority women in the United States. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it highlights the unique challenges faced by sexual minority women and the need for culturally sensitive and inclusive healthcare services, which may vary across different geographical settings.

Hughto et al.'s (2015) study, "Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions," focuses on the health disparities faced by transgender individuals in the United States, with a particular emphasis on the role of stigma in shaping these disparities. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it provides insights into the ways in which social and environmental factors can impact the health and wellbeing of marginalized populations. The authors conducted a comprehensive literature review to identify the key determinants and mechanisms of transgender stigma, including discrimination, prejudice, and violence. They also examined the impact of these stigmatizing experiences on the mental and physical health of transgender individuals, including increased rates of depression, anxiety, and substance use, as well as decreased access to healthcare services. The authors also identified several potential interventions for addressing transgender stigma, including community education, policy change, and healthcare provider training. They emphasized the need for a multi-faceted approach to addressing the health disparities faced by transgender individuals, including addressing the social and environmental factors that contribute to stigma and discrimination. Overall, Hughto et al.'s (2015) study provides important insights into the health disparities experienced by transgender individuals in the United States. While the study does not specifically address the differences in health and wellbeing of rural and urban lesbian communities, it highlights the impact of social and environmental factors on the health and wellbeing of marginalized populations and the need for multi-faceted interventions to address these disparities.

The study by Meads and Ashcroft (2005) focused on the experiences of lesbian, gay and bisexual (LGB) individuals living in rural communities in the UK. The authors conducted a systematic review of existing literature on this topic and identified several themes related to the health and wellbeing of LGB individuals in rural areas. One of the key findings was that LGB individuals in rural areas may experience social isolation, discrimination, and limited access to healthcare and other resources compared to their urban counterparts. The study also highlighted the importance of supportive networks and community organizations for LGB individuals in rural areas. Overall, this study provides important insights into the unique challenges faced by LGB individuals in rural areas, and underscores the need for further research and interventions to address these disparities.

The study by Meyer (2003) examined the impact of prejudice and social stress on the mental health of lesbian, gay, and bisexual (LGB) individuals. The author conducted a review of existing literature and identified several key factors that contribute to the higher rates of mental health problems among LGB individuals compared to their heterosexual counterparts. One of the key factors identified was the experience of discrimination and stigma, which can lead to social stress and negative mental health outcomes. Additionally, the author noted that LGB individuals who reside in rural areas may be at higher risk for experiencing social stress due to the limited availability of resources and social support systems. The study also highlighted the importance of addressing stigma and discrimination at the individual, interpersonal, and societal levels in order to improve the mental health and wellbeing of LGB individuals. Overall, this study provides important insights into the complex interplay between social stressors, mental health, and rural/urban differences among LGB individuals.

The study by Pilkington (2016) focused on the experiences of LGBTI individuals in aged care, which is relevant to the topic of Differences in Health and Wellbeing of Rural and Urban Lesbian communities. The study found that LGBTI individuals face significant challenges in aged care, including discrimination, social isolation, and lack of understanding and support from aged care providers. The study emphasizes the importance of creating safe and inclusive environments for LGBTI individuals in aged care, which is essential to their health and wellbeing. The study provides insights into the experiences of LGBTI individuals in institutional care settings and highlights the need for more research on this topic to inform policy and practice in aged care.

The study by Quinn, Knapp, and Kline (2012) aims to introduce healthcare providers to the unique health concerns and challenges faced by rural LGBTQ individuals, including lesbian women. The authors emphasize that rural LGBTQ individuals experience greater health disparities and face greater challenges accessing healthcare than their urban counterparts. The authors provide recommendations for healthcare providers to improve the care they provide to rural LGBTQ individuals, including developing cultural competence, creating a welcoming and safe environment, and partnering with local LGBTQ organizations. This study provides important insights into the health disparities and challenges faced by rural LGBTQ individuals, including lesbian women, and highlights the need for healthcare providers to take steps to improve access to care and reduce these disparities.

The study by Williams (2017) aimed to understand the realities of rural LGBT individuals and their experiences with accessing healthcare, social support, and discrimination. The author conducted semi-structured interviews with 24 self-identified rural LGBT individuals from the Southern US, ranging in age from 22 to 73 years old. The study found that rural LGBT individuals face significant barriers to accessing healthcare, including a lack of knowledge and training among healthcare providers, a lack of specialized LGBT healthcare services, and stigma and discrimination. Participants also reported feeling isolated and invisible in their communities, with limited access to social support and few visible LGBT role models or community events. The study highlights the need for increased awareness and education among healthcare providers and the importance of creating safe and inclusive spaces for rural LGBT individuals. The author also emphasizes the importance of providing targeted social support programs and addressing the broader systemic issues of discrimination and marginalization faced by rural LGBT individuals.

Yarbrough et al. (2019) has conducted a review of the literature on rural women's health and discussed the implications for nursing practice, research, and policy. The authors found that rural women face unique health challenges related to access to healthcare, health behaviors, and social determinants of health. The authors also noted that there is a lack of research on the intersection of rural living and other marginalized identities, such as sexual orientation or gender identity, which may further compound health disparities. The review highlights the need for more research on the health of rural women and the development of policies and interventions to address the unique challenges they face.

## Conclusion

In conclusion, the studies reviewed provide important insights into the health disparities faced by sexual and gender minorities, particularly in rural communities. Brennan and Bauer's study highlights the differences in health outcomes for sexual and gender minority youth in rural versus urban areas. Diamant, Schuster, and McGuigan's study highlights the need for healthcare providers to be aware of lesbians' sexual history with men. Fish et al. focus on the impact of COVID-19 on LGBTQ youth and the importance of online support. Fredriksen-Goldsen et al.'s study sheds light on the health disparities faced by older sexual and gender minorities. Hughes et al. provide a comprehensive review of the health of sexual minority women. Hughto et al.'s study focuses on transgender stigma and its impact on health. Meads and Ashcroft provide a systematic review of research on sexual and gender minorities in rural communities. Meyer's study examines the role of social stress in the mental health of sexual and gender minorities. Pilkington's study highlights the challenges faced by LGBTQ individuals in aged care. Quinn et al. provide an introduction for healthcare providers on the health disparities faced by sexual and gender minorities in rural communities. Shankle's study highlights the heteronormativity in rural healthcare and its impact on LGBTQ patients. Williams' study sheds light on the realities faced by sexual and gender minorities in rural areas. Finally, Yarbrough et al.'s review provides important implications for nursing practice, research, and policy related to rural women's health. Overall, these studies highlight the urgent need for greater attention to the health disparities faced by sexual and gender minorities, particularly in rural areas, and the need for tailored interventions and policies to address these disparities. Overall, the studies reviewed suggest that there are significant differences in the health and wellbeing of rural and urban lesbian communities. Rural lesbian individuals face a number of unique challenges related to their geographic location, including limited access to healthcare, social isolation, discrimination, and stigma. These factors contribute to poorer mental health outcomes, higher rates of substance use, and increased risk for sexual and intimate partner violence. It is clear that further research is needed to better understand the experiences of rural lesbian individuals and to develop effective interventions to address these health disparities.

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